Executive summary

Public health agencies are a lot like fire departments. They teach and practice prevention at the same time they maintain readiness to take on emergencies. They are most appreciated when they respond to emergencies. They are most successful—and least noticed—when their prevention measures work the best.

In another respect, the two are different. We all know what a fire department does; few of us know what a public health department does. The very existence of health departments is testament to the fact that, when legislators, county commissioners, and other policy makers understand what those departments do, they support them. It is a rare person who, once familiar with the day-to-day activities of a public health department, would want to live in a community without a good one.

What constitutes a good public health department? What must it be able to do? How much capacity is required? How do we measure it? The Public Health Improvement Plan (PHIP) answers these questions.

The real causes of health problems

Most preventable health problems—including about half of all deaths—are caused by tobacco use, improper diet, lack of physical activity, alcohol misuse, microbial and toxic agents, firearm use, unsafe sexual behavior, motor vehicle crashes, and illicit use of drugs. These causes are chiefly a result of human behavior. While universal access to personal medical care is a critical goal of health system reform, personal behavior change has greater potential to address the fundamental causes of health problems.

Since 1900, the average life expectancy of Americans has gone from 45 to 75 years—a 30 year increase. Public health, through such measures as sanitation, immunization, and education, is responsible for about 25 of those years.

The heart of public health: Population-based prevention

The goal of public health is prevention of disease, injury, disability, and premature death. Prevention includes: 1) Primary prevention (the focus of public health), which reduces susceptibility or exposure to health threats. Immunizations and health education are examples. 2) Secondary prevention, which most often detects and treats disease in early stages. A mammography program to detect breast cancer is an example. 3) Tertiary prevention, which alleviates some of the effects of disease, injury, and disability through such means as surgery, physical therapy, and medication.

Public health is not simply medical care funded or provided through public means. The services of public health are less visible and more difficult to understand than medical services. Public health prevention protects entire communities or populations from such threats as communicable diseases, epidemics, and environmental contaminants. It does so through a highly collaborative approach which most often affects us as members of the general public rather than as patients.

The most common and effective public health activities are in the area of primary prevention, which has two main components: health promotion and health protection.

Health promotion includes health education and the fostering of healthy living conditions and life-styles. Activities are directed toward individuals, families, groups, or entire communities, helping people identify needs, get useful information and resources, and take action to achieve change.

Health protection services and programs control and reduce the exposure of the population to environmental or personal hazards, conditions, or factors that may cause health problems. Health protection includes immunization, infectious disease surveillance and outbreak investigations, water purification, sewage treatment, control of toxic wastes, inspection of restaurant food service, and numerous other activities.

The core functions of public health

It is often difficult to determine where and when public health threats are occurring. The process of doing this is called health assessment. It includes collection, analysis, and dissemination of information on health status, personal health problems, population groups at greatest risk, availability and quality of services, resource availability, and concerns of individuals.

Assessment leads to policy development, a complex process of considering alternatives for action and deciding which to pursue. Policy development involves many individuals and organizations in decision making about the relative importance of various public health problems.

After policies are formulated, the next step is assurance—seeing that those policies are carried out. Public health agencies may carry out a policy themselves or they may monitor its implementation by other community partners.

These three functions—assessment, policy development, and assurance—are the core functions of public health outlined by the Institute of Medicine in a comprehensive 1988 national planning document, The Future of Public Health. Washington's Public Health Improvement Plan refines this framework, outlining the major responsibilities of state and local public health agencies.

Washington's plan retains the concepts of assessment and policy development, as presented in The Future of Public Health. It adds a significant piece on prevention and broadens the assurance function with a section on access and quality. The final ingredient of the Washington plan is administration, which supports public health functions through a number of essential activities regarding personnel, budgeting, accounting, contracts, facilities, and information technology.

Public health is a bargain

Public health measures are responsible for most of the improvements in health that we have experienced in this century, but they are funded by a very small and decreasing portion of the total dollars we spend on health. The great majority of those total health dollars—both taxes and private spending—go for what is more appropriately called "illness and injury care" rather than "health care." Of the total estimated $18 billion spent in Washington State annually, less than two percent goes for public health.

We have a choice. We can wait until people become ill, injured, or disabled, and then treat them in our expensive medical care system, or we can deal with the causes of these problems and prevent many of them from ever happening. The choice we make affects how much money we must spend, and what we spend it on.

Many public health prevention programs cost less than the treatment services needed if prevention is absent. Proven cost-effective public health measures include water fluoridation to prevent tooth decay, smoking cessation among pregnant women to prevent low birth weight, immunization to prevent measles and mumps, and health education of consumers to reduce their need for medical services.

Adequate and stable public health infrastructure

The ability to prevent public health problems or respond to emergencies cannot be created each time an epidemic breaks out, a water supply is contaminated, or a toxic chemical is spilled. Successful health promotion and protection activities require continuous, consistent effort. The public health system requires a solid, ongoing capacity to monitor, anticipate, and respond to health problems, regardless of which disease or public health threat has the public's attention at the moment.

Health problems are seldom static; they are not uniform throughout Washington, either geographically or from year to year. To successfully address them, we need the best possible information on the nature and extent of the problems. We have a certain capacity, right now, to assess these problems, but that capacity should be significantly improved.

Capacity standards: Defining the infrastructure

This plan defines the core function capacity that Washington's local and state public health jurisdictions must have. The 88 capacity standards presented in the plan are the most definitive description we have to date of what well-functioning public health agencies must be able to do. They are a guide for public health jurisdictions as they examine and refine their role in protecting communities.

The standards are in functional groupings: community health assessment; development of public health policy; assuring community access to quality health care services; protecting the community against public health threats; promoting public health within the community; and providing the leadership, financial, and organizational administration required to integrate these functions into a coordinated, effective public health system. These standards will become the basis for contractual arrangements between state and local jurisdictions.

The goal is that the problem-specific, separately funded public health programs of today will be linked together through a series of system-wide standards that focus less on a list of specific health problems or programs and more on the basic responsibility of state and the local public health jurisdictions of assuring healthy conditions in communities.

Improving health status

The health status of a population can be tracked, analyzed, and improved through public health measures, using as a reference point such indicators as death rates and disease incidence and prevalence rates. With the improvements in core function capacity called for in this plan, we could significantly improve our understanding of important public health problems in Washington. Stronger health assessment, backed up by improved capacity for the other core functions—especially policy development and prevention—will give us the opportunity to intelligently choose the strategies that will address the most pressing problems in the most effective manner. This will bring real improvements in health status, which is, after all, the ultimate goal.

The plan describes thirty-nine key public health problems and possible interventions in five general areas: infectious disease; non-infectious disease; violence and injury; family and individual health; and environmental health.

For each key problem, the plan establishes outcome standards, which are long-term Washington State-specific objectives, generally for the year 2000. They define optimal, measurable future levels of health status, maximum acceptable levels of disease, injury, or dysfunction, and in some cases the degree to which a particular service or program is operational.

The plan also introduces the concept of threshold standards. Threshold standards define death rates or levels of illness or injury in a community or population which, if exceeded, call for closer attention and may signal alarms for action. A threshold is also a way of measuring progress toward an established outcome standard.

The public health-medical care partnership

There are 33 local health jurisdictions in Washington, covering the entire state. Organized on a county or multi-county basis, they are the action arms of the public health system, with responsibility for program design and delivery. Every city, town, and county must either form a local health department or district or be part of a health department with other local jurisdictions. The largest local health jurisdiction—the Seattle-King County Department of Public Health — serves over one and a half million people, over 30 percent of the state's population. The smallest—the Garfield County Health Department—serves just over 2000 people. The ten largest jurisdictions serve 80 percent of the state's population. The ten smallest serve two percent.

In the reformed health system envisioned for Washington, all state residents will be insured for a comprehensive set of benefits and will receive most of their personal and family care from practitioners through certified health plans. Local and state public health agencies will monitor health status and threats to health, helping communities set priorities and strategies for action, and assuring that strategies are carried out successfully.

To succeed at both preventing and treating health problems, the public health and medical care systems must work closely together. The Health Services Act promotes shared responsibility among the Washington Health Services Commission, the Health Care Authority, the Department of Health, the State Board of Health, and other health-related state agencies for improving the health of state residents. The commission is responsible for focusing the attention of certified health plans on improving health status, not just on providing health care services. The Health Care Authority will expand access to needed health care services through publicly sponsored health plans and programs. The department and board, in carrying out their duties to collect and analyze health data and set statewide priorities, will inform the commission of health problems that certified health plans should address.

Clinical personal health services in public health

Overall, our current medical care system concentrates on clinical curative and therapeutic services rather than prevention. To some extent, the public health system has been influenced by that emphasis. Twelve percent of public health dollars in Washington State are now used for a variety of clinical personal health services, with the great majority of these resources spent in five areas: vaccine and immunization; sexually transmitted diseases (STDs); HIV/AIDS; family planning/reproductive health; and tuberculosis. This has sometimes impeded the capacity of public health jurisdictions to focus on primary prevention. On the other hand, a certain amount of clinical services are necessary in the public health system to provide optimal protection of the general public from infectious diseases. These activities require expertise and approaches to service delivery not commonly found in the overall health care system. Public health should continue to provide these clinical services in keeping with a fundamental responsibility to protect the public's health.

Categorical programs

For much of the past forty years, public health has been defined by a series of categorical programs and problems such as AIDS, tuberculosis, sewage treatment, immunizations, foodborne illnesses, and primary care for the underserved. When a problem was identified and brought into public view, legislators enacted laws and appropriated funds to address that specific problem. Public health agencies responded by organizing themselves to carry out disease-specific or problem-specific programs.

Some categorical programs have been quite important and successful, such as the state's Omnibus AIDS Act and statewide sexually transmitted disease prevention efforts. However, the reliance on such single-focus programs to finance public health has left these agencies with insufficient resources to continuously monitor health-related factors affecting the entire community and maintain the capability to deal with health threats not included in categorical programs.

The need for additional capacity

In May 1994 Washington State used a nationally-designed Centers for Disease Control survey to develop general information on our performance of the three core functions defined by the National Institute of Medicine (assessment, policy development, and assurance). The results show significant deficits in both the presence of these core functions in communities and in the adequacy of the functions where they are present.

The project also gathered information about performance of the categories of core functions as outlined in the PHIP capacity standards (assessment, policy development, access and quality, protection, promotion, and administration). It was determined that most of the capacity standards are being addressed in some way, but that statewide, when both local and state agencies are combined, only 9% of capacity standards are being fully met.

While these estimates of needed capacity are general in nature, they do show there are deficits in our ability to fully meet the core function capacity standards, at both the state and local levels. A more detailed description of these analyses, Methodology for Assessment of Performance and Resource Requirements, is available upon request from the Department of Health.

Resources to meet the capacity standards

To estimate resources needed to meet the capacity standards, the PHIP focused on staffing because the great majority of the operating costs of public health agencies are personnel costs and there are existing formulas for determining indirect operating costs for staffed positions. The use of work force to estimate an annual public health resource gap is not intended as the suggested approach for the use of all new funds. For example, some capacity standards might be met through restructuring of the system, expanded use of technology, reallocation of resources, and extending public health partnerships with the private and voluntary sectors.

The conclusion was that the public health system statewide (both the Department of Health and all the local public health jurisdictions) needs about $104 million per year, in addition to the $330 million now spent on public health, to fully meet all the capacity standards.

This is the estimated deficit between where the official public health system is in 1994 and the vision of where the system should be in 2001. It is similar to the findings of a 1993 survey that estimated the costs of addressing urgent unmet public health needs in Washington at $112 million a year.

This estimate is only a reference point; it will be refined and adjusted as cost saving models for public/private partnerships are tested and implemented, as public health work force skills and performance are enhanced, as communication and information technologies are applied, as the public health system is restructured, and as health system reform in the State of Washington evolves.

It is not recommended that the entire resource deficit be made up during the upcoming 1995-1997 biennium. The plan will bring major changes in the public health system. To make those changes effectively, and to allow for adjustments as the complexities of broader health system reform unfold, implementation should be phased in over a six-year period, from July 1995 through June 2001. The new funds should begin with $17.5 million in the first year (1995) and increase annually by that amount over the next five years ($17.5 million, $35 million, $52.5 million, $70 million, $87.5 million, and $104 million) until the annual increase is $104 million in 2001.

Public health finance and governance

There are three crucial finance and governance issues in Washington's public health system that are addressed in the plan.

First, varied organizational and governance structures of local public health jurisdictions often make it difficult for them to work together. Second, unclear relationships exist in some areas between local jurisdictions, Indian tribes, and the state. Third, state and local resources are inadequate, caused partly by a lack of dedicated, stable funding of the public health system.

To address these issues, the public health system should:

- Establish clear measures and methods for determining whether health jurisdictions are meeting the capacity standards.
- Recognize the autonomy of tribal governments and work closely with them to improve the health of American Indian people.
- Have dedicated sources of funding, including a percentage of the Health Services Account, a mechanism whereby private sector financing of health care reflects the public costs of protection and promotion of the health of the population, and other sources as identified in the future.
- Assure that additional state funds for public health will expand and complement, but not supplant, present local government support for public health.
- Establish methods of distributing funds that encourage collaboration between local health jurisdictions and consider local ability to pay, population, geography, and other relevant factors.

Six Year Implementation of the PHIP

The Public Health Improvement Plan is an ambitious departure from business as usual. It proposes a six-year phase-in period to fully meet all 88 capacity standards in all areas of the state. During this time, there must be growing collaboration and cooperation among all parts of the public health system, with a strong and consistent focus on prevention.

This is an ongoing plan, to be submitted to the Legislature every biennium. It will be evaluated and revised on a regular basis, with attention to emerging trends, the relative success of different interventions, and the need to address real problems with the best tools at our disposal.

Recommendations for action, 1995-97 biennium

The 1994 the PHIP proposes a number of high priority actions that will begin the implementation of the capacity standards, and finance and governance recommendations. These actions should begin now.

Collaboration

1. Local public health jurisdictions should take the lead in developing a plan for shared responsibilities with certified health plans and other community agencies.
2. The State Department of Health, in collaboration with local public health agencies, should provide technical assistance to certified health plans and other community providers to strengthen their ability to prevent disease and promote public health.
3. State and local public health agencies should help develop communication policies and networks among state and local public health jurisdictions and other community health-related agencies.

4. The State Department of Health should collaborate with the Washington Health Services Commission in a statewide education campaign about ways to protect and improve the public's health.
5. The State Department of Health should implement short-term financial incentives to strengthen coordination and collaboration among local public health jurisdictions and other community based health-related agencies.

Core function capacity building

6. New state funds for public health should emphasize improving capacity for assessment, health promotion, and access and quality, recognizing that the unique needs of specific jurisdictions may require early investments in policy development and protection.
7. The Department of Health should develop and offer technical assistance to local public health jurisdictions to help them make decisions concerning clinical personal health services.
8. The Department of Health should work closely with the local public health jurisdictions to assist them in developing the capacity for community health planning and community mobilization.
9. The Department of Health should help develop and implement a professional training and educational program to enhance the competencies of the public health work force to perform the core public health functions.
10. The Department and local jurisdictions should participate in the development of the Health Services Information System.

Financing

11. The Department of Health should explore ways of minimizing the negative effects of changes in local government public health financing, including a possible short term subsidy to local jurisdictions while it develops other sources of funding.
12. The Department of Health should provide financial incentives to local health jurisdictions to encourage collaboration among state and local health jurisdictions and other community-based public health agencies.
13. The Department of Health should develop a contract and financial tracking system to provide accountability for contract funds to local health jurisdictions and to determine cost effectiveness of public health investments.

Clinical personal health services transition

14. For the 1995-97 biennium, current public health funds supporting clinical personal health services should remain in the public health system.
15. The Department should work closely with local public health jurisdictions, the Washington Health Services Commission, and certified health plans to monitor the transition of clinical personal health services from public health to private health coverage.

Legislation

16. The Department of Health should review state laws and regulations to identify those related to public health and make recommendations about needed changes.
17. The Department of Health shall evaluate whether or not legislation is necessary to implement the PHIP vision of a new frame work for public health in Washington based on the capacity standards.

Conclusion

Through the implementation of the Public Health Improvement Plan, the health problems of Washington State will continue to be addressed, but in a much more efficient, comprehensive, and participatory process. The public health system will begin a shift away from its present emphasis on single issue funding and individual patient treatment toward a more expansive approach that focuses on health protection and promotion for all members of the community. Since the ultimate goal of the PHIP is to protect and improve the health of Washington citizens, ongoing evaluation of the plan will involve assessing the progress toward the recommended outcome standards. Success of the 1994 PHIP will require adequate funding, implementation of the 88 capacity standards, and collaborative efforts to achieve all recommended standards.

Target Population

PublicH

Population-Based

Real Causes of Death

Risk Factors

Chapter 1

Public health: What it is and why we need it

We see it all too often on TV, in the newspaper, in our neighborhoods: A child suffers a debilitating head injury in a bicycle crash because she wasn't wearing a helmet; two teenagers die in a car crash caused by a drunk driver; a 45 year old man ends up in the hospital with congestive heart failure, having smoked since he was 12; a toddler, sick from under cooked restaurant meat, clings to life in an intensive care unit.

These preventable tragedies happen too often and cost too much.

In 1990, nearly 8,000 Washingtonians died from tobacco-related illness — one-fifth of all deaths in the state. Direct medical care costs associated with tobacco use that year were estimated at $437 million. The loss of economic productivity from people dying young or getting sick added an estimated $845 million to the costs.

Motor vehicle crashes are the leading cause of unintentional injury and death for children aged 1-14 in Washington. Child safety seats lower a child's chance of death and injury by about 70%. In 1991, child safety seat use prevented more than 180 deaths and 70,000 injuries nationwide, for a total estimated savings of $3.5 billion.

A 50% bicycle helmet use rate would result in an estimated 840 fewer head injuries among children ages 5-9 over a five year period, saving approximately $9.5 million.

Cardiovascular disease (CVD), including heart disease and stroke, is the leading cause of death in Washington, accounting for about 42% of all deaths. CVD mortality can be reduced by controlling four major modifiable risk factors: physical inactivity, tobacco use, high blood pressure, and high cholesterol.

Public health threats: A part of our world

What do cigarettes, cars, raw meat, and septic tanks have in common?

First of all, they affect every person in our society. We may modify their influence according to our likes and dislikes, but we can not avoid them completely.

Secondly, they can be health threats of the first magnitude. The first line of defense against these health threats is not medical care, but something less visible and harder to define—something we call public health.

When medical care becomes necessary—to treat lung cancer or emphysema, to repair human damage caused by a car crash, to keep a child alive after an attack of *E. coli*, to treat severe intestinal disease—it's a safe bet that insufficient resources were

The real causes of health problems

Most preventable health problems in our society—including about half of all deaths—are caused by tobacco use, improper diet, lack of physical activity, alcohol misuse, microbial and toxic agents, firearm use, unsafe sexual behavior, motor vehicle crashes, and illicit use of drugs.

The environment and community in which we live affect our ability to make good choices about our health. The extent to which we adequately educate our children, provide opportunities for jobs, and ensure a clean and safe environment will make a difference.

While universal access to personal health care is a critical goal, it will not, in and of itself, fully address these fundamental causes of illness, injury, disability, and premature death.

The element of personal and community responsibility in these causes of health problems is inescapable. With the possible exception of some microbes and toxic agents, all of the causes listed above are primarily a result of human behavior.

allocated to the public health system to address the problem earlier. The degree of success of the preventive public health measures affects the extent of the problems in society and the types and amounts of medical care needed.

The burning cigarette, the moving car, the raw hamburger, and the failed on-site sewage system are all carriers of health threats which are best dealt with early.

The properly functioning septic system helps protect the source of one of life's essentials—safe water. If the septic system fails and allows sewage to contaminate water supplies, it can be instrumental in wreaking havoc on human digestive systems. One of the jobs of public health is to identify on-site sewage systems that do not adequately protect water sources.

The raw hamburger can be a source of nourishment and sustenance, to say nothing of pleasure, if it is cooked and served properly. Improperly cooked, it can transmit E. coli bacteria which cause serious illness and death, particularly among young children. Public health must regulate commercial cooking practices so E. coli and other dangerous organisms are destroyed before they reach our stomachs. Public health also operates the surveillance programs which identify outbreaks of foodborne illness and take steps to control them once they do occur.

The car gets us to work, to school, to commerce, and to play. It is a symbol of material wealth and independence. It is also a deadly instrument—a carrier of massive energy that can cause untold injury and suffering when transferred abruptly to human beings. Public health promotes safety measures which prevent motor vehicle crashes or minimize their damaging effects. Public health also supports a strong emergency medical services and trauma system that can respond quickly and properly when crashes do occur.

Even the cigarette has its proponents — those who say it brings pleasure and has a place in our economy. But the cigarette also has its well-known downside — it is addictive and causes lung cancer, chronic lung disease, heart disease, stroke, and other health problems which account for a huge segment of the health and illness care consumed in our society. One of the jobs of public health is to document and publicize the ill effects of tobacco and to press for measures which prevent tobacco-related illness.

A population-based approach to health

The point of these four examples is that public health problems are related to individual and family health problems, but they require action on a different scale and in different settings than the medical diagnosis and treatment which we usually think of as "health care." Public health services are less visible and more difficult to understand than medical services. They generally operate at a community-wide level rather than an individual level. The most common tools of public health are education, sanitation, and regulation.

Public health is not simply medical care funded or provided through public means. Public health uses a different approach to health problems—a highly collaborative and chiefly preventive approach which most often affects us as members of the general public rather than as individual citizens or patients.

Even when public health plays a role in personal, individual health services—immunizations, for example—it is less concerned with giving actual shots and more

The changing focus of public health

The classic epidemiologic model for public health—developed to explain communicable disease—identifies the host of a problem (generally a human), the agent (the most basic underlying cause, such as the E. coli bacterium), and the environment. A part of the environment may be one or more vectors—organisms which carry the agent from one host to another (rats or lice, for example).

As public health and medicine, in tandem, made successful inroads into communicable diseases such as tuberculosis and influenza, public health turned more of its attention to noncommunicable diseases and injury, which are now the major killers in our population, as well as to issues of maternal and infant health. In these areas, the classic model is sometimes informative, but the distinctions between hosts, agents, vectors, and environments are often less clear. What, for example, is the real agent of teenage pregnancy? Is it the sperm, the father, the mother, the "permissiveness" of the society, the failure to educate, the unavailability of birth control? Debates about such subjects are common in the public health field.

concerned with identifying groups of people who are not fully immunized and setting in motion the policies which will result in more complete immunization of the population. Public health does provide clinical services to populations at risk for certain communicable diseases. This not only enhances the health of the individuals directly served, but protects the health of the entire population by reducing the potential for spread of infection throughout the community.

It is partly this focus on groups of people—the population-based approach—that gives public health its power to accomplish things which individualized medical care can not.

Another reason for the power of public health is its emphasis on primary prevention of disease, injury, disability, and premature death. Prevention includes: primary prevention, which reduces susceptibility or exposure to health threats through health promotion and protection measures; secondary prevention, which most often detects and treats disease in early stages; and tertiary prevention, which alleviates some of the effects of disease, injury and disability. The public health approach is to emphasize primary prevention, which has the greatest potential to address problems at their very core.

A third reason for the power of public health is its diversity. It is a complex partnership of public and private entities, requiring a great deal of coordination and communication, but offering tremendous resilience and responsiveness to unique local needs.

The Public Health Improvement Plan was developed with the involvement of all these partners, including hospitals, community clinics, other medical providers, business, labor, local and state elected officials, consumers, volunteer community organizations, as well as state and local public health officials. This first plan concentrates primarily on what must be done by official government public health jurisdictions to improve public health in Washington.

The 1994 plan includes recommendations for public health capacity — the basic infrastructure —needed to prevent disease, injury, disability, and premature death. It introduces principles for guiding the structure and financing of the public health system. It describes some key public health problems facing Washington residents today, including initial proposed standards and actions to address those problems.

The following gives a brief overview of how the official public health system now looks and operates in Washington State.

The State Department of Health works closely with the State Board of Health to set state public health policies. The State Board of Health is a citizen board appointed by the Governor. The Department of Health is a state agency, comprised of six divisions (Epidemiology and Health Statistics, Environmental Health, Community and Family Health, the Public Health Laboratory, Health Systems Quality Assurance, and Management Services). These divisions provide technical and support services to local health jurisdictions.

The PHIP Steering Committee process

In July 1993 Department of Health Secretary Bruce Miyahara appointed a 26-member Steering Committee to oversee development of the Public Health Improvement Plan. This committee has broad-based representation from business, labor, the Legislature, tribal government, public health professionals, consumers, local and state government agencies, and health care providers. The steering committee began meeting regularly beginning in September 1993.

Three technical advisory committees were established to develop and propose specific portions of the plan. Memberships of these committees reflected the broad perspectives of the steering committee.

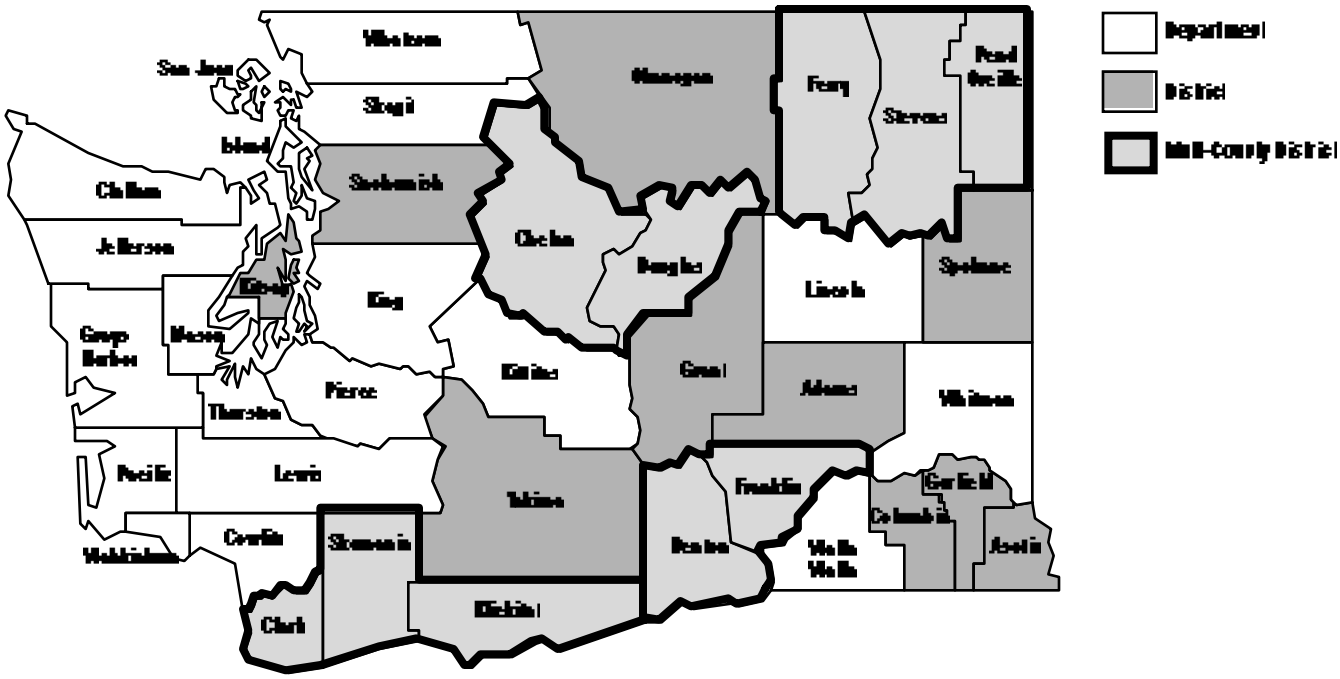
The Capacity Standards Technical Advisory Committee met at least monthly between September 1993 and July 1994 to define the components of the basic infrastructure of the public health system. They developed standards for community assessment, policy development, administration, prevention, and access and quality. They estimated resources needed to meet these standards. These estimates provide the foundation of the proposed budget for implementing the plan.

The Activities Technical Advisory Committee had five subcommittees, which met between September 1993 and May 1994 to develop intervention strategies for current key public health problems. This committee developed outcome standards, which are long-range, measurable goals for healthy communities. They also did ground breaking work in developing threshold standards that relate to emerging health issues.

The Finance and Governance Technical Advisory Committee met monthly from October 1993 to August 1994 to develop principles for public health financing and governance structures. They developed recommendations regarding appropriate state and local responsibilities in these areas.

Over 75 people donated their time to participate on these committees. (See Appendix F for a list of members.) Over 100 additional people throughout the state and the nation reviewed drafts of standards and intervention strategies.

Washington's local health jurisdictions



There are 33 local health jurisdictions in Washington. Organized on a county or multi-county basis according to provisions in the Revised Code of Washington (RCW), the local health jurisdictions are the "action arms" of the public health system with responsibility for program design and delivery.

There are 19 local health departments serving about 60 percent of the state's population. Of those, 17 are single-county departments (under RCW 70.05) and two (Seattle-King County and Tacoma-Pierce County, under RCW 70.08) are combined city/county departments. In the single-county departments, the county commissioners are the board of health, and the department is administratively a part of county government. The city-county departments have different interlocal agreements outlining the governance composition.

There are 14 local health districts (under RCW 70.46) serving about 40 percent of the state's population. Four of these districts combine more than one county (Northeast Tri-County, Chelan/Douglas, Benton/Franklin, and Southwest Washington). Health districts are separate political subdivisions. Their boards of health are generally larger than those of departments and include county and city representation.

The largest local health jurisdiction — the Seattle-King County Department of Public Health —serves over one and a half million people, over 30 percent of the state's population. The smallest — the Garfield County Health Department — serves just over 2000 people. The ten largest jurisdictions serve 80 percent of the state's population. The ten smallest serve two percent.

Public health risk: A moving target

Public health threats are seldom static. They come and go, they grow and shrink in severity, they affect different communities and population groups in different ways. Sometimes these fluctuations are biological or environmental in nature and might occur regardless of what we do. Most often, however, they are directly or indirectly related to what we do.

Some of the things we do, as individuals, increase our exposure to health threats. The general term for this in the public health field is "behavioral risk factor." Smoking cigarettes is a behavioral risk factor. So are driving without seat belts, snorting cocaine, and eating a fat juicy rare hamburger with all the trimmings (in the latter case, if the E coli doesn't get you, the fat and cholesterol may).

Some risks are influenced not just by personal behavior, but by broader social forces, actions, or policies. For example, a strictly enforced speed limit might reduce the risk of highway fatalities. A rigorous screening program to detect a disease in early stages might reduce the risk of death from that disease. Stringent septic system regulations might reduce the incidence of waterborne disease.

In each of these cases, the likelihood of a policy being implemented and adhered to will depend on many factors, including how much it costs, who has to pay, the availability of people with the right training, the impact on individual citizens and families, the impact on various agencies and organizations, action by interest groups who support or oppose the policy, and the ability to determine whether the policy really has any effect.

The functions of public health

Because public health threats vary, it is often difficult to determine where and when they are occurring. The process of doing this is called assessment. It is a combination of science and community involvement. The science—including epidemiology and other disciplines—depends heavily on data and statistical analysis. The community involvement relies on the participation of health professionals, community members and organizations, and others with knowledge, opinions, and observations.

Health assessment includes collection, analysis, and dissemination of information on health status, personal health problems, population groups at greatest risk, availability and quality of services, resource availability, and concerns of people.

Assessment phases into policy development, a complex process of considering alternatives for action and deciding which of those to pursue. Public health policy development can involve many individuals and organizations, including state and local boards of health, elected officials, community groups, public health professionals, health care providers, and private citizens.

A vital step in policy development is the process of determining priorities—making decisions about the importance of public health problems relative to each other and to other problems competing for scarce resources.

After policies are formulated, the next step is assurance—seeing that those policies are carried out. Sometimes it is the responsibility of public health agencies to carry out a policy themselves; in other cases public health agencies monitor the situation to ensure that some other entity carries out the policy.

Risky business

Through national and state Behavioral Risk Factor Surveys, public health agencies gather and disseminate information, based on a sample of the population, regarding behaviors, practices, and conditions that either protect against health risks or make those risks higher:

Reducing health risks:

Using seat belts

Getting immunizations

Getting blood pressure checked

Getting cholesterol checked

Getting mammograms

Getting Pap tests

Exercising regularly

Increasing health risks:

Being overweight

Smoking

Drinking and driving

Binge and chronic drinking

One of the most fruitful opportunities for health promotion is collaboration between public health and medical professionals regarding effective ways to tell individual patients about risks and how to protect against them.

These three functions—assessment, policy development, and assurance—are the core functions of public health outlined by the Institute of Medicine in a comprehensive 1988 national planning document entitled The Future of Public Health. Washington's Public Health Improvement Plan builds on this framework, refines it, and makes it particular to our state, delineating the major responsibilities of state and local public health agencies.

Washington's framework retains the concepts of assessment and policy development, as presented in The Future of Public Health, essentially intact. It adds a significant piece on prevention. The central purpose of public health is prevention of disease, injury, disability, and premature death—usually through activities which protect entire communities or populations from such threats as epidemics and environmental contaminants.

The Washington plan also broadens the assurance function with a section entitled "Access and Quality." Whether services are provided directly by the state, by local public health agencies, or by other providers in a community, a primary role of both state and local governmental public health agencies is to ensure quality of services. Quality assurance programs include activities such as hospital licensing, supervision of drinking water systems, and licensing and regulation of health professions. Working with the Washington Health Services Commission and health care providers, public health agencies will assure that people have access to services they need.

Quality assurance efforts require establishment of partnerships among many affected parties, sharing of data, and tracking of measurements, programs, and changes over time. They require ongoing efforts to get community and client perspectives on quality of care or services received.

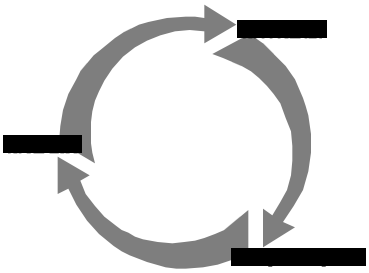
The final ingredient of the Washington plan is administration, which supports public health functions through a number of essential activities regarding personnel, budgeting, accounting, contracts, facilities, and information technology. To carry out their mission of preventing health problems, public health agencies must have a clear administrative organization which supports each of these functions through effective, efficient management.

Outcome standards: The measure of success

The PHIP identifies the capacity necessary to know what health problems exist, to develop effective interventions, and to reach defined outcomes.

The plan contains background material, standards, and interventions regarding thirty-nine key public health problems in five general areas: infectious disease; non-infectious disease; violence and injury; family and individual health; and environmental health.

The plan contains outcome standards for each of these problems (see Appendix A). These outcome standards are long-term Washington State-specific objectives, generally for the year 2000. They define optimal, measurable future levels of health status, maximum acceptable levels of disease, injury, or dysfunction, and in some cases the degree to which a particular service or program is operational. To achieve the desired health outcomes, it is essential that partners in health work collaboratively. No one type of provider can achieve the outcome standards alone.



Public health core functions: The Institute of Medicine's format

Assessment: Figuring out what the important health problems are.

Policy development: Deciding what to do.

Assurance: Doing it well or making sure someone else does it well.

These functions are linked in an ongoing process; part of assessment is determining whether prior policy development and assurance activities had the desired effects.

Opportunities for improvement

The Washington State Public Health Improvement Plan is based on specific objectives and requirements of the Health Services Act of 1993, which prescribes comprehensive health system reform for Washington State based on three main goals:

- Control health system costs.
- Ensure universal access to needed health services for all state residents.
- Improve the health of the state's population.

The act states that population-based services provided by state and local public health jurisdictions are cost-effective. They are a critical part of strategies to control costs in the long term and use resources most effectively and efficiently. The act also states that the core public health functions of health assessment, policy development, and assurance of service delivery are essential elements in achieving the objectives of health system reform in Washington State.

The idea that public health can be improved is not an indictment of the present system. It is based on a recognition that the current system lacks the full capacity to fulfill its responsibilities consistent with the needs of a reformed health system, and on the assumption that even a good system can be improved.

Our current overall health system concentrates on clinical curative and therapeutic services rather than prevention. About 12 percent of the current public health spending in Washington State pays for clinical services.

Some of the clinical capacity currently in the public health system will move from the public health system to the health care system as universal insurance coverage phases in. Some clinical service capacity, however, should be retained in the public health system to protect against communicable disease and to assure access.

Another factor influencing the need for the Public Health Improvement Plan is categorical funding of public health through programs that focus on only one disease or population subgroup. These narrow programs restrict the ability of public health agencies to respond to changing needs and lead to insufficient core function capacity, inefficient efforts, and lack of coordination of efforts among partners.

Health system reform offers the opportunity for public health to focus on prevention, and to do so in ways that reflect local and state priorities. The keys to this are improved core function capacity, stable non-categorical funding, and an emphasis on addressing local problems.

The essentials of public health practice:

- Public health focuses on primary prevention—prevention that occurs prior to the onset of a health problem.
- Public health protects communities through monitoring and surveillance for infectious and toxic agents.
- Public health responds to unanticipated natural and human-generated disasters.
- Public health notifies and educates individuals and families about risks and protective measures they can take.
- Public health provides clinical services to hard-to-reach populations.
- Public health maintains diagnostic laboratory services to support diverse monitoring and prevention programs.
- Public health collects information on health status and outcomes of treatment and other interventions.

Policy Development

Core Fun

Prevention/ Promotion

Assurance

Assessment

Chapter 2

The benefits of public health: A vision for Washington State

The National Academy of Sciences' Institute of Medicine concluded in a 1982 report that only 10% of premature deaths in the U.S. could be avoided with better access to health care, while 70% could be prevented by reducing environmental threats and risky individual behaviors. The remaining 20% are due to inherited conditions.

Think about it -- even if we had the very best medical care system possible, a system in which we already spend $18 billion annually in Washington State, we would prevent only one of every ten premature deaths that are possible to prevent. But if our public health system worked as well as possible, a system currently spending only $330 million annually, as many as seven out of every ten premature deaths might be prevented.

The mission of the public health system is to protect and improve the health of Washington residents by:

- Helping individuals, families, and communities to make informed health choices;
- Assuring access to quality prevention and illness care;
- Protecting people from threats to health; and
- Advocating sound, cost-effective health policies.

The Public Health Improvement Plan links this mission with the overall goals of Washington State health system reform.

The Washington Health Services Act of 1993 seeks to remove access barriers and control costs primarily through a mandated timetable for universal health insurance coverage and a regulated marketplace of managed health care plans in which patients, providers, and insurers all share some financial risk. The act created the Washington Health Services Commission to ensure that these provisions are implemented successfully. At the same time, the act recognizes that a strong public health system is essential to achieving the goals of health reform and protecting the economic viability of the state. The population-based services provided by state and local health departments are deemed cost-effective and critical for the long-term containment of health care costs. Taken together, these provisions of the law make Washington's health system reform plan the most comprehensive in the nation.

Health system reform in Washington

In addition to requiring development of the Public Health Improvement Plan, the Health Services Act of 1993 reforms Washington's health care and health insurance systems by:

- Requiring all state residents, businesses, employees, and government to participate equitably in paying for health services in a way that encourages appropriate use of services.
- Expanding publicly funded health insurance programs to cover people with low incomes and those who are unemployed.
- Creating the Washington Health Services Commission to oversee reform and the health system, including developing the "uniform benefits package" — the minimum benefits all state residents will have by 1999.
- Promoting fair competition among certified health plans — the only insurance plans that will be allowed to operate in the state. They must offer at least the uniform benefits package, for not more than a maximum price set by the commission, to any state resident, regardless of employment, income, or health status.
- Promoting efficiency and cost control by requiring that health plan premiums be community rated, limiting the growth of premiums, encouraging certified health plans to effectively manage care and money, and requiring modest co-payments when people seek certain health care services.

The act also defines a "uniform set of health services" composed of the uniform benefits package, core public health functions as defined in the Public Health Improvement Plan, and health system support.

As the health care system becomes more equitable and efficient, an important question will remain: who will be responsible for overseeing community health and helping citizens and communities respond to threats to health such as waterborne contaminants, violence, adolescent tobacco use, or infectious diseases?

The Health Services Act recognizes that neither universal insurance coverage nor managed care can adequately answer this question. Under reform, certified health plans and health care providers will be encouraged to emphasize prevention and health promotion, but the services they provide (primarily diagnosis, treatment, and prevention aimed at individuals) will remain only one of many factors that determine individual, family, and community health. Poor nutrition, inadequate housing, poverty, unstable family environments, unhealthy life-styles, community violence, and environmental pollutants -- all of which contribute to poor health -- will not be mitigated by universal insurance coverage and managed competition. Rather, the act recognizes that the third goal of reform, good health, requires a well-functioning public health system.

Improving health: Public health in the lead

The connection between public health programs and better health is well established. Since 1900, the average life expectancy of Americans has gone up from 45 to 75 years. Public health improvements in sanitation, the control of diseases through immunizations, and other activities are responsible for 25 of the 30 additional years that Americans can now expect to live. In addition, population-based public health programs of the 1970s contributed greatly to recent improvements in reduced tobacco use, blood pressure control, diet, use of seat belts, and injury control, which in turn have contributed to declines of more than 50% in deaths due to stroke, 40% in deaths due to heart disease, and 25% in overall death rates for children.[1]

Recognizing the cost-effectiveness of prevention, the legislature in 1993 appropriated $10 million to address critical local public health problems. Termed "Urgent Needs" funds, this $10 million appropriation represented a type of down payment on an enhanced investment in public health -- a commitment to build capacity in local communities. The Urgent Needs funds were provided to public health using a markedly different approach: instead of being tied to specific categories of services or public health problems, these funds were distributed to local health departments and districts on a per capita basis to use in whatever manner local health officials believed best addressed the unmet needs of their community. Today, 180 special health promotion and protection projects are underway in communities across the state as a result.

Local health officials have responded enthusiastically to the noncategorical funding. During the first year of the 1993-1995 biennium, over $4.6 million of the funds were budgeted for use, with nearly half going towards environmental health protection and infectious disease prevention. Thirteen local health jurisdictions have started community health assessment activities with Urgent Needs funds. The 1995-1997 state budget request calls for a continuation of $10 million in Urgent Needs funds. See Appendix D for more information on the projects made possible by these funds.

E coli: Inadequate prevention requires strong public health response

In 1993, the State Department of Health received reports of unusually high numbers of children hospitalized with hemolytic uremic syndrome (HUS) and an increase in emergency visits for bloody diarrhea. Health officials suspected an outbreak and immediately began an investigation to find the source of infection. Within a week of notification, public health laboratories had identified E. coli 0157.H7 as the cause; state and federal epidemiologists had traced the source to contaminated hamburgers from a chain of fast-food restaurants; and public health officials had pulled 250,000 contaminated hamburgers from the chain to prevent further infection. Ultimately, 602 people in Washington State were ill: 144 people were hospitalized and three children died.

The response of the official public health system was swift and strong. Effective data gathering, diagnostic testing, and prompt action kept to a minimum the number of people who became ill and died.

However, this response was necessary because preventive actions to keep restaurant food safe failed. Better and more frequent training of cooks and food handlers, and better communication between public health agencies and restaurants, as well as more effective food inspections by the federal government, could have prevented this outbreak. The absence of effective prevention in this case resulted in unnecessary suffering of the victims and their families. In addition, the economic costs were large: millions of dollars were spent on emergency and treatment work performed by public health and medical care professionals; restaurants were forced to close, and expensive lawsuits resulted.

The Urgent Needs funds are allowing public health to begin to address some of the state's most pressing public health problems. The recommendations presented in this report, if followed, will give communities even stronger tools to prevent, reduce, or avoid the numerous health problems discussed in Chapter 1. These tools are called the core functions of public health and are defined by the capacity standards presented in Chapter 3. If public health agencies successfully perform the core functions, the health of citizens and communities will improve. Communities with well-functioning public health agencies will more likely attain the levels of good health defined by the Outcome Standards presented in this report (see Appendix A).

Controlling costs: Public health is a good buy

We have a choice of how to deal with health problems. We can sit back and wait until people become ill, injured, or disabled, and then treat them in our very expensive health care system. Or we can find the causes of these problems and work to prevent them from ever happening. Which choice we make will affect how much money we must spend, and what we spend it on. Many public health prevention programs cost less than the treatment services needed if prevention is absent:

- The cost of water fluoridation for an individual's entire lifetime (about $38) is about the same as the cost of treating just one tooth with a cavity.
- Each dollar spent on helping a pregnant woman stop smoking saves about $6 in intensive hospital costs and long term care for low birth weight babies.
- Each year, public health outreach and vaccines have prevented nearly 7 million cases of measles, mumps, and rubella, saving $14 in medical care costs for every dollar spent on immunizing children.
- Providing consumers with information about how to stay healthy and manage their own care can lower rates of service use by 7-17%.

The choice between prevention and treatment of health problems -- and the costs and benefits involved -- is much like other choices we can make in our lives. For example, we can take our car in for regular tune-ups and oil changes, the costs of which may be in tens or hundreds of dollars. Or we can "save" these costs and run the car on old spark plugs and dirty oil, risking engine damage that might cost thousands of dollars to repair.

Assuring access and promoting health: The public health-medical care partnership

The reformed health system envisioned for Washington State will both attend to individuals' health care needs and help create the conditions in which families and communities can remain healthy and productive. All state residents will be insured for a comprehensive set of benefits and will receive most of their personal and family care from practitioners through certified health plans. Local and state public health agencies will help keep the public healthy by monitoring health status and threats to health, helping communities set priorities and strategies for action, and assuring these strategies are carried out successfully by working with civic groups, nonprofit organizations, other government agencies, businesses, and other parts of the community.

A partnership in action

There are many potential partners for public health, both in the public and private sector, as it goes about increasing capacity to improve the health of communities. A good example comes from eastern King County, where a partnership has formed to evaluate the health needs of the King County Public Hospital District No. 2. The Community Advisory Health Status Task Force includes the Evergreen Hospital Medical Center, the Overlake Hospital Medical Center, the Seattle-King County Department of Public Health, the Washington State Hospital Association and the Northshore School District.

The mission of the Task Force involves evaluation of health status of the community, identifying areas where interventions are needed, and creating community and inter-agency partnerships to facilitate the development of new interventions. The Evergreen Hospital's Community Health Status Department is in a coordinating role as the Task Force reviews health status information. Upon that review, they will be setting priorities for broad-based, community-partnered interventions. The assessment expertise of the Seattle-King County Department of Public Health combined with the health status information available from Task Force members, forms the basis for a comprehensive assessment of the health of the citizens in eastern King County.

To succeed at both preventing and treating health problems, the public health and medical care systems must work closely together. In many cases, health care providers can give early warning of possible community-wide problems by alerting public health officials to unexplained trends in illness or symptoms that may be due, for example, to environmental hazards. Public health can then take action itself, or mobilize other organizations in the community, to reduce the hazard early on. Likewise, public health agencies can alert health care providers if they discover or suspect that a population is being exposed to a health threat. The health care providers can then help to find, evaluate, and, if necessary, treat people at risk.

This partnership begins in communities. The local public health jurisdiction can assist certified health plans by: (1) identifying trends in diseases and injuries; (2) evaluating the effects of health plan prevention programs on the community; and (3) providing prevention-related technical assistance or direct services to health plan enrollees. Certified health plans will assist the local public health agency by collaborating in, and perhaps funding, community-wide prevention efforts, and providing data that will allow the public health agency to monitor the effects of these efforts on health status.

The partnership extends to the state level, as the Health Services Act promotes the shared responsibility among the Washington Health Services Commission, the Health Care Authority, the Department of Health, the State Board of Health, and other health-related state agencies for improving the health of state residents. The commission is responsible for focusing the attention of certified health plans on improving health status, not just on providing health care services. The Health Care Authority will expand access to needed health care services through publicly sponsored health plans and programs. The department and board, in carrying out their duties to collect and analyze health data and set statewide priorities, will inform the commission of health problems that certified health plans should address.

The process of prevention: How core function activities promote better health

We understand fairly well how doctors and hospitals successfully treat an illness or injury. Most of us have been to the doctor, and understand and accept that if we take the drug prescribed, we will feel better, or if we do the exercise described by the physical therapist, our sore shoulder will hurt less often. What we don't often think about is the years of effort that preceded our visit to the doctor and the successful treatment: the research studies that identified the virus or bacterium that causes the disease, the tests of different drugs to see which is most effective, the information provided to practitioners so they can recognize the symptoms for which the drug will be effective.

We also understand the benefits of successful public health prevention (even if we don't realize that public health is responsible): water from our faucets that doesn't make us sick, babies born healthy, fewer car accident deaths, restaurant food free of E. coli. But much of the work that leads to this successful prevention is invisible to us.

TB: Public and private health coordination needed

A 60-year-old foreign born woman became ill with chronic shortness of breath and chest pain, and after a brief hospitalization, was diagnosed with congestive heart failure. She did not get any relief from the recommended therapies and went to the emergency room several times. One month after diagnosis, she was taken by ambulance to a Spokane hospital, where it was determined that she had active, pulmonary tuberculosis (TB). She was discharged without medication for her TB and the local health department was not informed.

Three days later, a family member brought a prescription to the Okanogan Health District after having been referred by a local pharmacist. The public health nurse could identify no prior contact, and a telephone call to the prescribing physician confirmed the diagnosis. The physician, who was not familiar with the role of public health or the current recommendations for treatment of tuberculosis, had assumed someone else would report the case. The patient had received no instruction in her native language about treatment and how to prevent spread to others.

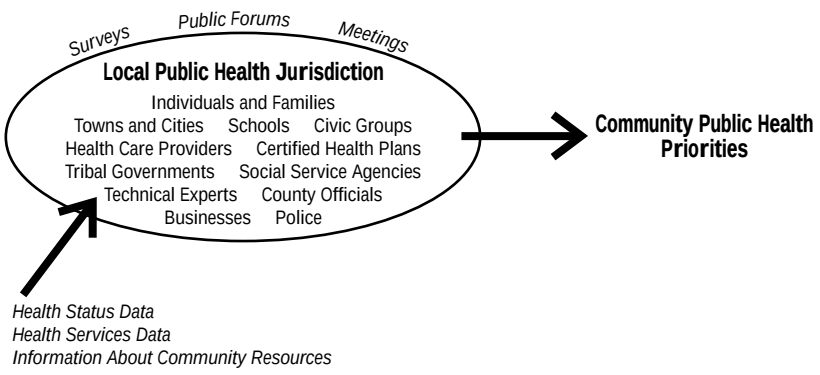
Public health nurses made a home visit the next morning and began contact tracing. This resulted in 57 household contacts being identified, including four pregnant woman and 19 children. Thirty-nine individuals were started on preventive treatment. Of the 35 health workers exposed to the patient, one became positive for TB and was placed on preventive treatment. The local medical community, through education by public health nurses, developed a heightened awareness about tuberculosis and coordination improved for testing and treatment with the local health district.

As the public health system is strengthened through the PHIP process, a lot will be happening behind the scenes, invisible work leading directly to better health -- in the same way that medical research and testing precede our doctor visits and result in successful medical treatment. This is the work of the core functions of public health -- community health assessment, health policy development, and assurance that policies are being carried out.

Community health assessment

In every community of the state, the local public health jurisdiction will convene a "community assessment process" on a regular basis, perhaps every two years. This process will bring together all parts of the community to discuss what today's health problems are and what tomorrow's problems may be. The public health agency will bring to the process data it receives from a statewide data collection system, as well as data collected by the agency itself and others in the community (for example, police departments, businesses, health plans, civic groups, schools). These data will include rates of disease and injury, use of health care services, air and water quality, immunization rates, the results of health status surveys, and other kinds of health related information. Information about the community's resources will also be available, such as the number of health professionals, health promotion and prevention programs, worker safety classes, health education curricula, and business initiatives. For some health threats, the State Department of Health may provide technical assistance to the community. The result of the community assessment process will be a list of priority health problems and threats on which the community wants to focus its efforts and resources.

Community health assessment process



Too Little Too Late

Samish Bay, a shellfish growing area in Skagit county, was partially closed to commercial growing after a number of people became ill from eating contaminated oysters. The problem was caused by coliform contamination in the surrounding waters. Months earlier the suspected source of the contamination, failing on-site sewage systems, had been identified, but there was no money available to carry out the needed repairs. After the outbreak of gastroenteritis and closure of commercial harvesting, the community mobilized to resolve the problem. The Small Towns Economic Program (STEP), the New York-based Rennselaerville Institute, and Washington State Departments of Ecology and Health are collaborating to restore and improve water quality in the surrounding watershed. Although the resulting collaboration is working successfully and additional illness has been thwarted, the outbreak of disease and the economic emergency in the community could have been prevented. This is a classic example of too little money and attention, paid too late.

Health policy development

Like community assessment, the "policy development process" -- deciding what to do about the priority public health problems -- will involve many members of the community. The local public health jurisdiction will work with elected officials, community groups, community networks, and private sector leaders to determine what strategies will best reduce the problems or threats, and identify who is best able to carry out those strategies. The local public health jurisdiction will also define strategies for those issues that are its direct responsibility, such as environmental health. Public health officials will bring to this community decision-making process an understanding of the underlying causes of the priority health problems and of the potential effects of specific interventions, based on local, state, and national evaluations.

Policy development process

Assurance that policies are carried out

The prevention strategies that are most visible to us -- the successful campaign to reduce tobacco use, the law changes and community education programs to reduce child head injuries from bicycle crashes -- are based on the less visible community assessment and policy development processes.

What does the public health system do to assure that these prevention efforts are successful? For some health problems, state and local public health agencies have the power and the duty to take direct action.

Many health threats facing society today -- such as violence, homelessness, and air pollution -- are too complex for any one organization or agency to address successfully; the community as a whole must be involved. In such cases, the public health jurisdiction has a critical role to play in the community by:

- Defining the threat or problem
- Helping community leaders and citizens understand its importance.
- Building community consensus about the best strategies to use.
- Supporting the organizations, agencies, businesses, or individuals best able to carry out the strategies.
- Monitoring the threat or problem, evaluating the effects of interventions, and bringing this information back to the community and decision makers.

This chapter has set forth an overall vision for the public health system of Washington State. The next chapter describes in detail the responsibilities of public health and the resources needed to meet them.

1 *Health Care Reform and Public Health: A Paper on Population-based Core functions,* Core Functions Project, U.S. Public Health Service, 1993, p.2.

Resources

HealthSt

Standards

Outcomes

Capacity

Chapter 3

Defining and improving core function capacity

Public health agencies are a lot like fire departments. They talk, teach, and practice prevention at the same time that they maintain readiness to respond to crises and emergencies. They are most appreciated when they respond to emergencies. They are most successful—and least noticed—when their prevention measures work the best.

In another respect, the two are very different. Everyone knows what a fire department does; hardly anyone knows what a public health department does. The very existence of health departments is testament to the fact that, when legislators, county commissioners, and other policy makers understand what those departments do, they support them. It is a rare person who, once familiar with the day-to-day activities of a public health department, would want to live in a community without a good one.

Which raises some big questions: What constitutes a well-functioning local public health jurisdiction and a well-functioning State Department of Health? What must they be able to do? How much capacity is required? How do we measure that capacity, and how do we determine whether it is being used well? The Public Health Improvement Plan begins to answer these questions.

A well-functioning public health department must be able to carry out the core public health functions described in Chapters 1 and 2. This chapter defines the components of this capacity in a series of capacity standards. It identifies the new resources that will be needed by public health jurisdictions to meet their fundamental responsibilities. It describes specific interventions that public health agencies might employ and the outcome standards that will measure the effect of these interventions on peoples' health. Finally, this chapter examines the current and future role of clinical personal health services in the public health system.

Impediments to carrying out the core function capacity

Overall, our current health system concentrates on clinical curative and therapeutic services rather than prevention. To some extent, the public health portion of the system has been influenced by that emphasis; when low income and other vulnerable populations have had difficulty getting clinical care, public health agencies have met some of the need. The emphasis on clinical services, both in the overall system and in public health, has sometimes impeded the capacity of public health jurisdictions to focus on the core function capacities and do what they do best; it has forced public health away from its roots in preventing health problems from occurring.

The heart of public health: Primary prevention

The most common and most effective preventive measures carried out by public health agencies are in the area of primary prevention, which has two main components: health **promotion** and health **protection**.

Health promotion includes health education and the fostering of healthy living conditions and life-styles. Health promotion activities may be directed toward individuals, families, groups, or entire communities. They help people identify health needs, obtain useful information and resources, and mobilize to achieve change.

Health protection refers to those population-based services and programs that control and reduce the exposure of the population to environmental or personal hazards, conditions, or factors that may cause disease, disability, injury, or premature death. Health protection includes immunization, infectious disease surveillance and outbreak investigations, water purification, sewage treatment, control of toxic wastes, inspection of restaurant food service, and numerous other activities which protect people against injuries and occupational or environmental hazards.

For much of the past forty years, public health has been defined by a series of categorical programs and problems such as AIDS, tuberculosis, sewage treatment, immunizations, foodborne illnesses, and primary care for the under served. When a problem was identified and brought into public view, legislators enacted laws and appropriated funds to address that specific problem. Public health agencies responded by organizing themselves to carry out disease-specific or problem-specific programs.

Some categorical programs have been quite important and successful, such as the state's Omnibus AIDS Act and statewide sexually transmitted disease (STD) prevention efforts. However, the reliance on such targeted programs to finance public health has left these agencies with insufficient resources to continuously monitor health-related factors affecting the entire community and maintain the capability to deal with health threats not included in categorical programs in preventing health problems from occurring.

Partly because of the emphasis on clinical services and categorical programs, too few resources are now available to local and state public health agencies to meet their core responsibilities. While sophisticated medical techniques can help those who are ill or injured, the basic public health infrastructure that can prevent disease, injury, disability, and premature death is faced with serious problems. For example:

- Low immunization rates leave large segments of the community unprotected against infectious diseases.
- Protection of water supplies lags far behind the pressures of population growth, leaving many communities without assured potable water.
- Lack of reporting relationships between private and public sectors can prevent public health agencies from knowing about an epidemic before it reaches a large scale.
- Inadequate resources for health promotion and environmental protection activities have resulted in a general lack of awareness of the importance of these public health activities.

The PHIP is a blueprint for capitalizing on the strengths of the public health system while at the same time improving system infrastructure in the ways necessary to truly protect and promote health.

Adequate and stable public health infrastructure

The capability to respond to infectious disease outbreaks or anticipate and prevent future problems cannot be created anew each time an epidemic breaks out, a water supply is contaminated, or a toxic chemical is spilled. Communities can identify public health problems and take timely, appropriate action only if well-functioning data and communication systems are already in place, and if epidemiologic and other expertise can be brought to bear quickly. In addition, activities designed to prevent disease and injury and promote and protect health require continuous, consistent effort. Usually, these activities must be consistently pursued over a period of years to achieve population-wide results. The public health system requires a solid, ongoing capacity to monitor, anticipate, and respond to health problems, regardless of which disease or public health threat has the public's attention at the moment.

Consider the four examples we started with in Chapter 1: Smoking, car crashes, foodborne illness, and water quality. These problems are not uniform throughout

Corralling disease through herd immunity

Immunizations against vaccine-preventable diseases are clearly beneficial for an individual. They also offer community protection through "herd immunity," a public health observation that the presence of disease in a population is minimized if enough individuals are vaccinated, because there are fewer opportunities for the disease to spread. A recent study by the Journal of the American Medical Association reported that of parents working in large corporations, only 45% of their two-year-olds had been adequately immunized. Some local health departments have developed creative strategies to reach busy parents with young children. Last summer one small Washington community joined together to reach out to parents. An "immunization event" was sponsored by a Rotary Club and publicized over radio and in the newspaper. A clown was on hand to entertain the children while the Cowlitz County Health Department nurses administered immunizations. This effort resulted in protecting an additional 200 children against infectious diseases. Not bad for a day's work.

Washington, either geographically or from year to year. To successfully address them—and many other public health issues—we need the best possible information on the nature and extent of the problems. We have a certain capacity, right now, to assess these problems, but that capacity should be significantly improved.

Capacity standards: Defining the infrastructure

The Public Health Improvement Plan identifies official state and local public health agencies as responsible for assuring that capacity standards are efficiently and continuously met within their health jurisdictions. These capacity standards are presented in the PHIP in functional groupings: community health assessment; development of public health policy; assuring community access to quality health care within the community; and providing the leadership, financial, and organizational administration required to integrate these functions into a coordinated, adaptive and effective public health system.

Many of the activities discussed in the capacity standards are not new to public health. They have, however, primarily been addressed by problem-specific, single-focus programs. As a result, state and local public health agencies might have an excess of capacity in one important, separately funded public health area such as childhood immunizable diseases, yet remain in dire need of capacity in other important but less well funded areas such as child abuse or youth violence prevention. As a result of legislatively mandated single focus "categorical" funding, public health agencies often lack the flexibility to shift resources from one program area to another or to integrate similar functions among many programs in an effort to increase efficiency within a health jurisdiction.

The PHIP vision is one in which problem-specific, separately funded public health programs become linked together through a series of 88 system-wide capacity standards. These standards focus less on a list of specific health problems or programs and more on the basic responsibility of state and local public health jurisdictions for assuring the conditions in which communities can be healthy.

The PHIP capacity standards promote locally inspired, state supported information systems as well as financing procedures that provide local public health with the flexibility to adequately address the identified health needs of their communities. Capacity standards promote accountability for development and implementation of public health policy through an ongoing process of evaluation and public and legislative review. Capacity standards promote innovation and partnership at the local level through the use of financial incentives while maintaining vigilance over potential statewide public health risks. Through the implementation of the PHIP, the health problems of Washington State will continue to be addressed, only in a more efficient, comprehensive, and participatory process. The public health system will begin a shift away from its present emphasis on single issue funding and individual patient treatment toward an approach that focuses on health protection and promotion for all members of the community.

Because many participants determine and deliver public health services, the standards are intended to encourage partnerships among organizations and agencies. However, the references to local or state jurisdictions in the capacity standards are deliberately narrow, applying only to formal, authorized, government structures. The terms "local" or "local public health jurisdiction" refer to an individual public health district or department, or a regional entity created to carry out specific public health

Capacity to assess health problems: A sample of the standards

All public health jurisdictions, both state and local, must:

- Develop, operate, and assure the quality of data management systems which meet local needs in order to systematically collect, analyze, and monitor standardized baseline data (Capacity Standard #2).
- Link with local and statewide databases in both the public and private sectors (Capacity Standard # 4).

Each local public health jurisdiction must:

- Conduct a regular community health assessment, using a standardized format such as the Assessment Protocol for Excellence in Public Health (APEX/PH) (Capacity Standard #5).
- Identify barriers in a community related to transportation, language, culture, education, information, and service delivery systems design that affect access to health services, especially for low income and other special populations (Capacity Standard #6).

The state must:

- Provide consultation and technical assistance to ensure a high standard of data analysis, dissemination, and risk communication (Capacity Standard #9).
- Survey the statewide availability of clinical and environmental laboratory services and help local health jurisdictions track this information (Capacity Standard #12).
- Assess the supply and distribution of health care providers, facilities, and services (Capacity Standard #14).

functions for two or more local public health jurisdictions (but not the entire state). "State" refers to agencies of Washington State government that have public health responsibilities, primarily the Department of Health and State Board of Health. Other agencies are responsible for activities which impact the public's health.

The 88 core function capacity standards are listed on the following pages. They are the most definitive description we have to date of what well-functioning public health agencies must be able to do. They are a guide for public health jurisdictions as they examine and refine their role in protecting communities. As the Public Health Improvement Plan process continues, performance measures will be developed for these standards so they will become the basis for contractual arrangements between state and local jurisdictions. It is likely that the standards will undergo some modifications during this process. Please see chapter 5 for a detailed discussion of implementation steps for the 1994 PHIP.

The terms of partnership

The roles and responsibilities of public health jurisdictions in the capacity standards are described by four terms:

Involve means that the public health jurisdiction has primary responsibility to carry out a specific function or make a specific decision, but should obtain the input of community members and organizations.

Collaborate means that one or more organizations in the community are, with the public health jurisdiction, equally responsible to carry out a specific function or make a specific decision, and the role of the public health jurisdiction is that of an equal partner.

Mobilize means that the community as a whole has responsibility to carry out a specific function or make a specific decision, and the role of the public health jurisdiction is to provide community leadership, act as a convener or catalyst, or provide supportive resources, as appropriate.

Assure means that the specific function may, in different communities or at different times, be the responsibility of the public health jurisdiction or other entities in the community. Within available resources and consistent with community and public health problem priorities, the public health jurisdiction must provide leadership in the community, collaborate with other organizations, or — as a last resort — provide the service itself. Assure is not intended to imply an entitlement or guarantee; it does, however, imply that a process has been developed to identify problems which the community wants to address.

The PHIP standards for core function capacity

Health assessment

Health assessment means the regular collection, analysis and sharing of information about health conditions, risks and resources in a community. Assessment activities monitor, analyze and evaluate community health status, risk indicators and, when necessary, health emergencies. They identify trends in illness, injury, and death and the factors which may cause these events. They also identify environmental risk factors, community concerns, community health resources, and the use of health services. Assessment includes gathering statistical data as well as conducting epidemiologic and other investigations.

Assessment capacity standards

All public health jurisdictions, both state and local, must:

1. Have access to an integrated, centrally managed electronic network that provides access to federal, state and local information systems.

2. Develop, operate, and assure the quality of data management systems which meet local needs in order to systematically collect, analyze, and monitor standardized baseline data.

3. Conduct and publicize epidemiologic, sociologic, economic, and other investigations which assess the health of the community and access to health care. Help develop and evaluate prevention and control measures, research strategies, and policy options. Assure that investigation and communication methods are sensitive to individual, family and community needs, values, language, and cultural differences. Provide training opportunities to acquire these skills.

4. Link with local and statewide data bases, in both the public and private sectors.

Each local public health jurisdiction must:

5. Conduct a regular community health assessment, using a standardized format such as the Assessment Protocol for Excellence in Public Health (APEX/PH)[1].

6. Identify barriers in a community related to transportation, language, culture, age, disability, education, information, and service delivery systems design that affect access to health services, especially for low income and other special populations.

7. Assure access to high quality, cost-effective, timely environmental and clinical laboratory services which support outbreak investigations and meet routine diagnostic and surveillance needs.

The state must:

8. Develop community data standards as well as statewide standards for data use and dissemination. This should be a collaborative process with the Health Services Information System (HSIS), certified health plans (CHPs), and the public health system. This includes standardized approaches to health status indicators, geographic information systems, population data, and biostatistical calculations.

9. Provide consultation and technical assistance (using expertise from local jurisdictions, educational institutions, or other sources) to ensure a high standard of data analysis, dissemination, and risk communication.

10. Implement a fully integrated, secure statewide computer network that will include electronic mail, accessibility to documents and files, as well as the ability to access and amend basic data systems. This should be consistent with HSIS.

11. Evaluate and disseminate information regarding new health and information technologies in collaboration with the Washington Health Services Commission and HSIS.

12. Survey the statewide availability of clinical and environmental laboratory services and help local health jurisdictions track this information.

13. Provide a public health laboratory which is closely integrated with the needs and requirements of state and local public health jurisdictions and linked to other health agencies and laboratories via a courier system and electronic data system. The public health laboratory will:

    - Provide microbiological testing to assess infectious and foodborne disease outbreaks, to conduct disease surveillance and to recognize trends of emerging infectious diseases, including drug-resistant agents.
    - Measure toxicants to conclusively determine the extent of a community's exposure to environmental hazards.
    - Serve as the state's primary reference microbiology laboratory to test for and aid in the diagnosis of unusual pathogens, to confirm atypical laboratory test results, and to provide training and consultation.
    - Serve as a reference environmental radiation and chemistry laboratory to verify the results of other laboratories, to provide quality assurance oversight, and to provide training and consultation.
    - Provide laboratory screening of infants for treatable inherited metabolic diseases.
    - Conduct research to improve laboratory tests for more effective disease surveillance as well as to develop rapid methods for laboratory diagnosis.

14. Assess the supply and distribution of health care providers, facilities and services.

Policydevelopment

A goal of the Public Health Improvement Plan is to assure that, at both state and local levels, policies are developed, implemented, and evaluated in a comprehensive manner that incorporates qualitative and quantitative scientific information and community values.

The most effective public health jurisdictions are supported by the communities they serve. It is, after all, the people of any community who make the daily decisions which determine the health of the community. Residents who seek better health can organize themselves toward that end. Public health jurisdictions can assist in this effort.

This capacity requires the ability to listen to residents who understand the strengths and weaknesses of those who live in the community. It requires the ability to prioritize work according to the needs of those in the community and build from their strengths rather than from institutional strengths.

Public health policy is established through processes involving many individuals and organizations, including state and local boards of health, elected officials, community groups, public health professionals, health care providers, and private citizens. Public health jurisdictions must have the legal authority to make and implement policy decisions. Decision makers must evaluate information from health assessment activities and listen to the concerns expressed by community members.

Public health jurisdictions must be able to evaluate both planned and current policies. In order to do this they must have the technical ability and resources to provide authorized decision makers with periodic information and data analyses regarding specific health issues. They must also have a system to facilitate community involvement and inform community members on a regular basis. State and local public health jurisdictions must have a similar framework for policy development activities, allowing for differences that result from their respective scope of responsibilities.

Policydevelopmentcapacitystandards

All public health jurisdictions, both state and local, must:

Authority

15. Develop explicit and formal statements of the public health jurisdiction's legal authority to develop, implement, and enforce public health policy.

Policy analysis and formulation

16. Enact policies and procedures within the existing legal scope of authority. There are two kinds of authority: authority granted to state and local boards of health to enact rules, and authority to make decisions regarding those issues which do not require action by a board of health.

17. Involve the community in developing and analyzing policies of the public health jurisdiction.

18. Develop, analyze, and communicate alternative policies.

19. Provide accurate, timely, understandable information and data to policy makers (e.g., Washington Health Services Commission, and local and state elected officials), community leaders, certified health plans, and health care providers with emphasis on identifying threshold standards which have been exceeded. This includes technical support to decision makers to help them anticipate the effect of regulations, budget decisions, and policies on the community or the state as a whole.

20. Provide legal counsel to review policy decisions.

21. Promote state and local legislation and regulation aimed at reducing public health risk factors and promoting healthy behaviors. Evaluate current legislation and regulation to determine if it supports these goals.

Policy implementation

22. Translate enacted policies into operating program procedures including:

- Clarify or establish the legal basis and authority, beyond the legal provisions of the policy itself, that are required to proceed with implementation.
- Define and estimate the costs of personnel, equipment, and facilities associated with procedures that have been developed.

23. Estimate costs and effects of proposed policies and inform affected parties and the community.

Policy evaluation

24. Identify policy outcomes, develop outcome measures, evaluate them on a regular basis, and communicate the findings.

25. Evaluate program efforts:

- To assure that they address community needs and problems.
- To assess the relative efficacy, costs and benefits among specific prevention programs as well as between prevention programs, medical treatment, and rehabilitation.

Community collaboration and mobilization

26. Mobilize the community, and in particular health care providers, in a systematic and periodic process to set community priorities, develop policies and formulate strategies to address key public health problems, and for action on community issues based on results of a standardized assessment format such as APEX/PH[1].

27. Collaborate with community members and health care providers to inform the public about the current health status of the community, using formats appropriate to the needs of various individuals or organizations.

28. Provide information and data, as requested and appropriate, and in keeping with confidentiality requirements, to interested community groups for health related activities.

Administration

To carry out its mission, and form successful community partnerships, each jurisdiction must have a clear administrative structure which supports the core public health functions. Effective administration is a critical element of all efforts to improve and promote community health. It involves a number of important features, including leadership, planning and financial and organizational management. All of the capacity standards assume that an effective administrative structure is in place. This is especially true of Policy Development, which includes key standards concerning community leadership and planning. Responsibilities related to the internal workings of the public health jurisdiction require the same leadership and management skills: agency and division directors must clearly assign responsibilities, delegate authority, and develop operating policies and procedures.

Administration capacity standards

All public health jurisdictions, both state and local, must:

Agency management

29. Secure policy board authorization for operation of programs.

30. Periodically analyze and update the roles and authorities of units of government within the agency's jurisdiction, delineating all functional elements of the organization and their relationship to each other.

31. Regularly collect and analyze information describing agency and program administration, funding, activities, work loads, client characteristics, and service costs.

32. Develop a long range strategic plan and time-limited, measurable agency and program objectives.

33. Assure the collection, analysis, and use of information that is needed to evaluate the outcome of program activities on risk and protective factors and health status.

34. Maintain a management information system and electronic communication capacity that allows the analysis of administrative, demographic, epidemiologic, and service utilization data to provide information for planning, administration, and evaluation.

35. Participate in agreements with other jurisdictions, as appropriate, to manage costs.

Financial management

36. Designate a person who is responsible to oversee all financial responsibilities of the health jurisdiction.

37. Develop and implement a long term financial plan (i.e., extends beyond the operating budget cycle) that is consistent with the strategic plan identified in Standard 32.

38. Develop and implement budgets which reflect jurisdictional priorities and programs, address health problems, and assure that expenditures follow the budget and financial plan.

39. Involve professional and community groups in development, presentation, and justification of the budget.

40. Develop and manage contracts to provide public health services to or for community organizations, private nonprofit corporations, and health care organizations.

41. Assure that the policy board and staff understand their legal accountability and liability, as well as their general responsibility to the public for wise financial management.

Personnel management

42. Have a comprehensive system of personnel management that complies with appropriate federal, state, and local regulations, including documenting relationships with other units or departments of government which carry out personnel functions of the public health jurisdiction.

43. Have an established working relationship and labor agreement between the health jurisdiction policy board and each labor union representing staff, as appropriate.

44. Maintain a salary administration plan, authorized by the policy board and designed to attract and retain competent staff.

45. Develop and implement a staffing plan which includes recruitment and retention strategies and professional development opportunities, including continuing education and training in public health skills and competencies.

Prevention

The heart of public health is prevention of disease, injury, disability, and premature death. Prevention includes:

- Primary prevention, the focus of public health, which reduces susceptibility or exposure to health threats. Immunizations are an example of primary prevention.
- Secondary prevention, which most often detects and treats disease in early stages. A program to encourage the use of mammograms to detect breast cancer is an example of a secondary prevention activity.
- Tertiary prevention, which alleviates some of the effects of disease, injury and disability through such means as habilitation and rehabilitation.

Preventive services are provided both one-on-one in clinical settings and to groups of people in the community. The primary focus of public health prevention is to protect entire communities or populations from such threats as communicable diseases, epidemics and environmental contaminants.

Certain clinical personal health services are included in the standards because they benefit both the individual and the community. Immunizations, reproductive services, and communicable disease screening and treatment are examples of services which are of public health significance. The absence of these services can have wide ranging effects for the community as a whole.

Two main components of primary prevention are health promotion and health protection.

Health promotion

Health promotion includes health education and the fostering of healthy living conditions and life-styles. Health promotion activities may be directed toward individuals, families, groups, or entire communities. They help people identify health needs, obtain information and resources, and mobilize to achieve change. They foster an environment in which the beliefs, attitudes, and skills represented by individual behavior and the community norms are conducive to good individual and community health.

Health promotion includes communicating surveillance and epidemiologic data to public health officials, other health providers, industries, and the community as a whole. It includes working with communities on an ongoing basis to communicate relevant information, helping their mobilization efforts, and providing technical assistance and consultation.

Health promotion capacity standards

All public health jurisdictions, both state and local, must:

46. Assure that the public is informed of the health status of the community, relevant health issues, and that education is provided regarding positive health behavior.

47. Assure the development and provision of culturally, linguistically and age appropriate health promotion programs for community health priorities, including interpretive services.

48. Collaborate with public and private agencies, health care providers, and CHPs in developing strategies to address public health risk factors.

49. Assure provision of services which enhance healthy family relationships and child growth and development.

50. Provide education and information to the general public about communicable and non-communicable diseases of public health importance.

Each local public health jurisdiction must:

51. Maintain an information and referral system concerning available health facilities, resources, and services.

The state must:

52. Provide health promotion models to address public health risk factors.

53. Assure that health promotion programs addressing health risk factors and positive healthy behaviors are fully implemented statewide, providing technical assistance as necessary.

54. Assure that continuing education programs are available that address disease and injury prevention to meet the specific needs of caregivers, health and facilities professionals, and other public and private partners.

55. Promote the use of K-12 school health education curricula.

Health protection

Health protection refers to those population-based services and programs that control and reduce the exposure of the population to environmental or personal hazards, conditions, or factors that may cause disease, disability, injury, or death. Health protection also includes programs that assure public health services are available on a 24 hour basis to respond to public health emergencies and coordinate responses of local, state, and federal organizations.

Health protection includes immunization, communicable disease surveillance and outbreak investigations, water purification, sewage treatment, control of toxic wastes, inspection of restaurant food service, and numerous other activities that protect people against injuries and occupational or environmental hazards.

Health protection activities occur throughout the community, in homes, schools, recreation and work sites. Because of this variability, and the shared responsibility for safety, health protection activities require collaboration with many community partners.

Health protection capacity standards

All public health jurisdictions, both state and local, must:

56. Perform training, monitoring, inspection, intervention, and enforcement activities that eliminate or reduce the exposure of citizens to communicable disease and environmental hazards in both routine and emergency situations.

    - Develop protection programs, in accordance with federal guidelines and scientifically identified risk factors, that address priority health risk factors.
    - Assure that communicable disease contact investigation and follow-up is performed in a timely and appropriate manner, in adherence to guidelines of the federal Centers for Disease Control and Prevention.

57. Assure that individuals, especially children, are immunized according to recommended public health schedules.

58. Assure the surveillance, diagnosis, and treatment of communicable diseases of public health significance.

59. Assure the provision of public health services which affect the community and high risk populations, including:

    - Consultation and education services to day care centers and schools;
    - Intervention with high risk families to provide standardized screening and assessment, education, counseling and referral (such as, Minnesota Parenting Inventory, Region X Child Health Standards);
    - Community education on risk and harm reduction behavior;
    - Outreach to individuals not accessing care.

60. Assure provision of reproductive health services in the community.

61. Collaborate with communities in developing local and statewide emergency response plans, including mobilizing resources to control or prevent illness, injury or death.

62. Provide ongoing public health staff training in emergency response plans, including participation in practice exercises on a routine basis.

63. Provide 24 hour telephone access to respond to public health emergencies.

64. Conduct inspections, monitoring activities, and compliance strategies consistent with state and local board of health rules and regulations.

Each local public health jurisdiction must:

65. Identify and control potential and actual hazards to public health, such as maintaining a safe water system, ensuring safe food handling practices in restaurants, and managing toxic spills.

The state must:

66. Coordinate with federal rule making agencies and the Congress to assure that they take into account the effects of federal rules and statutes on the health risks, protection needs, and resources of Washington State.

67. Develop, in cooperation with local health agencies, uniform statewide regulations and policies which guide the public health activities of direct service providers, the local public health jurisdictions, and state agencies.

68. Carry out direct regulatory responsibilities in those environmental health programs, including those imposed by federal mandate, which are not addressed by local jurisdictions.

69. Assist communities in developing emergency medical and trauma care services to provide immediate access to life saving interventions for illness or injury.

70. Support and assist local agencies' crisis response efforts:

- Support local health agencies in the provision of laboratory services, food and water inspection, radiological assessment, and disease identification and testing during emergencies.
- Help coordinate the transfer of needed personnel, resources, and equipment to emergency sites.

71. Designate the Department of Health as the lead agency, in the Washington State Comprehensive Emergency Management Plan, for coordinating all public health activities during emergencies.

72. Provide public information support to the Office of the Governor and to other state or federal emergency management agencies during emergency and disaster recovery operations.

73. Help coordinate and incorporate local emergency response plans into the Washington State Comprehensive Emergency Management Plan.

Access and quality

Public health jurisdictions monitor and maintain the quality of public health services and participate in monitoring the quality of health and social services through credentialing and discipline of health professionals, licensing of facilities, and enforcement of standards and regulations. They also have a role to play in assuring that all residents have access to health services.

Efforts to assure access and quality of care require partnerships among many affected parties, sharing of data, and tracking of measurements, programs, and changes over time. They require ongoing efforts to obtain community and client perspectives on quality of care or services received.

Access and quality capacity standards

Each local public health jurisdiction must:

74. Assure that prevention and intervention efforts for communicable diseases and other public health conditions, are being appropriately implemented.

75. Assure the competence of food handlers and other individuals whose activities can affect the health of the public who are not otherwise licensed or monitored by the state.

76. Collaborate with the community generally, and health care providers specifically, to reduce barriers to accessing health care and assure individuals and families are linked with health services.

The state must:

77. Assure access to, and appropriate use of, personal primary and preventive health services. This includes:

    - Providing policy, financial, and technical support to meet access needs.
    - Supporting community efforts to address unmet health needs.
    - Assuring an adequate supply and distribution of high quality provider services.
    - Assuring that appropriate interpretative services are available for those who need them.

78. Establish criteria to assess the competency of health professionals as well as design, implement, and evaluate credentialing and certification methods for health professionals, facilities and providers of other public services.

79. Assure that local health jurisdictions, contractors (including state funded public health programs), health care sites and providers comply with appropriate regulations and standards, and meet contractual obligations.

80. Promote best practices through the use of professionally adopted standards of care.

81. Assure that health care and public health providers have access to and use ongoing training and continuing professional education offered in appropriate educational programs.

82. Provide data and information to the Washington Health Services Commission on developing standards for certified health plans, and quality assurance and training activities to promote optimal health status of their enrollees.

83. Conduct quality assurance activities and operate state-mandated regulatory programs necessary to ensure that all laboratories produce high quality outcomes. Work with agencies to correct deficiencies and provide appropriate training programs.

84. Assure that laboratories that provide data for public health purposes (state public health laboratory, local health department laboratories, hospitals, and clinics) are linked through a statewide courier system and a common information management system which ensures ready access to analytical and diagnostic data.

85. Improve the quality assurance and analytical performance of clinical and environmental laboratories through training, consultation, technology transfer, and regulation.

86. Provide patient registries and other consumer access, utilization and outcome information necessary to evaluate performance.

87. Evaluate health system work force trends in coordination with the Health Personnel Resources Plan, and determine effect of health care reform on access to health care.

88. Designate the Department of Health as the primary advocate, along with other state agencies and public entities whose activities are intended to improve health status, to develop and implement policies and programs consistent with the PHIP.

Estimating the need for additional capacity

State and local public health jurisdictions already carry out many aspects of the 88 standards. However, they do not have the necessary resources to achieve them all. This section describes the results of two PHIP processes: 1) An assessment of the performance of the core function capacities by Washington's official public health system. 2) An estimate of the resources needed to meet the PHIP capacity standards in the future.

A more detailed explanation of these analyses, Methodology for the Assessment of Performance and Resource Requirements, is available from the Department of Health upon request.

Carrying out the core function capacities

One of the national year 2000 health objectives is to "Increase to at least 90 percent the proportion of people who are served by a local health department that is effectively carrying out the core function capacities of public health." To develop baseline data for monitoring progress toward this objective, the national Centers for Disease Control and Prevention (CDC) developed a questionnaire about the three core function capacities as defined by the Institute of Medicine (assessment, policy development, and assurance) and surveyed 395 local jurisdictions in six states in 1993. Respondents were asked to evaluate whether each of 10 public health practices were present in their jurisdiction, and to assess the adequacy of the performance of the practice by the entire community.

Washington State used the same survey in May 1994 to develop general information on our performance of the core function capacities. Officials in all 33 local public health jurisdictions of the state were asked to complete the questionnaire. Twenty-five jurisdictions responded. The table below shows the results of the survey, based on an average of the responses from all 25 jurisdictions, with the CDC survey results for comparison. In the table, the term "presence" means the existence of the function and the term "adequacy" is a judgement of how well the function is carried out.

	1994 Washington survey: 25 local jurisdictions		1993 CDC survey: six states, 395 local jurisdictions	
Function	**Presence**	**Adequacy**	**Presence**	**Adequacy**
Assessment	49%	52%	46%	27%
Policy Development	66%	62%	53%	29%
Assurance	75%	59%	68%	40%

This information relates to the core public health functions as broadly defined by the Institute of Medicine. It conveys a general sense of the extent to which the core function capacities are carried out in Washington and how we compare with a group of other states (Alabama, Maryland, Mississippi, New Jersey, South Carolina, and Wisconsin).

This project also gathered information about performance of the categories of core function capacities as outlined in the PHIP capacity standards (assessment, policy development, prevention, administration, and access and quality). The standards were undergoing revision even as the surveys were being conducted, so the results must be viewed as generally indicative of levels of core function capacity performance, rather than as precise measures.

An assessment team from the Department of Health, the Washington State Association of Local Public Health Officials, and the University of Washington visited eight local health jurisdictions in June and July, 1994. At each of the sites, the team asked local public health officials about the categories of the PHIP capacity standards. In addition to determining whether the functions were being performed, the team also asked about the perceived importance of the functions, the degree to which the standards were being met (ranging from "fully" to "not at all"), barriers to meeting the standards, and present and future resource needs.

Based on an average of local public health jurisdiction responses, it was calculated that only 12% of the PHIP capacity standards were fully met in these health jurisdictions, ranging from 4% of assessment capacity standards to 25% of protection capacity standards.

Another part of this analysis focused on the State Department of Health. A questionnaire, completed by each of the six department divisions, assessed the performance of the PHIP capacity standards that the State Department of Health will be expected to meet. Based on an average of the division responses, the study team estimated that the department was fully meeting only 3% of the capacity standards.

Overall, the assessment of Washington's public health system shows most of the PHIP capacity standards are being addressed in some way, but that statewide, when both local and state agencies are combined, only 9% of capacity standards are being fully met.

While the work described above was general in nature, it did convey the clear message that there are deficits in our ability to fully meet the core function capacity standards, at both the state and local levels.

Resources needed to meet the capacity standards

In order to estimate the resources needed to fully meet the capacity standards, the PHIP Capacity Standards Technical Advisory Committee (TAC) developed staffing estimates for local health jurisdictions, and the Department of Health divisions did the same thing for the Department of Health.

The Capacity Standards TAC and the Department of Health divisions focused on full time equivalent (FTE) staffing needs because the great majority of the operating costs of public health agencies are personnel costs and there are existing formulas for determining indirect operating costs per FTE. The use of work force to estimate an annual public health resource gap is not intended as the suggested approach for spending. For example, some capacity standards might be met through restructuring of the system, expanded use of technology, reallocation of resources, and extending public health partnerships with the private and voluntary sectors.

Subcommittees of the TAC made initial estimates of the numbers of FTEs needed to meet the standards in the six functional areas, identifying both the types and numbers of professionals required to meet the various responsibilities. It was clear that clusters of standards required similar kinds of skills and expertise, and that responsibilities of many types of public health personnel cut across the categories. For example, public health nurses have roles to play in assessment, policy development, promotion, protection, and access and quality.

Local government partnerships pay off

The Seattle Parks Department recently began to restore an abandoned landfill into a new public golf course. Given their prior experience with landfills, the Seattle-King County Department of Public Health required an immediate measurement of methane gas at the landfill site before any earth moving began. Methane gas is the main component of natural gas, and is a by-product of decaying vegetable matter; it is highly combustible. The methane levels exceeded 30% (normal levels are well below 1%), and gas was discovered migrating under an adjacent arterial street into a business district. The Health Department advised developing a gas control system to safely vent the gas, but the Parks Department had no funds. At the same time, the Seattle Center Coliseum Renovation Project learned that it would cost $1.2 million to dispose of its excavation soil. With technical advise from the Health Department, the Seattle Center Project agreed to pay for the $250,000 gas control system at the Interbay Golf Course Project in exchange for disposing its dirt at the golf course site. Because the Health Department knew what was going on in its community, both the Coliseum renovation and the golf course are now on schedule and there is no longer a risk to the Interbay community.

The TAC as a whole refined the subcommittee estimates and determined what percentage of time each personnel type might spend doing each of the functions. The TAC estimates of local needs were then reviewed by representatives of fifteen local health jurisdictions, including administrators, health officers, nursing directors, and an environmental health director.

This process of developing and reviewing FTE estimates took three months. In general, reviewers felt that the FTE estimates were on target, though perhaps on the low side. Reviewers also commented that emphasis should be placed on the need for local health departments to "have access to" rather than to "hire" several kinds of professional personnel such as attorneys, labor negotiators, and other legal services personnel.

The conclusion of this work was that the public health system statewide (both the Department of Health and all the local public health jurisdictions) would need resources equal to 5,387 full time equivalent staff to fully meet all the capacity standards.

The estimated annual additional cost of fully meeting all the capacity standards would be about $104 million. This is the estimated resource deficit between where the official public health system is in 1994 and the PHIP vision of where the system should be in the future (2001). This estimate was primarily derived from an approximation of the resources (people, equipment, training and other operating expenses) it will take to annually operate an enhanced public health system.

The $104 million estimate is similar to the findings of a 1993 survey that estimated the costs of addressing urgent unmet public health needs in Washington State at $112 million a year. However, it is important to note that this estimate is only a reference point that will be refined and adjusted as cost saving models for public/private partnerships are tested and implemented, as public health work force skills and performance are enhanced, as communication and information technologies are applied, as the public health system is restructured, and as health system reform in the State of Washington evolves.

It is not recommended that this entire resource deficit of $104 million be made up during the upcoming 1995-1997 biennium. Instead, a six year phased approach should be followed and is described in chapter 5.

Future investment

Current investment in the state's official public health system is estimated at $330 million a year (1994 dollars). Sources for this funding are federal, state, and local government contributions plus permit and user fees.

About 12 percent, or an estimated $40 million is now spent annually on providing clinical personal health services. Approximately $12 million comes from Medicaid reimbursement, other third party payers, and out-of-pocket payments by individuals. Since these types of payments are made directly to the individual service provider, this $12 million will increasingly flow to certified health plans providers as the public health system reduces its emphasis on the direct delivery of clinical and therapeutic services. This leaves about $28 million in federal, state and local government dollars expected to remain in the public health system following the final transition of these clinical services to certified health plans, assuming sustained federal and state funding and non-supplantation of local public health dollars (see Finance and Governance recommendation 16-A in chapter 4).

Assessing community health

In January, 1993, the Thurston County Public Health & Social Services Department began its community health assessment. The department's primary role was to collect county data and facilitate a communitywide effort to identify its health priorities. Local and comparative data were collected from state DOH databases, county communicable disease records, and the Centers for Disease Control and Prevention (CDC). Thurston County Health Department then compiled the data into a health status report and presented the information to the community. The health status report included information on environmental data, birth and prenatal statistics, infectious disease rates, injury morbidity and mortality rates, and maps, including growth areas, landfills and dumps, and zoning areas.

The report will be used by the Thurston County Community Health Task Force to identify community health priorities and craft an action plan that includes proven interventions and strategies to implement them. A principle resource for appropriate interventions will be the PHIP Key Public Health Problems-Appendix A. The community health assessment is an ongoing process: the task force, or its successors, will continue to meet periodically to evaluate the health priorities as well as the effectiveness of the interventions. Thurston County Community Health Task Force membership includes representatives from local health care, schools, business, churches, civic interests, labor, law enforcement, and environmental interest groups.

To meet all of the PHIP capacity standards by the year 2001, it will be necessary to continue to add the equivalent of $104 million (in 1994 dollars), and to earmark specifically for meeting capacity standards the $28 million expected to remain in the system following the final transition of clinical personal health services to certified health plans. This assumes that certified health plans gradually take on more and more of the clinical personal health responsibilities now borne by public health and that universal access to health insurance is achieved, but that public health continues to receive the equivalent of the funds formerly used for personal services.

Improving health: Methods and measures

The PHIP describes interventions for key health problems that state and local jurisdictions identified as current priorities. These are not the only interventions that might be effective, but they do represent ideas for action developed over a period of several months by many people representing a variety of professional and community perspectives. The responsibility for implementing the interventions lies not just with public health departments and districts, but with many other agencies and organizations as well. Public health is truly a community interest; efforts to protect and promote public health must involve numerous participants in every community, and must be undertaken from a firm fiscal and organizational foundation. These interventions are described in Appendix A.

With the capacity improvements called for in this plan, we could significantly improve our understanding of important public health problems in Washington. With stronger assessment, backed up by improved capacity for the other core function capacities—especially policy development and prevention—we will have the opportunity to intelligently choose the strategies that will address the most pressing problems in the most effective manner. This will set the stage for real improvements in health status, which is, after all, the ultimate goal.

In the public health field, health status is a term generally applied to groups of people, rather than to individuals. The health status of any individual person may vary considerably within short time frames; disease or injury may alter health status dramatically and abruptly. The health status of entire populations, on the other hand, will generally change in more gradual ways. It can be tracked, analyzed, and influenced through public health measures.

The group whose health is being evaluated might be the entire U.S. population, or the people of Washington State or one of its counties or cities. It might be the population of a geographic area served by a certified health plan, or the plan's enrolled population. The group might also be a sub-population defined by age, race, sex, or some other factor or combination of factors. For example, a particular analysis might examine the health status of African American women in King County age 65 and older.

We assess the health status of populations using such indicators as death rates and disease incidence and prevalence rates. No single indicator completely gauges the health status of a population, but some have been viewed as key indicators. A high rate of infant mortality, for example, may indicate a number of factors that affect health such as sanitation, nutrition, and access to medical care.

Public health intervention—A sample of the action strategies:

Smoking:

- Assess the smoking status of youth under age 18 by county.
- Eliminate distribution of free tobacco samples.
- Train health care providers to systematically identify tobacco users and provide advice on quitting.

Car Crashes:

- Promote public education on seat belt use and safe driving.
- Change driving under the influence standards to .08 blood alcohol level for adults.
- Expand the hospital data set to include location of injury incidents.

Foodborne Illness:

- Standardize food safety regulations used throughout the state by federal, state, and local jurisdictions.
- Strictly enforce food handling safety regulations at all levels of inspections.
- Encourage health care providers to test patients when foodborne disease is suspected.

Water Quality:

- Ensure that all domestic water supply wells comply with state siting and construction standards.
- Develop model management strategies for on-site sewage systems and implement them first within designated areas of special concern.
- Develop the capacity to identify on-site sewage systems that are not providing adequate treatment.

Appendix A contains background material, proposed standards, and proposed interventions regarding thirty-nine key public health problems in five general areas:

- Infectious Disease
- Non-Infectious Disease
- Violence and Injury
- Family and Individual Health
- Environmental Health

Appendix A also contains outcome standards, which are long-term Washington State-specific objectives, generally for the year 2000. They define optimal, measurable future levels of health status, maximum acceptable levels of disease, injury, or dysfunction, and in some cases the degree to which a particular service or program is operational.

The plan also introduces the concept of threshold standards. Threshold standards define death rates or levels of illness or injury in a community or population which, if exceeded, may signal alarms for action. The initial response to exceeding a threshold should be to take a closer look at the situation to determine what may be occurring and then to decide what action is appropriate. A threshold is also a way of measuring progress toward an established outcome standard.

The role of clinical personal health services in public health

Public health has certain fundamental responsibilities for promoting and protecting the health of individuals, families, and communities. In the past, public health has fulfilled some of these responsibilities by providing direct clinical personal health services. The three most important reasons that public health has been involved in providing medical care are:

- Protecting communities from threats to health posed by individuals with highly communicable diseases such as sexually transmitted diseases, bacterial meningitis, and tuberculosis. Preventing the spread of such diseases requires expertise and approaches to service delivery not commonly found in the health care system. These include treatment of the affected individual, contact tracing to identify others who might have been exposed, education, follow-up, and screening and treatment, as necessary, of asymptomatic persons.
- Providing services to people who have not had adequate income or health insurance coverage to access the health care system. State and local public health jurisdictions have provided primary clinical care at no or minimal cost to individuals through public and community-based clinics. The public health system is sometimes referred to as a "safety net" provider because of this.
- Providing services to people who face non-financial barriers to care which limit their access to the health care system. These access services address language and cultural differences, limited office hours, inconvenient provider locations, and lack of transportation.

Over time, as health system reform progresses, responsibility for most clinical services will shift away from public health to certified health plans and managed care providers. The timing of this transition will depend on the pace of increased insurance coverage under the uniform benefits package which is scheduled to phase in

Health system reform: The opportunity to better understand health status

Currently in Washington State, the principal sources of data for assessing health status are the vital records system (births and deaths), the hospital data system, various disease reporting systems, and surveys which ask a random sample of a population about such topics as tobacco use, seat belt use, and the general state of their health. Other than hospital discharge data, little information is available derived from clinics and other outpatient health care encounter settings. This deficiency should change as health system reform is implemented and the Health Services Information System (HSIS) begins to make available data on the health of certified health plan enrollees.

HSIS will track diagnoses, treatments, and such health determinants as blood pressure, height, weight, and smoking status. It may also contain patient and practitioner assessments of individual patients' overall health status, providing new tools for assessing health status on both an individual and a community basis.

over the next five years. It will also depend on the comprehensiveness of the uniform benefits package which will determine the extent to which public health resources must pay for certain clinical services that are not included, or are significantly limited, in the package. The development of expertise by certified health plans in serving the diverse groups of people now being served by the public health system is critical to the transition as well. Some capacity to provide clinical services must be maintained in the public health system until it is clear that all residents are enrolled in certified health plans and that those plans are effectively meeting the needs of all their enrollees.

The protection of the public's health is of utmost concern in the public health system. Thus, it is not surprising that significant attention and expertise has been focused on clinical services that are provided to individuals, but whose broader aim is to protect whole communities or populations. Public health should continue to provide these clinical services in keeping with a fundamental responsibility to protect the public's health.

Currently, the public health system in Washington funds and delivers a variety of clinical personal health services, with the great majority of resources spent in five areas: vaccine and immunization; sexually transmitted diseases (STDs); HIV/AIDS; family planning/reproductive health; tuberculosis. These clinical personal health services are delivered to individuals but also clearly contribute to the health of entire communities.

Other clinical personal health services provided by local public health jurisdictions (accounting for a very small percentage of he current spending on clinical services) are personal in nature but do not directly reduce the general public's exposure or risk. Examples include well child exams, speech therapy, breast and cervical cancer screening, and nutrition counseling.

The responsibility for clinical personal health services that should remain in the public health system is that of controlling and reducing exposure of the population to hazards, conditions, or factors that may cause disease, disability, injury, or premature death. Consistent with this responsibility, public health must always maintain the capacity to:

- Assure the surveillance, diagnosis, and treatment of communicable diseases that, when left untreated, readily spread throughout communities and populations;
- Assure that individuals, especially children, are immunized according to recommended public health schedules.
- Assure provision of reproductive health services in the community.

To meet these responsibilities, public health may or may not directly provide clinical services. This will likely vary greatly over time, and from community to community, as new partnerships and collaborations are developed which create a truly reformed system.

The next chapter describes the structured health system and its financing. It includes principles and recommendations for changes to the structure of the system to most effectively carry out the 88 capacity standards described above.

1. Assessment Protocol for Excellence in Public Health (APEX/PH). APEX/PH is a process for use by local health departments to assist them in better meeting the public health needs of their communities. The process is presented in a workbook which a local health department can use to:

- Assess and improve its organizational capacity.
- Assess the health status of the community
- Involve the community in improving public health

APEXPH supports local health departments interested in enhancing their organizational capacity and strengthening their leadership role in their communities. A strong local health department will better enable a community to achieve locally relevant goals.

The workbook is available from the American Public Health Association, The Guide to Implementing Model Standards. The Guide was developed jointly by the Centers for Disease Control and Prevention, American Public Health Association, and the National Association of County Health Officials.

1993 Model Standards Project • American Public Health Association • 1015 Fifteenth Street NW • Washington, DC 20005.

Jurisdictions

Partner

Finance

Governance

Tribal

Government

Chapter 4

Finance and governance: Principles and issues

The primary responsibility of state and local public health jurisdictions under the Public Health Improvement Plan is to meet the capacity standards, which represent the actions necessary to protect, promote, and improve health. While local structures vary, the responsibility to meet the capacity standards would be uniformly applied across the state.

Significant deficiencies in meeting the capacity standards exist at both the state and local levels. Public health, as currently organized and financed across the state, is inadequately prepared to meet the challenges of the future. The 1994 PHIP addresses the deficiencies with recommendations for increased resources, and by recommending changes in how local and state public health jurisdictions govern themselves, organize with other agencies and organizations, and work together.

There is a need to clarify the relationships between the many entities which share responsibility for public health. Local governments determine the structure of their local public health jurisdictions, resulting in varied organizational structures which, at times, impede coordinated and collaborative approaches across jurisdictions. Mutual accountability between local public health jurisdictions and the state must be established if Washington is to create a well-functioning statewide public health system. Interagency agreements are needed between the multiple federal, state and community agencies which have responsibilities and/or resources for meeting the capacity standards. The public health needs of Indians in Washington present some unique coordination issues between the tribes, the Indian Health Service, and state and local public health jurisdictions.

The resource base for the public health system is not adequate to fully meet the capacity standards. There is a lack of both state and local funds specifically dedicated to public health. The methods for distributing the funds do not encourage system-wide effectiveness and efficiency.

This chapter presents background on key public health finance and governance issues and recommendations to resolve these crucial issues.

Governing the public health system

Local public health jurisdictions

Title 70 RCW places primary responsibility for public health activities with local governments, giving them broad responsibilities for protecting the public health through program design and delivery, rule making authority and enforcement

Finance and governance principles

- The finance and governance structure must provide for stable, equitable revenue sources.
- The public health system must provide local governments with the flexibility and responsibility to determine local governance structures that are capable of fulfilling public health responsibilities.
- The finance and governance structure must include proportionate financing responsibilities among state and local governments for those public health functions that must be universally and equitably available statewide.
- The public health system serves the public at large as well as individuals, and the financing structure must reflect that balance.
- The finance and governance structure of the public health system must hold all publicly funded agencies and organizations accountable for the allocation and use of resources.
- The finance and governance structure of the public health system must balance diverse local needs, the resources necessary to address them and the ability to direct resources to accomplish the greatest good.
- In attempting to serve the greatest good, the public health system must give serious consideration to the potential for harm to any portion of the community.
- The finance and governance structure of the public health system must link the responsibility for financing with the authority for decision making.
- The public health system must integrate different perspectives of the community.

Ships

powers. Every city, town and county must either form a local health department (or district) or be part of a health department with other local jurisdictions (chapter 70.05 RCW).

Local governments are empowered to choose from four types of local health departments: single city, town or county department; combined city/county department; single county health district; or multi-county health district.[1]

Each city, town, and county is financially responsible for the cost of public health activities in its respective jurisdiction. The board of health for each jurisdiction determines the portion of financial responsibility of each local government. RCW 70.05.145 establishes an arbitration procedure for resolving disputes that may arise between local governments and the public health jurisdiction.

The 1993 Health Services Act amends the local public health statutes in several ways. The act decreases the variation in local public health structures and creates dedicated local funding. Specifically the act:

1. Removes cities and towns from the definitions of local health departments, local board of health, and health district;

2. Removes cities and towns from local boards of health and from health districts;

3. Repeals the requirement that cities and towns form separate health departments, join a health district or purchase health services from other health departments;

4. Gives county boards of health jurisdiction over cities and towns within the county boundaries;

5. Repeals the statute that allowed single counties to form health districts;

6. Removes the financial responsibility of cities and towns for public health and repeals the arbitration language, placing the full financial responsibility for public health on each county in the state; and

7. Establishes a dedicated financing structure by allocating 2.95% of the Motor Vehicle Excise Tax (MVET) to county health departments exclusively for the purpose of public health. (This portion of the MVET is currently part of the 8.83% of allocated to cities and towns for police and fire protection and preservation of public health.)

These changes have an effective date of July 1, 1995. The Health Services Act requested the governing authorities of the Association of Washington Cities, the Washington State Association of Counties, and the Washington Association of County Officials (the "Tri-Association") to jointly study and develop consensus recommendations regarding the implementation of these amendments. The act also required that the study and the PHIP be coordinated. The Washington State Association of Local Public Health Officials and the State Department of Health have participated in the study as advisors.

Finance and governance principles (continued)

- The finance and governance structure of the public health system must recognize diverse perspectives and encourage community ownership through participation in determining and meeting state and local priorities.
- The finance and governance structure of the public health system must support the performance of the core public health functions of assessment, policy development and assurance.
- The finance and governance structure of the public health system must foster long term prevention.
- The finance and governance structure of the public health system must promote decision making which balances data, scientific information, available resources, and community priorities.
- The public health system must encourage partnerships with other agencies, tribal governments, and organizations which affect delivery of public health and related services in the communities. The Public Health Improvement Plan Steering Committee identified a number of issues that will be considered in the next PHIP. Those issues are described under the "Agenda for the Future" section of this plan.

Local boards of health: As described above, the governing boards of existing local public health jurisdictions include county elected officials, and, in the case of districts, representatives from city governments. Effective July 1, 1995, the Health Services Act limits representation on local boards of health to county elected officials.

The capacity standards require community involvement in public health core functions. Since the authority for designating public health governance resides at the local level, expanding board of health membership to include non-elected community representatives is one possible way that local public health jurisdictions could involve the community. The current laws have been interpreted to preclude non-elected citizens, so some amendment of the law is needed to give jurisdictions the option of including non-elected citizens.

Collaboration between local jurisdictions and with others: When resources are limited, health care providers and health-related agencies must join forces to fully meet the health needs of a community. Collaboration is a critical strategy for efficient use of limited resources. Local public health jurisdictions must often work with communities, cities, counties, tribal governments and the Indian Health Service, each with their own priorities and responsibilities. Also, the capacity to promote and protect health — as well as the magnitude of public health problems — varies considerably from community to community, so the sharing of resources and expertise can be a cost-effective way to enhance capacity in all areas of the state.

The necessary collaboration among local public health jurisdictions and other community organizations may not happen automatically. Since new state funds should be tied to enhancing core function capacity, the mechanisms for distributing these funds should include financial incentives that promote partnerships. The governance recommendations provide incentives to local public health jurisdictions that plan to meet the capacity standards through collaboration.

Authority of the State Secretary of Health

At the state level, development of public health policy resides with the Secretary of Health and the State Board of Health. The Secretary is appointed by the Governor and heads the State Department of Health. Under RCW 43.70.130, the Secretary has broad powers to investigate health threats, enforce public health laws, and generally supervise the official public health system for the purpose of establishing uniform reporting. Although local health officers have primary responsibility for preserving the public health within their jurisdictions, the Secretary is empowered to intervene when the local jurisdiction either cannot or will not enforce public health laws. The Secretary may also intervene when an emergency threatening the safety of the public exists beyond the capability of the local jurisdiction. The Secretary can also gain authority in a local health jurisdiction through an agreement with the local health officer or the local board of health. The finance and governance recommendations do not alter the responsibilities and authority of the Secretary of Health.

Authority of the State Board of Health

Through the Washington Health Services Act, the Legislature reaffirmed the basic mandate of the State Board of Health contained in Article XX of the Washington State Constitution of 1889. The board "provides a forum for the development of public health policy in Washington State," and has rulemaking authority to protect

Local health boards set policy

Local boards of health are responsible for approving the use of all funds coming into their department or district. The board has discretionary powers for how local funds are applied to meet the particular needs of the community. Other funds, such as from state and federal sources, are often designated for a particular program, and must be formally accepted by the boards before any services can start. If public health needs are identified that require immediate attention and are not part of the annual budget, the board has the authority to shift funds or request additional help from local or state governments.

Local boards of health usually hold monthly public meetings. In most cases their deliberations are met with little public comment and scant attention from the media, but there have been some exceptions. In 1989, the Tacoma-Pierce County Board of Health meetings had standing-room-only and national media attention as the board approved public funding for the nation's first needle exchange program.

public health, improve the health status of Washington residents, and "promote and assess the quality, cost, and accessibility of health care throughout the state," as stipulated in RCW 43.20.050 and RCW 43.70.050.

The State Board of Health is an independent citizen board composed of ten members appointed by the Governor broadly representative of consumers, persons experienced in matters of health and sanitation, elected officials, and local health officers. It is "empowered to hold hearings and explore ways to improve the health status of the citizenry."

Chapter 5 of this report describes future study needed regarding the State Board of Health and State Department of Health responsibilities and activities that may overlap. This analysis will be completed as part of the next PHIP.

Tribal governments

As United States citizens and residents of Washington State, American Indians are eligible to participate in federal and state health programs, including state public health programs. Since 1955, they have also been eligible for services provided by the federal Indian Health Service (IHS), which is the payer of last resort. Most Indians receive their health care through IHS or IHS contract care facilities.

IHS is funded by Congress to support only 60% of the tribes' medical needs, resulting in a lack of adequate facilities and a limit on the tribes' ability to develop effective preventive programs. Many basic public health services, such as food programs, are not funded. The Department of Health and local public health jurisdictions have the technical expertise to help tribal governments develop needed public health services. No additional financing for developing capacity exists on reservations, but some arrangements with IHS may be possible in the future as tribes move toward self determination through federal Public Law 93-638 contracting or self governance. The federal Self-Determination Act of 1975 allows the U.S. Secretary of the Interior and the U.S. Secretary of Health and Human Services to contract directly with tribal governments to administer Bureau of Indian Affairs or Indian Health Service programs. These contracts enable tribal governments to manage their own housing, law enforcement, education, health, social service, and community development programs or to subcontract with other entities.

The state Interlocal Cooperation Act (chapter 39.34 RCW) is the means for tribes and local government to work together in establishing formal agreements. Possibly the greatest barrier to such health-related agreements is the issue of enforcement authority held by public health officials, especially concerning environmental health matters. State or local government attempts to impose authority will not succeed. Tribes should be approached with an invitation to participate and with a clear recognition by state and local authorities of tribal sovereignty.

This plan provides an opportunity for local and tribal governments to work together to enhance public health activities so that American Indians have public health protection and services consistent with the capacity standards. Therefore, local health jurisdictions should go beyond simply extending an invitation to tribes to participate in the planning process. They should take the initiative to learn tribal protocols, offering information and technical support to develop core public health capacity on the reservation.

Indian Health Service relationships with tribes in Washington State

There are 26 federally recognized tribes in Washington State, occupying reservations which vary greatly in terms of geography, resources and population. In order to make health services accessible, the tribes and the Indian Health Services (IHS) have adopted a variety of service approaches. IHS provides services four different ways in this state:

(1) Tribes assuming self governance, through a compact with the federal government, receive funds to provide health care and public health services based on a plan developed by tribal government (e.g., the Lummi Tribe);

(2) Tribes contract with IHS for funds to provide all federally-mandated services under IHS; these services are delivered by the tribe strictly as outlined by IHS (e.g., the Puyallup Tribe);

(3) Tribes contract with IHS for funds to provide public health services, while IHS provides outpatient and direct medical care, including contract health care (e.g., the Colville Tribe);

(4) Small tribes without their own IHS clinic receive vouchers for members to obtain contract services at a nearby private clinic or at the nearest IHS facility. Small tribes may, in some cases, depend on local public health jurisdictions for some clinical preventive care (e.g., the Kalispel Tribe).

These relationships would primarily be between local public health jurisdictions and tribes, based on the framework for government-to-government cooperation and implementing procedures included in the Centennial Accord of 1989 (see Appendix C). The Department of Health should play an active role in bringing together local and tribal governments, and provide technical assistance to tribes that choose to develop core public health function capacity.

Financing the public health system

A strong infrastructure at both the state and local government levels is fundamental to meeting capacity standards. This infrastructure must be built on a solid fiscal foundation with three elements: (a) adequate levels of funds; (b) dedicated sources of financing; and (c) methods of distributing funds that encourage system-wide effectiveness and efficiency.

Adequate financing for public health

Almost half of the current funding for public health is from local resources, about twenty five percent is from state resources, and about twenty eight percent is from federal and other resources. The total amount spent for public health varies greatly among the 33 jurisdictions, from a high of nearly $60 per resident per year to less that $15 per resident per year. This disparity occurs because of decisions made by local governments regarding type and scope of programs, potential for additional funds, and population size.

Adequate financing to meet the capacity standards is the first element of a solid public health infrastructure. The funding level must be responsive to population growth, changing health status, and community priorities. In addition, public health funds should be linked to the expenditures of the overall health system, as public health becomes a more integral and vital component of that system.

Dedicated sources of financing

Sources of public health financing include categorical and grant funds, as well as fees and permit revenues. Categorical funds, those designated for a specific program or to solve a specific problem, are usually neither flexible nor stable. Because categorical funds are usually inflexible, duplication and inefficient use of resources can occur between programs that have overlapping functions or needs.

Virtually no state and local government financing sources are dedicated exclusively for public health on a permanent basis. Currently, local government contributions are used as a match for grant programs and Medicaid billing, to support the administrative costs of categorical programs, to subsidize clinical services or to substantially underwrite the costs of other services (for example, environmental health services through fee support and local contributions). The result is a system that is neither flexible nor stable, and lacks the ability to provide the additional resources necessary to meet capacity standards.

Dedicated sources of financing are necessary to support the ongoing development of the public health system in order for the system to be built and maintained on a stable funding base. A dedicated funding source, such as a portion of a state or local tax dedicated on an ongoing basis for public health purposes, would add stability to the funding base of public health. As stated previously above, the 1993 Health Services

What is public health infrastructure?

An effective public health system has an infrastructure that is just as important — but not as obvious — as the transportation infrastructure. In the transportation system we need sufficient, stable financing to pay for roads, rails, ports, and airports that have adequate capacity and are of high quality. This is essential for moving commercial goods to market and for moving people to work, services, homes, schools, and recreation.

Likewise, we need sufficient, stable financing to pay for the "roads and rails" of public health — the data and monitoring systems, the technical expertise to investigate disease outbreaks, the personnel to inspect restaurants and septic systems, the community knowledge to bring groups and resources together to prevent threats to health. Without adequate infrastructure, communities will not have the information or resources necessary to solve today's health problems or avoid those that will threaten us in the future.

Act, effective July 1, 1995, transfers 2.95% of the Motor Vehicle Excise Tax (MVET) to county health departments and districts to provide public health services; and makes counties solely responsible for local public health financing.

While the MVET could serve as one source of dedicated financing for local public health jurisdictions, it alone is insufficient to allow public health to meet the capacity standards. In fact, in some cases it reduces the amount of local (city or county) funding obligations to public health while in other cases it increases those obligations.[2] While the state is exploring ways to lessen the impact of the gains and losses due to MVET, other dedicated sources of funding must be identified that are stable and reliable.

State-level dedicated financing is needed. The Health Services Act states that the Health Services Account was created to include expenditures for maintaining and expanding health services access for low income residents, maintaining and expanding the public health system, containing health care costs, and the regulation, planning, and administering of the health care system. Therefore, a portion of the Health Services Account is an appropriate dedicated funding source for implementation of the PHIP. In addition to MVET as a dedicated source for local jurisdictions, and the Health Services Account as a dedicated source for state funding, other dedicated sources are necessary for the financing of the PHIP.

Financing distribution methods

The public health system requires financing distribution methods which move the state and local public health jurisdictions towards increased effectiveness and efficiency, and through which federal, state and local governments share equitably in the financing. Local government ability to pay for public health, as well as local population characteristics and geography, need to be considered in determining these shares. Incentives will be designed to promote collaborations between government agencies and between the private and voluntary sectors. The incentives should support the implementation strategies directed toward achieving full capacity by 2001. Further system accountability should be achieved through performance-based contracts tied to attaining capacity standards.

The 1993 Legislature allocated $10 million in funds for the 1993-95 biennium directly to local health jurisdictions on a per capita basis. These funds were to be used for "urgent public health needs" that jurisdictions could determine based on community priorities and needs. The positive experience of this fund allocation method suggests that a system which assures flexibility in priority-setting at the local level, with accountability for meeting those priorities, can be very successful in meeting public health needs in local communities, leveraging local and other resources, and encouraging partnerships. (See Appendix D for a discussion of the use of Urgent Public Health Needs funds).

Regionalization works

In 1992, the Washington Department of Health Public Health Laboratories and the Spokane County Health District formed an interagency work group to evaluate the state's public health laboratories. The group recommended the formation of a state/local regional laboratory system. Spokane County Health District became the first regional site laboratory and serves 13 eastern Washington counties. This consolidation resulted in lower test costs, faster turn around time, and more services available to a larger number of clients. This initiative on the part of state and local public health in understanding the needs of their customers and communities fostered a strong sense of partnership and improved public health in that region.

Finance and governance recommendations

Responsibilities and relationships of state and local public health jurisdictions

1. Local public health jurisdictions, including tribal governments, are responsible for promoting and protecting the health of their communities. The state may play a consultative or prescriptive role with local jurisdictions, depending on their performance. Specifically,:

   a. The Department of Health and local public health jurisdictions should jointly establish clear measures of whether local public health jurisdictions are meeting the capacity standards.

   b. State financing of local public health jurisdictions should be linked to specific agreements (e.g. contracts) for meeting capacity standards. (The state will encourage jurisdictions to collaborate with other entities in order to meet the capacity standards.)

   c. The achievement of capacity standards should become the basis for the Department of Health evaluation of local public health jurisdictions' performance. The Department of Health and local public health jurisdictions' objectives and budgets should reflect the priorities of the PHIP.

2. The Department of Health, in consultation with the State Board of Health and local health jurisdictions, has ultimate responsibility and authority to assure compliance with capacity standards. The Department of Health, in consultation with the State Board of Health and local public health jurisdictions, will have overall responsibility and authority for development, implementation, and evaluation of the PHIP.

3. The Department of Health and local public health jurisdictions should jointly develop an evaluation tool to allow local public health jurisdictions to categorize themselves according to their ability and desire to meet capacity standards. The categories will guide financing strategies and incentives for collaboration and regionalization. The recommended categories are as follows:

   Category A

   Jurisdictions that declare independent ability to meet the capacity standards as defined in the PHIP or have strategies currently in place to accomplish same within a defined period of time.

   Example: A large local public health jurisdiction that has established capacity in all core function areas declares its intention to independently achieve capacity standards by the year 2001. With additional state funds for the PHIP, and redirecting all local government contributions to include those previously used for clinical services (which are transitioning to the uniform benefits package), this local public health jurisdiction will progress incrementally toward full achievement of the capacity standards.

Category B

Jurisdictions that declare some independent ability to meet capacity standards and have strategies in place to increase capacity through collaboration with other entities (such as other local public health jurisdictions, community providers, Department of Health, etc.), within a defined period of time.

Example: A medium-sized local public health jurisdiction, surrounded by other medium-sized or small local public health jurisdictions, elects to combine resources with one or more local public health jurisdictions to achieve greater efficiency in meeting assessment, administration, and health promotion capacity standards. The local public health jurisdiction has strategies in place, however, to independently meet capacity standards for health protection, policy development and access/quality assurance. Or two or three adjacent local public health jurisdictions combine resources to meet capacity standards in order to achieve a greater economy of scale. Or any combination of the above. These local public health jurisdictions may also contract with other public or private entities, such as hospitals or universities, to assist with specific activities related to the capacity standards.

Category C

Jurisdictions that declare no independent ability to meet capacity standards and do not have strategies in place to increase capacity. These jurisdictions must develop an agreement to contract with the Department of Health to meet the capacity standards.

Example: A small local public health jurisdiction recognizes the lack of available local resources to independently meet the capacity standards and chooses not to make the fundamental changes required to meet the standards. Political barriers may also inhibit collaboration with other local public health jurisdictions. In this case, the small local public health jurisdiction would declare its desire to have the Department of Health determine and carry out strategies to meet the capacity standards. The Department of Health would then charge the local government for the cost of implementing those strategies.

4. If a local public health jurisdiction does not fulfill its responsibilities as defined by the capacity standards, the state must, as a last resort, exercise its ultimate authority for public health, and will assume responsibility and charge the local government(s) as appropriate.

Relationships of state and local boards of health

5. The RCWs should be amended to allow for a minority of non-elected citizen participation on local boards of health.

Relationships of Indian tribes and public health jurisdictions

6. Local public health jurisdictions and the Department of Health must recognize the autonomy of tribal government. Tribes have the independent authority to determine their own capacity standards; set urgent public health priorities; and carry out core public health functions.

Building capacity statewide

One strategy to target state funds to promote the PHIP implementation could occur through the recommended process of local public health jurisdiction self-categorization. By using the evaluation tool jointly developed by the Department of Health and local public health departments, a local public health jurisdiction would assess its current ability and desire to meet capacity standards. A local public health jurisdiction would declare to Department of Health its strategy by selecting a category designation (categories A, B, or C) for meeting each capacity standard grouping. In addition, the local public health jurisdiction would indicate its local priorities for funds, to be considered, along with the recommended emphases for new state funds, in negotiating the performance based contracts. These contracts would be specific to the individual capacity standards, and funds would be targeted for those capacity standards.

For example, if a large local public health jurisdiction with a desire to independently meet all capacity standards has a relative weakness in assessment and policy development functions, the contract for new state funds could target development in those areas. If the local public health jurisdiction has relative strength in health protection capacity, no new funds would be targeted for those capacity standards.

7. The State Legislature should fully fund Section 469 of the Health Services Act of 1993, the American Indian health care delivery plan, and designate the Department of Health as the lead agency to work in partnership with the tribes to coordinate, develop, and implement the plan with the other appropriate state agencies. The plan must include: (1) recommendations to providers and facilities on methods for coordinating and joint venturing with the Indian Health Service and the tribes for service delivery; (2) methods to improve American Indian-specific health programming; and (3) creation of co-funding recommendations and opportunities for the unmet services programming needs of American Indians.

8. The Department of Health should assume a lead role in promoting cooperation between local public health jurisdictions and tribes, including agreements for supporting development of capacity functions and responses to public health emergencies. The primary relationships should be between local public health jurisdictions and tribes, based on the framework for government-to-government cooperation and implementing procedures included in the Centennial Accord of 1989.

9. Local health jurisdictions have an obligation to recognize tribal governments within their boundaries equal to the recognition and privileges accorded other local units of government. This should include, but not be limited to, representation and inclusion in community health assessment, planning, and core function capacity development.

State and local public health jurisdiction financing

10. Total public health financing should equal $83 per capita in 1994 dollars, or approximately 2.3% of total annual health system expenditures.

11. Multiple sources of dedicated funds for public health should include a percentage of the Health Services Account, a mechanism whereby private sector financing of health care reflects the public costs of protection and promotion of the health of the population, and other sources as identified in the future.

12. New state funds for public health should be deposited in the Public Health Services Account.

13. Dedicated funds should be used to finance the core function capacity, urgent public health needs, and emergency public health needs.

14. New 1995-97 state dedicated funds for enhancing local capacity, and shared state and local capacity, should emphasize, but not be used exclusively for, the core capacity functions of assessment, health promotion, and access/quality assurance.

15. The state/local government shares of financing core function capacity should be approximately equal statewide by 2001.

Inter-governmental collaboration in northeastern Washington

The Kalispel Reservation is located within Pend Oreille County. It is beautiful but sparsely populated country, with the Pend Oreille River flowing north from Idaho into Canada, surrounded by the Selkirk Mountains. The Reservation is 25 miles from the nearest medical services and over eighty miles away from the Indian Health Service (IHS) Unit that is responsible for providing health care to tribal members. Since 1989, through a contract with IHS, the Northeast Tri-County Health District has provided services to the Kalispel including home visits for prenatal and postnatal education and support services; immunizations for all ages, including flu shots for the elders in their homes; follow up with social workers and day care workers on family issues; and health education. The key to this successful relationship is the understanding on the part of the District that the needs of the reservation must be met within the context of the culture of the Kalispel people. Frequent communication occurs between the public health nurse, the community health representative, and the tribal elders. This complementary relationship results in improved health status for not only the Reservation, but also for the District as a whole.

16. The Department of Health should be responsible for distributing state funds for public health, consistent with the following provisions:

   a. Additional state funds for public health should be used solely to expand and complement, but not supplant, local government support for public health programs. The local government tax revenue used to support public health will be based on calendar year 1993 or an alternative calendar year as arrived at through negotiations with the Department of Health.

   b. Local public health jurisdictions that cannot meet the capacity standards alone but that have strategies or a plan to collaborate with other local public health jurisdictions or other organizations in order to meet the standards, will receive an increased match rate during a transition period. That is, local public health jurisdictions in Category B will receive, as a short-term incentive, funding to offset the costs of collaboration.

   c. The state's method(s) of distributing funds to local public health jurisdictions should consider the local government's ability to pay, population, geography, and other characteristics. Ability to pay should be determined by a formula that considers assessed property values, population, and other relevant factors.

Based on these finance and governance recommendations, the 88 capacity standards in Chapter 3, and the vision of the public health system in Chapter 2, an implementation plan has been developed. The implementation plan is the topic of the next chapter.

1. Title 70 RCW places primary responsibility for public health activities with local governments, giving them broad responsibilities for protecting the public health through program design and delivery, rule making authority and enforcement powers. Every city, town and county must either form a local health department or be part of a health department with other local jurisdictions (chapter 70.005 RCW).

Local governments are empowered to choose from among the following types of local health departments:

- Single city, town or county department (RCW 70.05.020 and RCW 70.05.030)

  The board of health has the same membership as the governing body of the city, town or county. The jurisdiction of the board of health coexists with the boundary of the city, town or county, with the exception that county boards of health do not have jurisdiction over the cities with populations over 100,000 or over cities or towns that are providing or purchasing public health services. (There are currently no single city or town health departments in Washington State).

- Combined city/county department (chapter 70.08 RCW)

  Cities with a population of over 100,000 may combine with their county to form a health department. The governing bodies of the city and county establish and operate a combined city/county department and appoint a director of public health. The statute does not mention the composition of the board of health.

- Single county health district (RCW 70.46.030)

  The membership of the board is defined in statute, and must represent the county, cities and towns that comprise the district. The governing bodies of the cities and towns must mutually agree on the members that will represent them on the board. The members must be from the governing bodies of the county, cities and towns (except in counties with a population between 70,000 and 125,000, the board shall include a "qualified voter of an unincorporated rural area of the county"). The jurisdiction of the district is the county and all cities and towns within its boundaries (cities with populations over 100,000 have an option of whether to join the district). If a city of over 100,000 population is included in a single county district, the city shall have representation on the board equal to the county commissioners. City board members are appointed from the membership of their governing body.

- Multi-county health district (RCW 70.46.020)

  The membership of the board is defined in statute, and must represent the counties, cities and towns that comprise the district. The members must be from the governing bodies of the counties, cities and towns. The governing bodies of the cities and towns must mutually agree on the members that will represent them on the board. The jurisdiction of the district is the county and all cities and towns within its boundaries (cities with populations over 100,000 have an option of whether to join the district).

2. Analysis by the Association of Washington Cities, 1994

Evaluation

Roles

Invest

Retention

Implementation

Recruitment

Chapter 5

Implementation plan and agenda for the future

Introduction: A six-year plan for improved public health

The Health Services Act of 1993 requires that the Public Health Improvement Plan include a budget, staffing plan, and implementation schedule to enable the public health system to carry out the core functions of assessment, policy development, and assurance. Protecting and improving the health of communities throughout Washington — the mission of public health and the goal of the PHIP — is dependent on the ability of the system to perform these critical functions.

The act strongly encourages public health agencies, the Washington Health Services Commission, and health plans and providers to work together to improve the health of state residents and communities. By integrating public health and illness and injury care systems into the structure of "health system" reform, the Legislature intends that these entities focus on the same goals (improved access, controlled costs, and improved health), and operate according to consistent rules and incentives. This implementation plan emphasizes early progress in forging these cooperative efforts to improve health status.

The 1994 PHIP calls for a complex strategy of strengthening public health infrastructure. It also calls for developing new and enhancing existing partnerships with health service providers and the community. Community and state-level partnerships will be focused on developing policy, devising prevention strategies, and delivering services. This strategy involves stabilizing and strengthening how public health is financed and governed, critical improvements that will require investment of an additional $104 million per year (1994 dollars) by 2001. In turn, this added investment will allow communities to more successfully prevent disease and injuries, modify unhealthy behaviors, and reduce environmental health threats.

Implementing the 1994 Plan will result in dramatic changes in the structure of the public health system. In order to assure that changes are made effectively, and that the new funds are effectively and efficiently used to make these critical improvements, implementation should be phased in over a six-year period, from July 1995 through June 2001. The new funds should begin with $17.5 million in the first year (1995) and increase annually by that amount over the next five years ($17.5 million, $35 million, $52.5 million, $70 million, $87.5 million and $104 million) until the annual increase is $104 million in 2001. A phase-in is also necessary to allow for adjustments as the complexities of broader health system reform unfold. The need to anticipate and respond to a changing environment also means that public health strategies will need to be adjusted even after 2001, when well-functioning core capacities will have been developed.

National attention on PHIP

The PHIP is generating excitement throughout the national health care community. "The State of Washington is poised to do what the rest of the country has only talking about: underpin health system reform with a strong public health foundation," claimed a front page article in a recent issue of American Medical News, the publication of the American Medical Association.

"Washington State has recognized the central role of public health in health reform," said a local health officer from Michigan. A past president of the National Association of County Health Officers stated, "It (PHIP) can be a model for what can happen in other states or even nationally. All of us in public health will be watching."

Other states, such as Minnesota, Ohio, and Michigan have already undertaken efforts to study and plan reform strategies. From the attention being given the PHIP, it likely will have a significant influence on health system reform outside the boundaries of Washington State.

Thus, the 1994 PHIP and the implementation actions presented in this chapter should be viewed as a "rolling" plan to be revised at least every two years. In fact, the PHIP is required to be revised and submitted to the legislature prior to every biennium. This chapter focuses on the next biennium (1995-97), briefly describing the work the Department of Health, local public health jurisdictions, tribal governments, and state agencies will be undertaking. It also describes the investment necessary to support this work, a framework for evaluating the success of implementation, and key issues that will be addressed in the next Public Health Improvement Plan due to the legislature by December 1, 1996. The following chronological sequence encompasses this Phase of the PHIP:

The 1994 PHIP	The first biennial PHIP, submitted to the Legislature on December 1, 1994, covering the two-year period of July 1, 1995 - June 30, 1997.
1995-97 Budget	Financing for the PHIP implementation activities during the biennial period of July 1, 1995 - June 30, 1997.
The Next PHIP	The second biennial PHIP, submitted to the Legislature on December 1, 1996, covering recommendations for the two-year period of July 1, 1997 - June 30, 1999.

1995-97: Recommendations for action

The 1994 PHIP proposes a number of high priority actions that will begin the implementation of the capacity standards, and finance and governance changes described in Chapters 3 and 4. These actions should begin now.

Collaboration

1. In concert with certified health plans and other health-related community agencies, local public health jurisdictions should take the lead in developing a plan for shared responsibilities, including reporting and follow-up of communicable diseases, ensuring access and quality of public health services, and providing referrals within the local health care system.

2. The State Department of Health should provide, in collaboration with local public health agencies, technical assistance to certified health plans and other community providers to strengthen their ability to prevent disease and promote public health.

3. State and local public health agencies should assist in the development of communication policies and networks among state and local public health jurisdictions and other community health-related agencies and organizations, such as certified health plans, health care providers, community and migrant health centers, regional genetic clinics and school-linked health services.

Public hospital districts and reform

Public hospital districts are special district local governments authorized by Washington law (Chapter 70.44 RCW). Initially authorized in 1945, there are fifty-two public hospital districts (PHDs) in the state, with the great majority of these located in rural areas. Roughly 40% of the hospitals in Washington are owned and operated by public health districts and their elected governing bodies. Hospital districts are authorized to provide a broad range of services beyond hospital care, and these service offerings range across the entire health services continuum.

Collaboration between local public hospital districts and local public health jurisdictions can become an important element of reform. Public hospital districts are involved in working with their communities to fashion and support reform. Many public health districts support the integration of services within communities, but some recognize that some communities may find themselves so remote or small that local autonomy can be achieved only through some degree of regionalization. The local levies for local hospital districts will provide valuable support for non-insured health services (such as health education, senior nutrition programs, and other services important to communities). The public health/public hospital district partnership can be a major asset for strengthening communities across the state.

4. The State Department of Health should collaborate with the Washington Health Services Commission in the design and implementation of a statewide education campaign to inform residents of the services provided by public health and those covered by the uniform benefits package.

5. The State Department of Health should create and implement a program of short-term financial incentives to strengthen coordination and collaboration among local public health jurisdictions and other community based health-related agencies and organizations.

Core function capacity building

6. New state funds for public health should emphasize improving capacity for assessment, health promotion, and access and quality, recognizing that the unique needs of specific jurisdictions may require early investments in policy development and protection.

7. The Department of Health should develop and offer technical assistance to local public health jurisdictions to help them make decisions concerning the provision or assurance of clinical personal health services, and their relation to core function capacity needs. This assistance may include helping local jurisdictions determine whether they are Category A, B, or C, in terms of their ability and desire to meet the capacity standards (see finance and governance recommendations, Chapter 4).

8. The Department of Health should work closely with the local public health jurisdictions to assist them in developing the capacity for community health planning and community mobilization. The 1994 PHIP capacity standards place a strong emphasis on community health planning for public health, and the role of public health in mobilizing the community for public health decision making.

9. The Department of Health should help develop and implement a professional training and educational program to enhance the competencies of the public health work force to perform the core public health functions.

10. The Department and local jurisdictions should participate in the development of the Health Services Information System, a central integrated repository of data on personal and community health that will serve as a resource to local public health jurisdictions and other entities.

Financing

11. The Department of Health should explore ways of minimizing the negative effects of changes in local government public health financing, including a possible short term subsidy to local jurisdictions while it develops other sources of funding. Such a strategy may be needed — depending on the recommendations of the Tri-Association study and subsequent decisions by the Legislature — because the change in the motor vehicle excise tax (MVET) allocation (see finance and governance recommendations, Chapter 4) will have an unequal effect on local public health jurisdictions and cities across the state.

12. The Department of Health should provide financial incentives to local health jurisdictions to encourage collaboration among state and local health jurisdictions and other community-based public health agencies (see definition of Category B jurisdictions, finance and goverance recommendations, Chapter 4).

13. The Department of Health should develop a contract and financial tracking system to provide accountability for contract funds to local health jurisdictions and to determine cost effectiveness of public health investments.

Clinical personal health services transition

14. For the 1995-97 biennium, current public health funds supporting clinical personal health services should remain in the public health system. The reasons for this recommendation include:

- Responsibility as a "safety net" provider during transition: The phase-in of Washington's health reform means that the entire population will not have insurance coverage for the uniform benefits package until 1999. In addition, the state does not yet have congressional authority to implement the employer mandate provisions of the reform law. Therefore, the public health system should continue to be a safety net provider for people who do not yet have coverage and are not eligible for Medicaid and the Basic Health Plan, or are otherwise unable to obtain needed care.
- Synchronization during transition: Successful transition of responsibility for clinical personal health services will require synchronization with the development of certain key components of health reform, including certified health plan standards and quality improvement plans, assessments of health plan enrollee health status, broad-based community wide health assessments, and the Health Services Information System.
- On-going community protection against vaccine-preventable diseases: While the uniform benefits package is intended to cover many immunizations, the phase-in of coverage will leave many individuals (and therefore their communities) unprotected. The public health system should continue to finance and distribute vaccine, and administer some immunizations over the next biennium. As health plans provide greater proportions of immunizations, public health jurisdictions should also develop collaborative arrangements among health plans, public health, child care organizations, and schools to increase access and eliminate barriers to childhood immunization.

- On-going prevention and control of communicable disease: Clinical personal health services related to communicable diseases — including testing, physical examination, and patient counseling and education — are linked to the population-based public health activities that control the spread of communicable disease (for example, contact tracing, partner notification, and follow up exams and counseling/education related to sexually transmitted diseases). In addition, significant costs may be saved if confidential, accessible clinical service alternatives for sensitive services are available for people who might not seek such services from a primary care provider (e.g., reproductive health services for adolescents, HIV counseling and testing, and sexually transmitted disease treatment and follow-up).
- On-going assurance of family planning and reproductive health services: Barriers exist to using family planning and reproductive health services in a regular and timely fashion, especially for youth. These services will be covered in the uniform benefits package and provided through certified health plans. However, communities bear high costs when these services are not used when needed. Therefore, multiple, confidential options for access must exist.

15. The Department should work closely with local public health jurisdictions, the Washington Health Services Commission, and certified health plans to monitor the transition of clinical personal health services from public health to private health coverage.

Legislation

16. The Department of Health should review the Revised Code of Washington (RCW) and Washington Administrative Code (WAC) to identify the statutes and codes related to public health, and make recommendations about what changes need to occur to implement the next PHIP due December 1, 1996.

17. The Department of Health shall evaluate whether or not legislation is necessary to implement the PHIP vision of a new framework for public health in Washington based on the capacity standards.

Evaluation of the 1994 PHIP implementation

18. The 1994 Plan should be evaluated as it is implemented, because the Legislature intends it to be a continuous process. The evaluation will help adjust strategies to meet the needs of a changing environment and determine the focus of the succeeding PHIPs. Since the ultimate goal of the PHIP is to protect and improve the health of Washington citizens, the evaluation should involve assessing progress toward the outcome standards discussed in Chapter 3 and presented in

Appendix A. However, the success of the 1994 PHIP cannot be assessed solely on the basis of health status, because core function capacity will take six years to develop; and there is a lag time between increasing capacity and improving health outcomes. In addition, other providers must also play an active role to achieve improved health outcomes. The evaluation of the 1994 PHIP should include the following:

- The Department of Health and local public health jurisdictions should jointly develop and implement performance criteria to assess progress toward meeting state and local capacity standards and implementing finance and governance changes.
- The Department of Health and local jurisdictions should develop and use state and county level indicators to monitor progress towards achieving outcome standards.
- State and local jurisdictions should evaluate whether to revise: the six-year timeline to bring the public health system up to capacity; the key public health problems, capacity standards, and outcome and threshold standards; and the estimate of increased financing required to bring the public health system up to capacity.
- The Department of Health should monitor the development of collaborative relationships among public health agencies, and evaluate if financial incentives are adequate to increase system efficiency, based on the recommendation in Chapter 4. The Department should evaluate the development of partnerships with community organizations, certified health plans, and health care providers.
- Based on an improved financial accounting system, the Department of Health should oversee the non-supplantation of local government funds, the use of "new" state funds, the level of dedicated financing, and the effects of performance based contracting.

The next Public Health Improvement Plan

19. The Department of Health and local public health jurisdictions, along with their stakeholders and constituencies, should participate in a process for developing the next PHIP. The process should include the following activities:

- The next PHIP should describe the relative responsibilities of the Department of Health and the State Board of Health in meeting the capacity standards assigned to the state in Chapter 3 of the 1994 PHIP.
- The Department of Health and the State Board of Health should determine the need for a single biennial public health document and study matters pertaining to rule-making, policy development, relationships among official public health agencies, and other similar matters of concern, and should make recommendations to the Governor and Legislature.

- The next PHIP should address the relative roles of and the relationships among the State Department of Health, other state executive branch agencies with responsibilities for public health or health activities, and local public health jurisdictions.
- The next PHIP should address the relationship between the state Department of Health and federal public health-related programs, including any waivers that may be needed from the federal Public Health Services Act to fully implement the PHIP. The next Plan should also evaluate the effect of any health system reform legislation enacted by Congress.
- The next PHIP should address relationships and strategies for collaboration among local public health jurisdictions and certified health plans, including local contracting for the delivery of clinical health services and activities to meet capacity standards.
- The next PHIP should continue to refine capacity and outcome standards as needed, including implementing the requirements for standards mandated in the youth violence legislation of 1994 (E2SHB 2319).

1995-97: Investment

To carry out the recommendations presented above, a total of $52.5 million in new state funds should be invested in Washington's public health system for the 1995-97 biennium: $17.5 million for fiscal year 1996 and $35 million for fiscal year 1997. The main purpose of these funds will be to ensure that state and local jurisdictions make significant progress in the 1995-97 biennium toward meeting all the capacity standards by the year 2001. The majority of the funds would go to local health jurisdictions.

Local core function capacity

The PHIP establishes capacity standards to be met by all local health jurisdictions. These standards describe the type of system that must be in place in every community to assure that public health protection is maintained and that the system is capable of providing the information needed for making informed decisions about how to best use public health funds. The plan recommends that additional state funding be made available to local jurisdictions to achieve the capacity standards and address locally identified public health concerns. These funds would be flexible, rather than categorical. Local jurisdictions would be accountable for implementing the plan, achieving capacity standards, and making measurable improvements toward specific health objectives.

Distribution of the flexible local core function capacity funds would be according to a formula that considers some of the factors that affect local needs, including population, variation in assessed property value, a base amount per jurisdiction, and incentives for collaboration.

State core function capacity

New funds for state core function capacity will focus on improving health assessment, health promotion, and service access and quality. There will be some emphasis on development of state and county level health indicator data to measure progress toward outcome standards, plus development of performance criteria related to the capacity standards. Some of the resources will be used to develop the necessary contract and financial tracking system to oversee efficient, effective use of funds, with attention to the effects of performance-based contracting, the level of dedicated financing, and non-supplantation of local funds.

Information systems

Integrated public health information systems are essential for analyzing data, conducting community assessments, evaluating effectiveness of prevention programs, and monitoring progress toward health status goals. New state funds will finance a computer network linking all local public health jurisdictions and the state Department of Health, enabling swift, efficient communication throughout the state. This will assist state and local public health jurisdictions in assessing health status and developing policies for addressing locally identified key public health problems. The new funds will support development and implementation of an integrated data plan for the important but separate systems that now provide critical data for health assessment, including the vital records system, the hospital data system, and several disease reporting systems.

Community Health Assessment and Mobilization

The health assessment process would be carried out in all communities. The scope of these activities would include both an analysis of health status indicators and a review of the community's resources in the public health and health care system. Many communities, however, have almost no capacity for doing a community health assessment. There is no systematic health planning structure in place in the state which might carry out community assessment. All local decisions about how to most effectively deploy public health resources will depend on having accurate information about communities' health-related strengths, weaknesses, and resources.

This process will require a significant amount of staff time and the involvement of many community partners. Maintaining assessment activity over time will require staff and community involvement and is necessary to realize and measure improvements related to public health investments.

Training

The availability and use of community health data are critical to developing public health policy and managing programs. The basic science underlying the collection, analysis, and interpretation of such data is epidemiology. However, there is a nationwide shortage of public health professionals trained in epidemiology, and this shortage is most keenly felt at the state and local level.

This training will be a joint effort of the Department of Health, local health jurisdictions, and state educational institutions. This plan is intended to broaden access to and refine training in the public health core functions, and especially in epidemiology and health assessment activities. It is intended to address three principal areas of need: training and support for state and local professional staff, training of future professionals, and incentives for attracting and retaining professionals.

The first five chapters of this plan have discussed the public health system in Washington and how it might be improved. Chapter 6 offers a case study of how the plan is now being put into action to address one of the major public health problems of our time--youth violence.

Public Health Approach

Community

Protective Factor

Data Youth

Chapter 6

Youth violence prevention: A case study of PHIP in action

Not work

Youth violence is a serious and growing problem in our nation and our state. The majority of violent crimes are committed by teenagers and young adults, and the average age for violent offenses is declining. Violent crimes by young people under 18 have more than doubled in the past ten years despite a slight decrease in this population.[1] And increasingly these crimes are inflicting their greatest toll among youth. Homicide is the leading cause of death among African-American males under 19.[2] Suicide is more likely to lead to a teenager's death than any other cause except a motor vehicle crash.[3] Sexual assault, which often goes unreported, claims more victims among the 15-17 year old girls than any other group.[4]

Data that report violent acts committed by youth separately from general crime statistics are not consistently available across the state. In general, however, we know that violent crimes occur in variable and sometimes unexpected patterns throughout our state. King, Pierce, and Yakima counties have some of the highest in rates of homicide, aggravated assault, and rape, but, rural counties such as Chelan, Asotin and Ferry each rank near the top in at least one major category of crime. Specific cities, towns, and even neighborhoods can be especially hard hit. For instance, three small towns in Eastern Washington had the highest rates of aggravated assault for the three year period from 1989 to 1991.[5]

The costs of responding to the increasing rates of youth violence are taking a large bite out of the tax dollar. The cost of detaining a youth for one year in a state or county juvenile justice facility is $55,000, nearly four times the cost of one year's education at a state university.[6] In 1992 the criminal justice system spent an estimated $60 million, not including the cost for police, for murder, aggravated assault and rape convictions.[7] The greatest costs, however, are to the individuals and families who are the victims and to the communities which are losing their sense of safety and well being.

What can be done to reverse the trend of increasing violence among young people? How can our limited state and local resources be most effectively used? Should more jails for teenagers be built, or is there a way to prevent this problem?

Taking a public health approach

Violence affects individuals, neighborhoods and entire communities. Similar to a communicable disease, violence affects some groups and segments of the population more severely. Violence varies by locale, by age group, and by gender, as well as over time. The causes of violent behavior are complex and intertwined with many social factors.

When I send my child off to school....

No one is immune to the threat of violence. Recently, a mother of a five-year old daughter just starting kindergarten had to face it. Less than one week into school, her daughter brought home, along with her artwork, a notice of a convicted child molester in the area, who "offends in the vicinity of the school". A few days later, at parent information night, the new principal spent the first half of her welcoming speech on safety. The school campus sits adjacent to a park where there is gang activity; the outside doors leading into the school are not locked during school hours, so anyone could enter at anytime; and the children's clothing must be carefully chosen so as to not incite gang retaliation. The principal asked parents to join a committee to make the school a more secure campus.

For a mom, who was expecting to be pressed into PTA committee work and learn of the exciting year ahead for her child, the message was especially sobering. Instead of bundling her daughter against the cold, she must bundle her against injury, in "safe" colors and styles. Instead of sending her child into a world of promise and potential, she must temper her enthusiasm with warnings of dangerous strangers that hurt children. And, instead of signing up for the PTA committee, she has the option of joining with other parents to transform the school campus into a fortress against the threat of violence.

One of the challenges facing community networks will be to turn the concerns and fears of parents into energy and commitment for preventing the root causes of violence. Through the PTA and other community organizations, parents can have a voice in their community plan to prevent youth violence.

Taking a public health approach to youth violence involves carrying out the core functions of health assessment, policy development, and assurance so that action is being taken to prevent the problem. By establishing this framework, public health can help make the most effective use of resources to counter the problem of youth violence.

Assessment: The first step is to conduct a thorough assessment of the problem. For a complex and multifaceted phenomenon like violence, the assessment will be key to shaping a community's response. A health assessment for youth violence must be specific to the community and identify segments of the population most affected. The information must be analyzed by professionals and community members and reported to the community in a useful manner. The assessment process needs to be on-going and evaluate the changes that occur as a result of prevention activities and other conditions in the community. Data must be collected and reported in a standardized manner so that comparisons across communities in our state will be meaningful.

Policy development: The policy decisions that determine our investment in reducing youth violence must be influenced by the health assessment process. Without health assessment information, a community's response is susceptible to being shaped by political agendas and inaccurate perceptions. The policy development process must involve all members and sectors of a community in a discussion that leads to a consensus about what must be done to prevent and reduce the effects of youth violence.

Prevention: After community priorities have been set and strategies identified, the role of public health is to help mobilize the resources necessary to carry out the strategies.

Successful prevention strategies need to be directed at the factors which precede and contribute to the violent actions. The prevention strategies should include approaches that will reduce the risk for violence among those groups and segments of the population most at risk to develop problem behaviors. However, the interventions might include community-wide changes in policies, programs and services that extend beyond the high-risk groups themselves. The causes of violence are complex. Prevention efforts aimed at youth, especially ones targeting young children, take many years to demonstrate their positive impacts.

Our understanding of violence, its causes and cures, is in its infancy. The sophisticated monitoring for traditional public health problems, like sexually transmitted disease, is lacking for youth violent behaviors. The conditions that put a youth at risk for violent behavior are only now being studied and defined. While collaboration between public health, social services, schools, criminal justice, and citizen groups has just begun, this collaboration is the foundation for effective, community-based prevention.

Youth violence legislation

The youth violence legislation of 1994 (E2SHB 2319) represents a state policy effort to take a public health approach to youth violence and other problems related to violence (e.g.; high school drop outs, teen pregnancies). The legislation defines specific roles for state and local public health. The Department of Health, through the PHIP, is designated to describe the factors which are scientifically related to youth

Assessment: Getting the accurate picture

Three reports, by state and local public health agencies, published within the past year start to fill the information gap about violence. The state Department of Health, in late 1993, published "A Preliminary Assessment of Violence in Washington State", which breaks down the data by age, gender, race/ethnicity and location. In October 1994, the Department of Health released the "Preliminary Report for Community Networks: Youth Risk Assessment Database". This report provides data on risk factors such as rate of high school dropout and teen births for the community networks.

The Seattle-King County Department of Public Health published a comprehensive report on youth violence in March 1994. "Too Many, Too Young: Violence in Seattle and King County" provides information on rates of major violent crimes and risk factors such as child abuse, domestic violence, and firearm use. This report draws data from a variety of sources and is currently the most comprehensive public health assessment on youth violence.

violent crimes and to define the standards needed to evaluate associated health status outcomes, such as teen pregnancy or suicide attempts. The vision of the legislation is that public health, at the state and local level, will take a leadership role in assessing rates of violence related behaviors and the associated factors leading to those behaviors, and then to inform and assist communities to reduce those behaviors.

The youth violence legislation will give greater authority to communities to decide how to use those funds and could redefine many of the funding categories of youth social services. In that respect, it is consistent with the PHIP, which shifts resources toward building public health system capacity rather than structuring services around specific health problems. By identifying risk factors for youth violence, the PHIP will set the stage for comprehensive, prevention-oriented planning at the community level. The legislation mandates the creation of Community Public Health and Safety Networks, referred to as community networks, which will become the violence prevention planning vehicle in each community. Throughout the state, each community will have a have a violence prevention plan based on accurate information and citizen participation.

The state Department of Health role

The state Department of Health will become a clearinghouse for violence information which will be disseminated to the communities through local health departments. In cooperation with other state agencies, the Department of Health has developed a base of information on youth violence and associated risk factors, and will publish an annual report on violence. The report will present a statewide assessment of violence and its related outcomes, as well as detailed assessments by community network jurisdiction.

In summary the Department of Health's role in the youth violence prevention legislation includes:

- Coordinating state violence information.
- Issuing annual reports on acts of violence and associated risk and protective factors.
- Setting standards for the gathering, reporting and use of assessment information in the community planning process.
- Providing technical assistance to local public health jurisdictions in conducting assessments and in assisting the community networks in planning.
- Through the PHIP, recommend measurable standards for health status outcomes related to violence
- Through the PHIP recommend standards for collection and analysis of data on violence related risk behaviors and protective factors.

In addition to these activities, the Department of Health will participate as one of five state agencies on the State Family Policy Council. The council has the primary duty of implementing the legislation. The Department of Health will participate in interagency agreements, which ensure more coordinated services at the local level, and promote access to more consumer oriented services.

Local public health jurisdictions role

Given the variable nature of violent behavior across the state, local efforts in collecting and analyzing data are needed. Local public health jurisdictions will have shared

Family Policy Council and Community Health and Safety Networks

The Family Policy Council was created in 1992 by the Family Policy Initiative. The council is charged with implementing and overseeing the Family Policy Principles, which emphasize that state services should be: family and customer oriented, culturally relevant, locally planned, coordinated, community and outcome based and creative.

The council is a ten member body including the Superintendent of Public Instruction, the Commissioner of the Employment Security Department, the Secretary of the Department of Social and Health Services, the Secretary of the Department of Health, the Director of the Department of Community, Trade and Economic Development, two members from the House of Representatives, two members from the Senate and on representative from the Governor's Office. The council has primary responsibility for implementing the youth violence legislation. The plans, developed by the community networks for preventing youth violence and related problems, are subject to Council approval.

The Community Public Health and Safety Network is the local planning entity for the youth violence prevention. A network is responsible for creating a comprehensive violence prevention plan, and leads the effort of resource development and service coordination. Networks are made up of 23 members—13 citizen representatives and 10 members from local government and agencies. Membership is approved by the state Family Policy Council for 3-year terms. Each network is affiliated with a public agency, such as a school district or health department, for fiscal purposes. The Family Policy Council has approved 53 networks in Washington State. The majority of the networks represent a population of over 40,000, as the law stipulates. Some rural counties and Indian Tribes have established networks representing smaller populations.

responsibility for developing that assessment capacity and carrying out those activities. The community network members will collaborate with local public health jurisdictions to interpret and use the assessment data provided by the Department of Health. Local public health jurisdictions will play a primary role in disseminating that information to community organizations and local media. The networks' comprehensive prevention plans need to be reviewed by the local public health jurisdiction for consistency with the standards for assessment and policy development.

Public health capacity in youth violence prevention

In order to protect communities from the health threat of youth violence, state and local public health jurisdictions must be capable of carrying out the core functions. The PHIP, in Chapter 3 of this report, has defined the core public health functions in 88 capacity standards. The standards are explicit statements of what state and local health agencies must do to adequately protect and promote health, and prevent disease and injury. With full implementation of the PHIP capacity standards, the public health system in Washington will have an improved capacity to effectively monitor, anticipate and respond to health threats and problems.

The youth violence legislation directs state and local public health to play specific roles in the overall response to reducing and preventing youth violence. Those roles fall primarily into the categories of health assessment and policy development. For example, the legislation directs local public health jurisdictions to conduct assessments of violence related behaviors and risk factors in their community. That activity falls under the capacity standard for all public health jurisdictions to "conduct a regular community health assessment using a standardized format."

The next step in turning the capacity standards into action will be to include them in the performance-based agreements for both state and local public health agencies. These agreements will guide the six year implementation of the PHIP and the overall enhancement of the public health system. The result of these enhancements will be an overall improvement in a community's health status as defined by the PHIP outcome standards. Several of the outcome standards, which are listed in the Key public health problems in Appendix A, are specific to youth violence and the related problem behaviors. In the future, additional standards will be recommended for the identified risk and protective factors. The outcome standards will become the yardstick for evaluating the effectiveness of the prevention activities carried out by the community networks.

Factors related to youth violence

One aspect of the youth violence legislation requires the Department of Health to conduct a thorough review of the research on youth violence. The review is for the purpose of identifying behaviors associated with youth violence and conditions which put youth at risk for developing violent behavior. These latter conditions are referred to as risk factors. The complete review, which has been conducted by the Department of Health, is a separate document titled, Youth Violence and Associated Risk Factors: An Epidemiologic View of the Literature.[8] This section includes major findings from that document.

Options for local public health jurisdictions

Local public health jurisdictions will play a key role in communities' efforts to prevent youth violence. By law, they are required to gather and report assessment information and to assist community networks with the prevention planning. In addition, there are several opportunities for a local public health jurisdiction to become more involved with a community network:

- Perform local assessment projects of special interest to the community or at the request of a community network.
- Participate as a member of a community network.
- Act as the fiscal agent for the community network.
- Collaborate with other agencies and organizations as a provider of violence prevention programs.
- Develop a consultive relationship with the community network based on expertise in assessment and prevention.

Risk factors for youth violence

The identification of risk factors is a critical step in prevention. To prevent a problem from happening, the factors contributing to the problem need to be known. Once the risk factors are identified, a variety of actions may be taken to reduce their influence on the individual youth, as well as on the entire community. Most individuals, who display habitual aggressive behavior during adolescence, develop this behavior during early childhood. Effective interventions begin in preschool or earlier.

Youth violence covers a range of deviant behaviors from simple assault to rape and homicide. Most research does not look at separate types of violent acts, but rather at factors associated with the development of delinquency or violent behavior in general. The research indicates that violent crime typically follows less serious offenses such as burglary.

The risk factors related to the development of youth violence are complex and interconnected. For example, poverty, a major risk factor for youth violence, is associated with a variety of social ills including parental substance abuse, criminality, and child abuse. Some risk factors, like parental criminality, are predictive of youth violence. Predictive risk factors have been shown by research studies to occur over a period of time preceding the development of violent behavior. Other risk factors, like availability of handguns, are associated with youth violence. Associated factors have been found to be interrelated at a single point in time. The combined effect of two or more risk factors, such as parenting problems, low income and parental criminality, appears to be even more important than any single risk factor.

The following is a summary of risk factors and their relationship to youth violence.

- Economic and social deprivation: Poverty, overcrowding, and poor housing are associated with an increased risk of childhood conduct problems, including delinquency and violent behavior. Also, urban neighborhoods with high crime and mobility rates have higher delinquency rates. There are a number of different theories explaining these relationships, including theories that focus on the effects of stressful life circumstances, sociocultural patterns, and family characteristics.
- Family history of substance abuse and/or crime: Criminal behavior and alcoholism, especially by the father, are two of the most consistently demonstrated factors that predict conduct disorders in childhood and adolescence. The importance of these factors may be that they are associated with less positive parenting practices.
- Parenting factors and parent-child attachment: Lack of effective parenting and parental rejection are some of the most important factors predicting juvenile delinquency. Maladaptive parent-child interactions, such as excessive discipline, during preschool and early elementary years have been linked to serious conduct problems during childhood and adolescence. Poor infant-childhood attachment to the primary caregiver has been linked to preschool aggression.
- Victimization by physical or sexual abuse: Violence in the family of origin predicts the development of adolescence violence. Boys who have been sexually abused are more likely to become violent, whereas girls are more likely to become depressed and self-destructive.

Risk and resiliency

Risk factors are individual characteristics or characteristics of family, school or community environment which increase the probability of the development of problem behaviors. Some common risk factors for adolescent problem behaviors include alienation and rebelliousness, family conflict, academic failure in elementary school, and availability of drugs and firearms. If risks in a young person's life can be reduced, the chances of preventing problem behaviors increases. Many problems share common risk factors, so reducing common risk factors can have a multiple effect. Exposure to more than one risk factor greatly increases the chances for problems. Protective factors counter risk factors. For instance, a community enacting an ordinance to prohibit the sale and advertisement of alcohol and tobacco near schools could affect the availability of those substances and establish stronger norms against underage use of those substances.

Some studies have looked at children who have not developed delinquency problems although they have been exposed to several risk factors. The overall picture is one of a resilient child who is even tempered, above average in intelligence, more autonomous, has a good relationship with at least one adult, and more involved in school. A resilient child is more adaptive and flexible to the social environment and able to elicit positive responses from others.

- Observation of domestic violence also predicts the development of violent behavior. The more a person has been subjected to physical violence and the more life-threatening that experience was, the more likely the person is to commit "expressive" violent acts (murder, rape, unprovoked assault).
- Early conduct problems: Childhood hyperactivity and conduct problems (such as fighting, cruelty and firesetting) are strong predictors of adolescent aggression.
- Academic failure: Poor school performance is strongly predictive of increased risk for violence and other problem behaviors. Truancy is also predictive of later delinquency.
- Substance abuse: Drug use by adolescents is often preceded by other delinquent behaviors and does not appear to be a causal factor in the development of youth violence. Alcohol and some other drugs can increase the chance of reckless and impulsive behaviors in individuals with a tendency toward violence. Drug trafficking and support of addictive habits are also associated with violence.
- Gang affiliation: Gang members commit more crimes and more violent crimes than non-gang members. However, gang membership is usually preceded by delinquency and is associated with other risk factors.
- Possession of guns: If a gun is easily available, a violent act is more likely to be fatal. The presence of a gun in the home has been associated with teen suicide.

Protective factors

Protective factors are aspects of peoples' lives which reduce the likelihood of negative outcomes, either directly or by reducing the impact of risk factors. Protective factors are both individual attributes and conditions related to the social network of family, community, and school which supports children. In many respects, the social network has deteriorated over the past 40 years, and community life has grown more fragmented. Many of the connections that have bonded families to neighborhoods, schools, and other social systems are now missing. Youth violence and related problem behaviors, such as teen pregnancy, school failure, and substance abuse have increased as the social network to support children has diminished.

Despite considerable risk, some children do not become delinquent. A single protective factor, such as a positive relationship with a caring adult, can counteract the effects of a generally high-risk environment. Many protective factors are the "other side of the coin" of risk factors, such as high academic achievement, positive parental relationships, and early trustworthiness and ability to feel guilt. Many risk and protective factors exist along a continuum, and successfully promoting a protective factor may simultaneously reduce a risk factor.

The following is a summary of protective factors which are associated with a reduction in the development of violence and related problem behaviors.

- Individual characteristics: Children with a sociable temperament, average or above intellect, and competency in communication skills are at a reduced risk of adolescent delinquency.
- Family supports: Family factors, such as having clear rules and expectations for children, showing respect for a child's individuality, maintaining a stable and cohesive environment and parents who are emotionally supportive of their children, are associated with reduced rates of youth violence and other problem behaviors.

The home visit of the 1990s

Violence is a new health threat to families that can be dealt with by the traditional public health nurse home visit. Recently, public health nurses in Whatcom County noticed, during home visits, that firearms were visible and accessible (in some cases, on coffee tables) in their clients' houses. The nursing supervisor contacted the sheriff's department for advice and eventual training to familiarize the nurses with firearms and safety issues. The health department then conducted a survey of families it serves and made a disturbing discovery. Of the 366 families completing the survey, 45% indicated they had firearms (evenly divided between handguns, rifles, and shotguns) in their household. Of those that had firearms, 24% keep the guns loaded, 26% store ammunition with the gun, and 65% do not use a gun safe or a gun lock. Further, 44% of the gun owners have not received any firearm safety training, and 73% of the children with guns had no training.

The health department recognized that the risk of unintentional firearm injury existed not only for the children within these households, but also for their young friends and relatives. The public health nurses are now, as part of the home visit, educating the parents on how to protect their children from guns in the home. The department has also applied for grant money to purchase trigger locks for distribution to families.

- Community supports: In addition to the family, emotional and social support to children can be provided by other parts of the social network, such as schools, churches and neighborhoods. A caring relationship with an adult neighbor, church involvement and a school which rewards individual competency are examples of protective factors against adolescent delinquency.

Problem behaviors related to youth violence

Adolescence is frequently a period of rebellious acts. Only a small proportion of youth are involved in frequent and serious violence, and this same group is often involved in other problem behaviors as well. Problem behaviors, such as substance abuse and early sexual involvement, share risk factors. Therefore, programs designed to reduce those problems can have a similar effect on reducing youth violence.

The following problem behaviors, specified in the youth violence legislation, have been studied and associated with youth violence. The Department of Health has developed standards for these behaviors that can be used as outcome measures of a community's health status. The literature review has identified risk factors for these problem behaviors.

- Substance abuse: Community factors influencing teen substance abuse include laws, community norms, and availability of alcohol and other drugs. Familial factors include parenting practices (such as lack of supervision, inconsistent discipline, and unclear expectations), family conflict, poor emotional attachment, and parent's alcohol and drug behaviors and attitudes. Individual factors include early and persistent problem behavior, alienation and rebelliousness, low commitment to school, and academic failure.
- Teen pregnancy and male parenthood: Poverty, low academic achievement, and increased rates of child abuse have been linked to teen pregnancy. Nearly two of every three teen mothers experienced sexual abuse prior to their first pregnancy. Teenage fathers have more involvement with police and more school problems than their peers.
- Suicide and suicide attempts: The best single predictor of teen suicide is a previous suicide attempt. The vast majority of adolescent suicide victims have suffered from psychiatric illness (generally depression, conduct disorder or antisocial personality disorder) or substance abuse. Family factors include a history of suicidal behavior by the parents, and physical and sexual abuse of the child. Access to a firearm in the home has also been identified as a risk factor for suicide.
- Dropping out of school: This problem behavior is associated with a number of risk factors linked to delinquency, such as poverty and lack of parental support. School quality issues such as small class size and high teacher-student ratios decrease the likelihood of dropout.
- Child abuse and neglect: Child maltreatment has been linked to a number of factors including low income, inadequate housing, substance abuse, history of being abused as a child, and lack of parenting skills. It has also been linked to characteristics of the child, such as illness or behavioral problems in childhood.
- Domestic violence: Similar to child abuse and youth violence, domestic violence is linked to violence in the family of origin, poverty, and substance abuse. Pregnancy is a high-risk period for abused women. Separation and divorce often increase the risk of assault.

Guns

Guns were the weapon of choice in three out of four of the 25,000 murders in this country last year. The state Department of Community, Trade and Economic Development publication "The Face of Violence" notes that adolescent deaths from firearms have been rising steadily since the mid 1980s, and now account for one of every five teen fatalities. Guns are used in half all suicides. Guns are easily obtained in the U.S., and Washington's teens are purchasing guns on the street for as little as $50, according to law enforcement officials. A survey of Seattle high school students indicates that a third of the students have easy access to guns. In Tacoma, a pawn shop directly across the street from the main entrance of a high school advertises "new and used guns" in large block letters. Guns stolen in residential burglaries are a major source of illegal guns available on the street.

Taking action to prevent youth violence

Can anything prevent violence among youth? Many promising programs and interventions are already being carried out in communities across the state. Some of these programs are statewide and well established, such as Head Start and ECEAP (Early Childhood Education and Assistance Program). Other programs, which may exist in only one neighborhood, have emerged from the actions of creative and dedicated citizens and professionals. Some programs, like parenting education, are intended to prevent problems from ever occurring. Other programs, like conflict resolutions skills training, are for youth already identified as high-risk.

Program evaluations have identified typical qualities of effective prevention strategies. In most cases, promising programs have an effect on several risk and protective factors. They are comprehensive and involve collaboration between several social and health service organizations. Promising programs also involve the community in the planning and operation. Evaluating program outcomes is critical for future funding and replication decisions. The youth violence prevention legislation and the PHIP bring these qualities together and create a structured and planned opportunity to make our communities safer and healthier places.

Most prevention efforts in youth violence can be classified into one of the four following categories.

- Family-based programs: Many risk factors are linked to early childhood experiences in the family. Family-based programs support both the development of functional family units and the networks outside the immediate family which can give assistance in times of crisis.
- Community-based programs: Some research has indicated that neighborhoods impact the behavioral choices young people make. Programs which make communities more "people friendly" can have strong impact on building a protective environment for youth.
- School-based programs: School has a greater influence on children and youth than any other public institution. Schools can be a force in bringing the family and the neighborhood together and offer relevant skills training for youth and adults.
- Individual-oriented programs: Learning positive social and emotional coping skills can help teens deal with conflict and other problems. Programs that enhance self-esteem, communication skills, anger management, and school performance for children and youth can reduce their risk for aggressive behavior, substance abuse, suicide, and dropping out of school.

A look to the future

Both the PHIP and the youth violence legislation are in the early stages of development. As they are implemented at state and local levels, there will be a need to closely evaluate their progress and make necessary modifications. The problems associated with youth violence will change over time. Research will continue to provide more definitive information about the risk and protective factors. And local community health assessments will provide better information for tailoring prevention programs to population groups.

Teens teaching kids

The Southwest Washington Health District has operated a peer education program directed at preventing sexually-transmitted diseases, including HIV/AIDS, for the past two years. Recently Clark County's Youth Investment Fund has provided financing for the addition of violence prevention. Twenty students from all of the area's high schools have been selected to participate in the 1994-95 program. The students receive intensive training in communications skills and in the technical information relating to the subjects they address. Assisted by a drama coach, the students have written a number of short plays, dramas, poems and songs delivering strong messages directed at the prevention of violence, abstinence from drug and alcohol use, and postponement of sexual activity. Presentations are given to area elementary, middle and high schools and a large number of civic and community organizations.

The vision

"...We see a nation in which every child has an opportunity to reach his full potential, a society where every child...can imagine a bright future, bounded only by his or her own talents and aspirations...We see a nation that values human dignity, character, and citizenship and conveys these common values to its children through individual conduct and public actions...We see a nation that puts its children first...It is a nation in which the devotion each parent feels toward his or her own child is expanded to include all of America's children." National Commission on Children.

The social conditions which have led to the current youth violence problem, even with coordinated planning and action, will take years to correct. The PHIP and the youth violence legislation establish the framework for taking the most effective action. The entire process will be closely watched by government, community agencies and citizens. As public health jurisdictions and communities work together to address youth violence, they will be performing an important test of the effectiveness of the principles and standards set forth in the PHIP.

1. *Juvenile Justice Report. 1992: Governor's Juvenile Justice Advisory Committee.* Prepared by Juvenile Justice Section; Olympia, Washington. Government Printing Office, 1993

2. *The Face of Violence: Washington's Youth in Peril.* Washington State Department of Community Development; Olympia, Washington. 1993

3. "Kids and Guns", *View Magazine*. DeClaire, Joan. September/October 1992. Group Health Cooperative.

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5. *A Preliminary Assessment of Violence in Washington State.* Washington State Department of Health, Injury Prevention Program; Olympia, Washington. 1993

6. *House Appropriations Committee Staff August 8. 1994 Document for Juvenile Justice Task Force.*

7. *The Turning Point: Choosing Alternatives to Violence.* Washington State Department of Community, Trade and Economic Development. 1994

8. *Youth Violence and Associated Risk Factors. An Epidemiological View of the Literature*. Washington State Department of Health, Non-Infectious Disease and Conditions Epidemiology Section. Olympia, Washington. 1994

Appendix A:

Key public health problems

Introduction

Most people are familiar with health problems on an individual basis. Even if they have not been directly and personally affected by cancer, heart disease, injuries, measles, herpes, hepatitis, or food poisoning, they probably don't have to look too far in their circle of family and friends to find people whose lives have been tragically altered by such problems.

These are not just personal, individual health problems, however. They have wide-ranging impact on people in families, neighborhoods, workplaces, classrooms—any setting in which people come together and interact. The physical and emotional effects of these problems can extend far beyond the individual who is most primarily affected. These are, therefore, public health problems. The ways in which we treat them, and even more importantly the ways in which we prevent them, must pay attention to this public side of health.

This appendix to the Public Health Improvement Plan discusses thirty-nine key public health problems in five general areas:

- Infectious Disease
- Non-Infectious Disease
- Violence and Injury
- Family and Individual Health
- Environmental Health

The causes of public health problems are in some cases clear and unmistakable; in other cases they are complex and not completely understood. Since public health problems affect not just individuals, but entire neighborhoods, communities, and populations, their effects are not uniform throughout the state. Some locales and some groups of people are more severely impacted. For these reasons, the approaches to solving some of these problems can be complicated and subject to serious debate.

The key problems discussed here are by no means the only ones which should receive public health attention now or in the future. They are, rather, a representative sample of current, persistent, preventable problems that have been identified as significant in many communities throughout the state. For each of the 39 problems, this appendix contains background materials, standards, and possible interventions.

Outcome standards

The connections between public health activities and health improvements are difficult to quantify on a case-by-case basis, especially since there are other major influences on health, including behavior, medical care, and socioeconomic factors. The Public Health Improvement Plan, nevertheless, sets long term objectives, or outcome standards, for improved health status of the people who live in Washington State, at the same time recognizing that the public health system is not, and should not be, solely responsible for achievement of these objectives.

The outcome standards are long-term objectives, generally for the year 2000. They define optimal, measurable future levels of health status, maximum acceptable levels of disease, injury, or dysfunction, and in some cases the degree to which a particular service or program is operational. Many of the outcome standards in this appendix are identical in subject matter to the national year 2000 health objectives contained in Healthy People 2000. The actual quantitative objectives for Washington will most often be different from those for the nation, since the baselines are usually different.

Threshold standards

Thresholds deal with exactly the same subject matter as outcome standards. They most often define death rates or levels of illness or injury in a community or population which, if exceeded, may signal alarms for action. The initial response to exceeding a threshold is not immediate intervention, but rather a closer look at the situation to determine what may be occurring. Additionally, a threshold is a way of measuring if there is reasonable progress toward an established outcome standard.

There are two types of thresholds: trend-based and group-based.

> Trend-based thresholds (same population, different years). This type of threshold is a measure of progress toward a target, over time, for a given population. It compares data for a given year to an expected or desired value for that year. The most straightforward way to establish the expected or desired value is linear interpolation between a baseline data point and the outcome standard. This gives a series of expected data points for each intervening year. The determination of whether a threshold has been exceeded for a given year involves applying statistical tests to see if the actual data point differs significantly from the expected data point.
>
> Group-based thresholds (same year, different populations). This type of threshold measures how one group is doing compared to one or more other groups during the same time period. Usually it measures whether a rate for a sub-group is significantly different from the rate for the population as a whole. The sub-groups are often specific racial or ethnic groups. They may also be the entire populations of relatively small geo-political areas such as counties.

The concept of threshold standards is a new one that is still being developed as part of the Public Health Improvement Plan. The intent is to develop methods of applying the concept that can be used by public health jurisdictions throughout the state. Appendix B has more detail on how to establish thresholds and determine whether they have been exceeded. There is also a detailed discussion of some recommended statistical methods, including calculation and use of confidence intervals. After December 1994, threshold standards and their applications will continue to be developed.

Interventions

The interventions proposed in this appendix are not the only ones which might be effective, but they do represent ideas for action which were developed over a period of several months by a large group of people representing a variety of professional and community perspectives. For the most part, these interventions are not easily-counted functions and processes. Most often the clients served are the entire population of the state or some large sub-group of that population. The responsibility for implementing the interventions lies not just with public health departments and districts, but with many other agencies and organizations as well. Public health is truly a community interest, and efforts to protect and promote public health must involve numerous participants in every community.

The development of this section involved hundreds of people. For each of the five general areas, there was a Public Health Improvement Plan Technical Advisory Committee subcommittee with representatives from many organizations and diverse expertise. Within each area, numerous people were involved in proposing, discussing, writing, and reviewing the background material, the proposed standards, and the proposed interventions to address such diverse subjects as tuberculosis, breast cancer, tobacco use, homicide, domestic violence, infant mortality, nutrition, drinking water, and hazardous substances. In addition to public health professionals, this process involved many people and organizations outside public health agencies.

The proposed 1995-97 biennial budget for the State Department of Health contains six goals and 49 objectives as the measures against which the department's performance should be gauged during biennium. Five of the six goals relate to the five general health problem areas listed in this appendix, and most of the 49 objectives are drawn directly from the outcome standards. These goals and objectives are listed in Appendix A.

Infectious disease

Cost effective health system reform cannot be achieved without effective control of infectious diseases, which are of concern because of the emergence of new illnesses and the resurgence of old enemies such as tuberculosis. Most outbreaks of infectious disease are preventable through surveillance, education, sanitation, vaccination, and primary and secondary preventive treatment. For certain infectious diseases, primary prevention strategies include early diagnosis and treatment because such activities reduce the duration of infectiousness and thereby the rate of transmission in the community.

This report describes and develops standards and intervention strategies for the following infectious diseases:

- HIV/AIDS
- Sexually transmitted diseases (STDs)
- Tuberculosis
- Vaccine preventable diseases

There are, however, many other infectious diseases that could be better controlled if consistent preventive programs were in place. Foodborne and waterborne illnesses such as E. coli, salmonellosis, giardiasis, and cryptosporidiosis are addressed in the Environmental Health section of this appendix. Vector borne illnesses such as toxoplasmosis, Lyme disease, rabies, relapsing fever, tick paralysis, tularemia, and the newly emergent hantavirus will continue to grow in importance as humans and animals come into closer proximity with each other. These illnesses will be addressed in future reports, along with influenza, hepatitis A and C, amebiasis, legionellosis, meningococcal disease, shigellosis, as well as nosocomial infections and zoonoses such as psittacosis.

Public health programs and their preventive health strategies were first developed to stop the epidemics of infectious diseases such cholera, smallpox, typhoid, and yellow fever. These efforts were highly successful, but made public health programs easy targets for budget cuts. The resulting erosion of basic public health programs has impeded public health's ability to deal with the emergence of new diseases and has allowed the reemergence of epidemics of infectious diseases.

Other factors contributing to the spread of infectious diseases include:

- Changes in sexual behavior
- Drug abuse
- Increased travel and immigration
- Poor access to preventive clinical services

The occurrence and prevalence of some infectious disease such as HIV/AIDS is driven by complex social issues such as poverty, racism, substance abuse, and sexual orientation discrimination. Such diseases require multifaceted public health interventions and strategies. Such strategies need to move beyond an individualistic approach to one which acknowledges social and personal realities and relationships.

The prevention of infectious disease requires multi-disciplinary intervention. Such expertise is needed from all levels of public health: government agencies, the medical community, community-based agencies, volunteer and private groups, and the educational system. The affected communities must be involved in the development and

implementation of interventions. Finally, the public health infrastructure needs to be maintained and enhanced in order to more effectively prevent infectious disease and to respond to yet unidentified diseases.

HIV/AIDS

In 1991, HIV/AIDS was the third leading cause of death in Washington State for adults aged 25 - 34 years. For some subpopulations in certain communities, HIV/AIDS is the leading cause of death, for example, in King County for men aged 25 - 44 years during 1990.

The cost of medical care for persons with HIV has been estimated at $119,000 from the time of infection until death. As of September 1993, 822 AIDS cases diagnosed in 1992 had been reported to the State Department of Health. The estimated cost of care for these 822 people is more than 97 million dollars.

In the United States an estimated 22.7 AIDS cases per 100,000 population were diagnosed in 1992. An estimated 393 persons per 100,000 population are infected with HIV. While the estimated incidence of AIDS in Washington State is significantly below the national estimate, national data are heavily influenced by certain epicenters of infection (California, the District of Columbia, Florida, New Jersey, and New York). Washington State ranks in the upper third of states nationally for cases reported.

As the second decade of the HIV/AIDS pandemic progresses, Washington State stands in a precarious position. While we have not been as severely affected as the epicenters of the epidemic, lessons learned from other cities and states make it clear that increased focus on prevention and care is urgently needed.

Estimates suggest that between 10,000-20,000 Washington State residents are currently infected with HIV. If a cure is not discovered, most of these people are expected to die of HIV-related infections and diseases.

Two behaviors—unprotected sexual intercourse with an HIV-infected partner and the sharing of HIV-contaminated drug injection equipment—are responsible for the majority of HIV infection in Washington State to date. Currently, transmission of HIV through blood transfusions and improper or accidental breakdown of infection control practices occur rarely, but will need to be monitored.

As of September 1993, 75% of AIDS cases in Washington State have occurred in homosexual and bisexual men with no other source of exposure, with an additional 11% of cases in gay/bisexual injection drug users. Sexually transmitted disease trends and behavioral data on relapse to unsafe behavior in some populations suggest that renewed efforts to confront risk behaviors in this population are needed.

Impediments to the adoption of safer behaviors include denial of risk, cultural unacceptability of condom use and sexual abstinence, ambivalence about sexuality, social stigma regarding HIV and AIDS, lack of access by youth to safer sex materials, and lack of access to sterile injection equipment by drug users.

Homosexual/bisexual men (both with and without injection drug use) currently comprise the great majority of Washington AIDS cases. However, national epidemiological trends serve to warn us that prevention strategies cannot be ignored in other populations at risk

(people of color, women, youth, and heterosexual injection drug users), even though they now account for less than 15% of AIDS cases. For example, African Americans comprise three percent of the current state population, but represent eight percent of the current AIDS case load.

Recent statistics suggest that the epidemic is rapidly making inroads among groups such as injecting drug users, and heterosexuals. Cases reported among women have doubled in the past three years, and HIV-infected pregnant women pose a risk of disease transmission to fetuses and infants.

Populations at higher risk of HIV include women and male receptive sexual partners, sexually active youth and young adults who have not formed long-term relationships, intravenous drug users, and persons with other sexually transmitted diseases. HIV (and other STD) morbidity is driven by complex social conditions (such as poverty, racism, substance abuse, and sexual orientation discrimination). Prevention and control of HIV will require multifaceted programs that address these intertwined social issues.

Further complicating the HIV epidemic is the lack of reliable population-specific data on disease transmission patterns and behaviors.

Health behavior research confirms that messages regarding sexual safety must be consistent, highly visible, and targeted explicitly to the populations for which they are intended. Generic, broad based campaigns may be helpful in raising public awareness, but have been demonstrated as ineffective in influencing behavior change. In particular, interventions targeting gay and bisexual men must address the complicated behavioral and psychological factors which contribute to relapse to unsafe sex, as well as provide explicit sexual information to younger gay and bisexual men who may not have had access to previous campaigns.

In the absence of a vaccine or cure, access to medical care, social services, and health maintenance information is vital to the delay of HIV-related morbidity and mortality. This includes programs such as insurance continuation funds, extended case management services, access to general health care, and programs geared to maintaining wellness in HIV-infected individuals.

Finally, improvements in public health assessment capacity are necessary to monitor the movement of the virus in communities, especially outside the Seattle-King County metropolitan area, and in populations known to be at behavioral risk but currently with a low prevalence of disease.

Intervention strategies for HIV/AIDS include:

- Improve epidemiological and behavioral assessment capability. Periodically reexamine the usefulness of HIV reporting to improve public health's assessment capability.
- Evaluate and articulate the public health rationale for strengthening state and local laws and ordinances against discrimination based on sexual orientation.
- Prevent transmission of HIV infection through educational activities and improved access to services.
- Focus preventive education on the individual, the family, and the community, including the workplace. Educational interventions would include information on

sexual safety, personal responsibility, sexual abstinence or delay, correct and consistent use of condoms, the value of HIV testing, prevention of injection drug use, needle/syringe sterilization procedures, infection control practices, and awareness of HIV risk.

- Provide targeted education to persons whose behaviors or personal circumstances place them at increased risk of HIV, and include a skills-building component. Messages must be explicit, consistent, population specific, and culturally relevant.
- Improve access to and consistent and correct use of disease prevention materials in order to prevent acquisition or transmission of HIV among persons who are sexually active or who use injection drugs. These materials include: latex condoms and other latex barriers and education on correct use; sterile drug injection equipment; and printed or other materials and information on sexual safety.
- Educate health care providers to assess all clients for their risk of HIV and offer necessary prevention and clinical services.
- Improve access to services which increase individual knowledge of HIV serostatus and improve referral to and receipt of other prevention and treatment services. These services include confidential HIV counseling and testing; HIV-related health, social and community services; and drug treatment including methadone services. To be effective, these services must be provided in a manner that is culturally relevant and protects the civil rights of those infected with or at risk of HIV.
- Promote the use of medically appropriate antiviral therapies to prevent transmission of HIV infection (e.g. with pregnant women) and other drugs and therapies to prevent or delay associated illness and death.
- Provide public health interventions, such as programs to assure notification of persons exposed to HIV, to help target prevention education and risk reduction programs and to facilitate access to health and social services by HIV-infected persons.
- Control other sexually transmitted disease which facilitate the transmission of HIV.

The interventions and strategies listed above are consistent with the Centers for Disease Control and Prevention's Strategic Plan for Prevention of HIV Infection, July 9, 1992, and other national guidelines. Numerous studies and research projects have addressed the efficacy of these educational, access, and public health interventions.

To be effective, educational interventions should be directed toward persons whose behavior or personal circumstances place them at increased risk of HIV. The World Health Organization estimates that it is 50 times more cost efficient to provide education targeted at high risk individuals than to intervene later in the general population.

HIV/AIDS standards

	Washington State				United States		
	Baseline			Year 2000 Target	Baseline		Year 2000 Target
	Year(s)	Count	Rate	Rate	Year(s)	Rate	Rate
Prevalence of HIV Infection	1992	15,000 (est)	293	293	1989	400 (est)	800
Prevalence of HIV infection in women giving birth to live-born infants	1989-92	87	31	30	1989	150 (est)	100
Incidence of STDs							
Chlamydia*	1992	11,762	230	170	1989	NA	NA
Gonorrhea*	1992	4,169	82	60	1989	300	225

*Rates for these diseases should be monitored by subpopulation (age group, racial/ethnic group, gender) with application of the state standard to those subpopulations.

	Washington State			United States		
		Baseline	Year 2000 Target	Baseline		Year 2000 Target
	Year(s)	Count/%	Count/%	Year	Count/%	Count/%
Annual incidence of diagnosed AIDS	1992	878*	900	1989	44,000-50,000 (est)	98,000
Reported cases of male rectal Gonorrhea	1992	51	50	NA	NA	NA
Percent of youth in grades 10 & 12 who report never having sexual intercourse						
Grade 10	1992	60%	75%	NA	NA	NA
Grade 12	1992	41%	50%	NA	NA	NA
Percent of sexually active youth in grades 10 & 12 who report never having sexual intercourse	1992	56%	75%	NA	NA	NA

* As of August 1, 1994
All rates are per 100,000 resident population.

Sexually transmitted diseases

Sexually transmitted diseases are far more common than most people realize. Genital herpes alone infects about 25 percent of the U.S. population, and it is probable that at least half of all Americans acquire an STD by age 30.

Sexually transmitted diseases (STDs) are the most commonly reported infectious diseases in Washington State. In 1992, more than 23,000 cases of STDs were reported. STDs cause significant disability and suffering, but are seldom fatal because of the effective treatment regimens for the bacterial STDs.

STD morbidity is driven by very complex social conditions, including poverty, racism, substance abuse, crime, family disruption, and media influences. Multifaceted programs are required to address these intertwined issues. Women and children suffer a disproportionate share of STD morbidity and long-term complications. STDs also affect different segments of society at differing rates. Racial and ethnic minorities, adolescents and young adults, and certain urban and rural populations have far higher rates of infection than the state average.

All STDs share common mechanisms of transmission, epidemiology, risk groups, and potentially effective interventions. The five STDs addressed in this section can be divided into two categories: bacterial infections and viral infections. There are curative therapies for the bacterial diseases, but no effective cure has been discovered for the viral diseases, which persist for the lifetime of the infected person.

Bacterial STDs

Chlamydia is the most common bacterial STD in the United States and in Washington. Until recently, diagnostic tests were expensive, so screening of large populations was too costly. Washington State has been able to initiate special screening projects with limited resources in family planning and STD clinics throughout the state, reducing the rate of infection in women in family planning clinics by over 60%.

Reported gonorrhea has been decreasing for the past seven years, and the reported rate per 100,000 is the lowest since 1962. Gonorrhea can be prevented and controlled through screening, early diagnosis and treatment, partner follow-up, and prevention education in high-risk populations. The emergence of strains of gonorrhea resistant to penicillin and other antibiotics indicates that gonorrhea will continue to be a public health problem unless active surveillance and control programs are maintained.

Syphilis has been well studied and has been a primary focus of public health efforts for the past half century. The incidence of new cases in the 1980's reached epidemic proportions. In the past two years, the number of reported cases of primary and secondary syphilis declined for the first time since 1985. While it is still not clear precisely why this decline has occurred, there is little doubt that the epidemic was in large degree related to drug use and prostitution—particularly the selling of sex for drugs and the practice of having multiple anonymous sexual partners.

Viral STDs

HIV and hepatitis B, two important viral STDs which are also transmitted through other paths, are discussed in detail in other sections of this report.

Human Papillomavirus (HPV), more commonly known as genital warts, is a very common sexually transmitted viral disease. Routine Pap smears at Planned Parenthood generally demonstrate that approximately 3% of patients screened have HPV. To some extent, it seems that the epidemiological data accumulated so far have served to confuse as much as clarify the issue of HPV prevalence, its association with cervical cancer. Factors contributing to the distribution of genital HPVs in the general population appear to be more complex than originally thought.

Herpes Simplex (HSV-2) virus causes recurrent painful ulcerative lesions of the genital and perianal area, yet half of all infections are asymptomatic. Present treatment only limits the severity of the symptoms and the number of recurrent outbreaks. Genital herpes became legally reportable in Washington State in 1987, with only the initial genital infection being counted. In 1992 over 2,000 cases were reported, but this figure represents a very small percentage of the true incidence of initial genital herpes. Data suggest that over 20% of all Americans acquire HSV-2 by age 30. Genital herpes causes significant pain and suffering. Diminished transmission and infection would decrease the demand on primary medical care practitioners and could have a significant impact on the rate of primary and repeat Caesarean section deliveries.

Intervention strategies for both bacterial and viral sexually transmitted diseases include:

- Conduct programs to accurately assess the incidence and prevalence of selected STDs in the community, recognizing that clinician-based and laboratory-based reporting are incomplete. Sentinel surveillance, universal screening at selected sites, and better information management systems can contribute to this goal.
- Provide statewide and local information and data within the requirements of confidentiality to health districts, departments, and community groups concerning STD rates and problems for program planning and implementation.
- Provide age-appropriate and culturally sensitive comprehensive K-12 sex education (including self esteem training, refusal skills, anatomy and physiology, contraception, and disease prevention).
- Encourage primary prevention of infections through consistent and correct use of latex condoms and other latex barriers.
- Increase awareness of STD signs and symptoms and the often asymptomatic nature of many STDs.
- Teach parents how to discuss sexual health with their children.
- Develop community-based educational interventions aimed at high risk groups to reduce the risk of STD transmission.
- Increase education and counseling for adolescent groups regarding safe sex, abstinence, and postponement of sexual activity.
- Maximize the referral and treatment of the sexual partners of persons with selected STDs, especially chlamydial infection, gonorrhea, and syphilis.
- Provide publicly funded training in STD epidemiology, clinical recognition, screening, diagnosis, partner referral, and education for clinicians and clinical facilities that serve populations at risk for STD.
- Promote and provide resources to support hepatitis B vaccination among sexually active teenagers and young adults.
- Generate resources to assure cost-effective treatment of patients with STDs, using single-dose therapy wherever applicable.
- Expand outreach to provide limited clinical services and risk reduction counseling to persons at risk for STDs outside traditional clinical settings, such as in school-based clinics, recreation centers, and detention facilities.

The main serious outcomes of STDs, which the above strategies seek to prevent, are female infertility, ectopic pregnancy, other adverse pregnancy outcomes, serious infections of the fetus and newborn, cervical cancer, and the potential for enhanced transmission of HIV infection.

Prevention of STD morbidity requires a comprehensive program of case detection through such activities as screening high-risk populations and partner notification; promulgation of and adherence to standardized treatment regimens whose efficacy is well documented; analysis of morbidity trends and the epidemiology of STDs to help target prevention activities and resources; education of persons at risk and the training of health professionals; and assurance that all patients at risk have access to the clinical services necessary to achieve these goals.

The special characteristics of STDs and of the populations most at risk, the number of patients requiring services, and the need for services on demand make it difficult to integrate STD management into general medical care settings. The cost savings in preventing a modest number of cases of infertility, cervical cancer, or HIV would more than pay for the continued use of categorical STD clinics in combination with family planning clinics throughout the state.

Patient counseling for prevention and partner referral, especially for chlamydia, gonorrhea, and syphilis, should be available from all health providers, and has been shown to be cost-effective.

Education of the medical community will help maintain standards of care. Education of individuals will support behaviors which will reduce risk of acquiring STDs. Education of families will affect their children's adult sexual behavior.

Sexually transmitted disease standards

Incidence of specified sexually transmitted diseases	Washington State				United States		
	Baseline			Year	Baseline		Year
			2000 Target				2000 Target
	Year(s)	Count	Rate	Rate	Year	Rate	Rate
Chlamydia	1992	11,762	230	170	NA	NA	NA
Gonorrhea	1992	4,169	82	60	1989	300	225
Primary and secondary syphilis cases	1992	85	1.7	1.0	1989	18.1	10.0
Human Papillomavirus*	NA	NA	NA	NA	NA	NA	NA
Genital Herpes	1992	2,253	44	35	NA	NA	NA

* Data are not available to establish standards in this area.

The completeness of reported data for STDs varies by specific disease. Diseases that have a laboratory reporting component are believed to be more complete than those that do not. In addition, program activities to promote more complete reporting can influence cases rates from year to year.

Behavioral standards presented in the HIV/AIDS problem area will also be evaluated as indicators of progress or the need for increased action.

All rates are per 100,000 resident population.

Tuberculosis

Tuberculosis (TB) is a serious infectious disease which is spread almost exclusively by airborne transmission of bacteria. Although the disease can affect any site in the body, it most often affects the lungs. Approximately 29 percent of people who come in close contact and 15 percent of other contacts will be infected by a person with untreated infectious TB.

Tuberculosis can be prevented and successfully treated with antibiotics. Once a major cause of illness and death, it became relatively uncommon but is now on the increase, both nationally and in Washington State. The resurgence of TB incidence in Washington began in 1984, after three decades of steady decline. Each year since 1984 there has been an increase in cases reported in Washington, from 207 active cases (4.8 per 100,000) in 1984 to 309 active cases (6.0 per 100,000) in 1992—a 48% increase in the number of cases reported.

An ominous aspect of the problem is the recent occurrence of outbreaks of multidrug-resistant TB (MDRTB). This poses a serious public health problem and requires rapid intervention. In 1993, there were five cases of MDRTB reported in Washington. Preventative therapy for TB costs about $150 per case. Treatment costs about $1,000 per case. These costs escalate to about $200,000 per case for treatment of a MDRTB case.

Another particular concern is the threat of TB to children, in whom the disease is far more invasive and who are vulnerable to neurological damage and death. In 1993 there were 14 cases of TB in children under 5 years of age.

Increased numbers of individuals in high risk populations, such as homeless people, individuals infected with HIV, undiagnosed and infected immigrants, and populations in long-term care facilities will further complicate the TB problem.

Healthy persons can develop latent TB when they become infected with the bacteria and are not able to eliminate the infection. They have no symptoms and cannot spread TB to others, but remain infected for years. Usually a positive TB skin test is the only evidence of infection. It is estimated that 650,000 people in Washington have latent tuberculous infections. About 5% of otherwise healthy persons with latent tuberculous infection will become ill with active TB at some time during their lives.

Laboratory tests are necessary to determine the infectiousness of a patient. Because of the recent resurgence of TB as a public health concern, sophisticated diagnostic methods have become an important tool for rapidly identifying cases. In Washington, 27% of the laboratories involved in culturing TB have the ability to identify the organism, but less than 13% use new diagnostic methods.

Routine preventive treatment for infected individuals without active TB is 6 months of relatively inexpensive drug therapy which will prevent the emergence of active TB. However, if the infection is not treated, active disease may develop and a more extensive and costly course of drug treatment must be undertaken. If resistance to the first line anti-tuberculosis agents develops, then second line agents, which are still more expensive and more toxic, must be used. Compounding the seriousness of the increase in TB cases has been the appearance of TB strains resistant to conventional anti-tuberculosis therapy.

The resurgence of TB has not affected the general population equally. Rather, it has been clustered among certain high-risk populations. There is a clear relationship between the number of TB cases in a community and the income level and availability of adequate

and appropriate housing. In Washington 7% of persons with TB cases are homeless. About 14% of Washington's 1,298,246 children (under the age of 20) live in households with incomes below the official federal poverty level. This is an increase from 11.5% in 1979 and 9.8% in 1969.

TB is found in ethnic groups and foreign born persons at case rates that are of concern. In Washington, the case rate is 1.3/100,000 in Caucasians, while it is 38.0 in Asian and Pacific Islander groups, 16.1 among Native Americans, and 12.6 among African-Americans.

An issue in TB control is the lack of adequate information about foreign born individuals. Currently, 57% of TB cases (October 1993 year to date) in Washington are individuals born outside of the United States. It is known that the recent immigrants in Washington are primarily from the Pacific Rim and often from regions with high TB rates and/or have received inadequate treatment.

The TB case rate within Washington prisons is 39/100,00, and there are more cases in jails than in prisons. In Washington, 28% of those entering prisons are infected with TB. At this time, TB testing is mandatory for all prison inmates. There has been a 13-17% increase per year in the total number of inmates in Washington prisons, from 6,419 in 1989 to 9,994 in 1992.

The incidence of active TB in HIV-infected patients is, according to Centers for Disease Control and Prevention data, nearly 500 times the incidence in the general population. HIV/AIDS is implicated in five percent of Washington's TB cases.

Individuals of advanced age often have conditions (e.g. immune compromised) known to increase the risk of active disease once infection has occurred.

Intervention strategies for tuberculosis include:

- Assess the prevalence, incidence, and socio-demographic characteristic of cases and infected persons in the community.
- Review each new tuberculosis case and each death from tuberculosis to determine if the case or death could have been prevented had the American Thoracic Society/CDC recommendations been followed.
- Promote screening, diagnosis and prevention of TB in all health care facilities.
- Establish active preventive intervention programs.
- Screen 90% of primary immigrants and 75% of secondary (those originally entering the U.S. in another state) immigrants.
- Conduct annual tuberculin skin-testing programs among the staffs of TB clinics, mycobacteriology laboratories, shelters for the homeless, nursing homes, substance-abuse treatment centers, hospitals, and dialysis units.
- Provide rapid laboratory diagnosis and reporting and assure compliance with directly observed therapy (DOT) and directly observed preventive therapy (DOPT).
- Assure that 90% of persons with signs and symptoms suggestive of tuberculosis receive an appropriate diagnostic evaluation within 2 weeks of initial contact with a health-care provider.
- Develop a specific treatment and monitoring plan within 4 days of diagnosis including, when necessary, health and social service incentives to assure treatment.
- Assure that suspected or diagnosed cases are reported to health departments within 3 days of the time the diagnosis is made

- Implement active population-specific case finding to identify groups of people in the community among whom tuberculosis and transmission of infection are occurring.
- Where non-compliance is demonstrated, use community outreach workers to provide DOT/DOPT when necessary and appropriate.
- Develop a discharge plan including provision of support services such as housing, substance abuse treatment, psychiatric care, and other social services prior to discharge of patients detained for treatment.

Tuberculosis standards

	Washington State				United States		
	Baseline			Year 2000 Target	Baseline		Year 2000 Target
	Year(s)	Count	Rate	Rate	Year	Rate	Rate
Incidence of tuberculosis	1993	286	5.5	2.0	1988	9.1	3.5
Children under the age of 5 years.	1993	14	3.8	1.0	NA	NA	NA

All rates are per 100,000 resident population.

Vaccine-preventable illnesses

The potential for becoming infected with vaccine-preventable diseases such as measles, mumps, rubella, pertussis, diphtheria, tetanus, hemophilus influenzae type b (Hib), influenza, pneumococcal disease, and hepatitis B (HBV) exists for all persons within Washington State who are not age-appropriately immunized against them. Influenza, pneumococcal disease, and hepatitis B account for the majority of vaccine-preventable deaths in the United States.

A 1994 survey revealed that only 56% of Washington State preschool children were current for three primary immunizations by their second birthday (four DTP, three polio and one MMR). This was a retrospective survey looking at records of kindergarten-aged children to see if they were appropriately immunized when they were age 0 through 23 months, based on the standard in effect at that time. A preschool child is now considered current if he or she has had four DTP, three polio, four Hib, one MMR, and three hepatitis B immunizations by the age of two.

Unimmunized children and adults are susceptible during disease outbreaks, as evidenced by the number of measles cases reported between 1989 and 1991. Many adults with influenza-related complications are admitted to hospitals. In the United States there are an estimated 10,000 to 40,000 excess influenza deaths each year, the majority among persons over 65, almost all of whom have not been immunized. Pneumococcal infections cause 40,000 deaths annually and as many as 120,000 hospitalizations. Four to five thousand deaths occur each year as a result of chronic hepatitis B-related liver disease and primary liver carcinoma.

Immunization with hepatitis B vaccine is the most effective means of preventing HBV infection and its consequences. In the United States, most HBV infections occur among adults and adolescents, with approximately 300,000 new cases each year. Of these, 5-10 percent progress to the chronic carrier state, capable of infecting other individuals over their entire lifetime. Up to ninety percent of infants born to HBV-positive mothers become chronic carriers of infection if they do not receive treatment shortly after birth. The earlier a person becomes a chronic carrier, the greater the risk that chronic liver disease or cancer of the liver will develop later in life.

Factors which contribute to inadequate immunization levels include:

- Limited clinic and office hours and service delivery sites.
- Long delays for appointments and long waiting times.
- Policies that require comprehensive physical examinations as a prerequisite, even though appointments for physical examinations must be scheduled months in advance.
- Limitations on the number of children who can be scheduled for immunization services at a specific location on a given day.
- Failure to screen and immunize children and adults who are seen for other medical reasons.
- Failure to integrate immunizations into the routine health care of children and adults.
- Failure to screen the immunization status of children accompanying other family members for health reasons.
- Failure to administer simultaneous doses of vaccine during a single health care provider visit.
- Lack of parental and provider knowledge about true contraindications.
- Excessive paperwork which delays the immunization process.
- Inadequate tracking and recall systems.
- Legal issues regarding who may provide consent for childhood immunizations.
- Inadequate funding for the purchase of hepatitis B vaccine.
- Lack of understanding of the importance of immunizations.
- Limited parental and provider knowledge of the recommended immunization schedule.

The long term and costly consequences of vaccine-preventable diseases include vision and hearing loss, developmental delays, paralysis, liver disease including cancer, mental retardation, neurologic problems, heart disease, and death.

Intervention strategies for vaccine-preventable diseases include:

- Develop electronic immunization record keeping and tracking systems with easily retrievable information.
- Regularly review immunization records to determine the percentage of children who are current by their second birthday. Monitor progress toward Year 2000 goals for immunization rates for children two years of age through assessment of provider records.
- Develop methods to assess immunization levels for diseases such as hepatitis B and other child and adult vaccine-preventable diseases.
- Make immunizations available when other health services such as WIC and family planning are being provided.
- Have no prerequisites (such as physical examinations) for receipt of immunizations.
- Provide immunizations free or for a minimal administration fee. Do not deny immunization services because of the inability to pay.

- Follow only the true contraindications for immunizing. (Mild illness, for example, is not a true contraindication.)
- Provide adequate funding for all vaccines, especially hepatitis B vaccine and the second dose of measles vaccine.
- Provide insurance coverage for all recommended child and adult immunizations, including the cost of vaccines and their administration.
- Pursue universal hepatitis B immunization, including all newborns, adolescents, persons who engage in high risk behaviors, and all health care providers.
- Decrease barriers to immunization services.
- Educate health care providers on the importance of screening all pregnant women for HBV and providing proper follow-up and treatment for newborns and household contacts.
- Raise public awareness of the need for immunizations for infants and throughout adult life.
- Inform physicians and other health care providers of new standards for pediatric immunization practices and guidelines for adult immunizations.
- Educate people in a culturally sensitive way about the importance of immunizations, the diseases they prevent, and the recommended immunization schedule.
- Make sure parents or guardians understand the importance of keeping an immunization record for each child.
- Involve local voluntary service organizations and coalitions in immunization efforts including outreach.
- Conduct a statewide media campaign to increase immunization awareness.
- Promote ongoing education and training on current immunization practices and recommendations for health care providers.
- Educate health care providers regarding federal requirements for storage, management and documentation of immunizations.
- Make immunization services readily available on a walk in basis, including some weekends and evenings, with minimal waiting time.
- Provide flu vaccine at workplaces, colleges and universities, senior centers, long-term care settings and other community sites where there are individuals at risk.
- Use all health care encounters to screen for needed vaccines and provide immunizations when indicated.
- Administer simultaneously all vaccines for which an individual is eligible at the time of each visit.

Vaccine-preventable illness standards

	Washington State			United States		
		Baseline	Year 2000 Target	Baseline		Year 2000 Target
	Year(s)	%/Count	%/Count	Year	%/Count	%/Count
Age-appropriate immunization levels among children 0-23 months	1994*	56%	90%	1989	70-80% (est)	90%
Cases of specified vaccine-preventable diseases						
Measles	1992	250	0	1988	3,058	0
Pertussis	1992	101	20	1988	3,450	1,000
Hepatitis B	1992	**	**	1987	63.5	40

*Retrospective survey conducted in 1994, looking at records of kindergarten-aged children to see if they were appropriately immunized when they were age 0-23 months.

**Reported disease is a poor measure of hepatitis B occurrence in a community because many infected individuals have no symptoms and, therefore, may go undiagnosed. Data systems need to be developed to assess the level of hepatitis b immunization in various population groups.

Non-infectiousdisease

Non-infectious diseases are among the leading causes of death and are clearly major public health problems. This report describes and develops standards for the following non-infectious disease problems and risk factors of concern to public health officials:

- Cardiovascular disease (coronary heart disease and stroke)
- Female breast cancer
- Uterine cervix cancer
- Diabetes
- Tobacco use
- Chemical dependency

The diseases examined here are important from a public health perspective because they affect large numbers of people and because there are proven interventions which can prevent or alleviate much of the diseases' impact. Tobacco use is an important public health issue which is examined because of its significant relationship to many non-infectious diseases.

Other important non-infectious diseases are not addressed here. These include, but are not limited to, chronic obstructive pulmonary disease, asthma, lung cancer, colorectal cancer, skin cancer, prostate cancer, osteoporosis, arthritis, and kidney disease.

The public health approach to preventing non-infectious diseases is in some respects different from the approach used for acute or infectious diseases. Overt symptoms often appear years after a non-infectious disease has had an opportunity to develop within a person. Efforts are therefore aimed at reducing risk factors such as tobacco use and identifying disease processes at the earliest possible stage. Another public health goal is to prevent the later stage complications of the disease and to increase a person's productive years of life.

The social and economic costs of chronic care associated with non-infectious diseases are enormous. Public health programs to detect disease and reduce risky behavior can significantly reduce these costs. For example, the early diagnosis and treatment of diabetes is an important method of preventing or reducing complications associated with the disease, including blindness, amputation, heart and kidney disease, birth defects, and stroke.

Since non-infectious diseases develop over a period of many years, an intervention strategy may not have any significant impact on mortality rates by the year 2000. Improved screening and education may even cause an apparent rise in disease incidence and prevalence before any true reduction in morbidity or mortality can be seen. Outcome and threshold standards are therefore aimed at reducing risk factors or identifying the disease in its early stages.

Some known risk factors for non-infectious diseases include:

- Heredity
- Behavior such as lack of exercise or tobacco use
- Environmental exposures to chemicals or radiation
- Socioeconomic status, particularly low education level and low income
- Diet and nutrition factors such as high fat intake or obesity

- Hypertension
- Access to screening and preventive services for everyone, including people in rural areas or those with cultural or language barriers
- Gender, race, ethnicity, or age

Tobacco use is an example of a significant risk factor leading to heart disease, cancer, and diabetes-related deaths. Reducing tobacco use and exposure will reduce or delay the onset of these non-infectious diseases.

Activities which apply to the prevention and control of non-infectious diseases should be addressed by public health at the state and local levels. Such activities include:

- Change the environment.
- Educate the public.
- Educate health care providers.
- Assure access to high quality risk reduction services.
- Improve data availability.

Due to the long-term nature of non-infectious diseases, many different groups or agencies (public, private, voluntary) may become involved in the prevention, care, and rehabilitation of persons with these diseases. A coordinated approach to comprehensive health services is important in addressing non-infectious diseases. While this is just one of the goals of the state's initiative in the health system reform area, it is a significant one for public health.

Cardiovascular disease

Cardiovascular disease (CVD) is the leading cause of death in Washington, accounting for about 42% of all deaths. Coronary heart disease (CHD) and stroke account for 73% and 19%, respectively, of the over 15,000 CVD deaths in Washington each year. These two categories of disease are manifestations of the larger problem of atherosclerosis. Other conditions caused by atherosclerosis, such as peripheral vascular disease, will also be affected by the recommended efforts.

CVD mortality can be reduced by controlling risk factors. There are four generally accepted major modifiable risk factors for coronary heart disease: physical inactivity, tobacco use, elevated blood pressure (hypertension), and elevated blood cholesterol. Some risk factors, including diabetes mellitus and obesity, are influenced by both genetics and behavior. Others, such as age and sex, are not modifiable. CVD risk is also related to socioeconomic status. Data related to the prevalence of controlled and uncontrolled risk factors and the incidence of and morbidity from cardiovascular diseases in Washington State are inadequate or unavailable. In addition, data are needed on the prevalence of risk factors in special populations such as racial and ethnic groups, youth, and older adults.

In the tables below, the impact of risk factors is expressed as relative risk and population attributable risk. Relative risk is the ratio of the mortality rate in the population in which the risk factor is present to the mortality rate in the unaffected population. Population attributable risk is the portion of all mortality from a particular cause that results from the effects of that risk factor on the population. For example, the table below shows that the 48% of people who are physically inactive are about twice as likely to die of coronary heart disease or stroke as people who are active. Inactivity is responsible for 30% of the coronary heart disease deaths and 32% of the stroke deaths in Washington.

Coronary heart disease risk factors

Risk Factor	Relative Risk	Prevalence (WA) 1992	Prevalence (U.S.) 1992	Population Atrributable Risk (WA)	Population Attributable Risk (U.S.)
Smoking	2.1	21%	26%	19%	25%
Cholesterol	1.7	unknown	37%	21%*	43%
Hypertension	2.1	unknown	19%	17%*	18%
Physical Inactivity	1.9	48%	58%	30%	35%

*Population Attributable Risk is based on United States Prevalence

Stroke risk factors

Risk Factor	Relative Risk	Prevalence (WA) 1992	Prevalence (U.S.) 1992	Population Atrributable Risk (WA)	Population Attributable Risk (U.S.)
Smoking	2.0	21%	26%	17%	25%
Hypertension	3.3	unknown	19%	30%*	18%
Physical Inactivity	2.0	48%	58%	32%	35%

*Population Attributable Risk is based on United States Prevalence

Research has shown that CVD prevention efforts which produce relatively small changes in risk factor levels among the entire population have a larger impact on community disease rates than intensive interventions limited to high risk individuals. Thus, the most effective way to reduce mortality from cardiovascular disease would be to control the scientifically established risk factors by addressing behavior and life-style choices related to smoking, physical inactivity, hypertension, and nutrition through a comprehensive approach. This approach focuses on changing community norms and the environment, risk assessment and screening, public and provider education, and developing a health system which is better able to support CVD prevention efforts.

Primary CVD prevention is prevention of coronary heart disease and stroke through control of risk factors and is the primary focus in this document. Secondary CVD prevention is risk factor reduction among people who already have coronary heart disease, stroke or diabetes. Tertiary CVD prevention involves prevention of complications of disease, with public health involvement including early recognition and treatment of heart attack and stroke.

Intervention strategies for cardiovascular disease include:

- Establish and maintain surveillance systems that provide data at the state, county, and community level to regularly assess and monitor the prevalence of risk factors, incidence, morbidity, and mortality for coronary heart disease and stroke.
- Establish and maintain surveillance systems to assure that services are being provided in accordance with established standards.
- Develop, implement, and update a comprehensive heart disease and stroke prevention plan.
- Use social marketing and policy advocacy strategies to promote healthy behaviors by changing societal norms and the environment through activities such as media campaigns.
- Change school curricula to support lifelong physical activity, avoidance of tobacco use, and healthy eating patterns.
- Help work site and health care agencies develop and implement programs which promote a healthy environment and behaviors among employees and clients. This may include the provision of incentives to work sites, such as legislation to limit liability.
- Reduce tobacco use. (For more detailed tobacco control interventions, see the Tobacco Control section of this document.)
- Promote the creation of safe and affordable physical environments that encourage physical activity. Examples of such activities include encouragement of zoning and building construction regulations which protect open space and development of green-ways.
- Prevent high cholesterol levels and encourage healthy eating by providing nutrition information and developing guidelines for food producers at points of purchase (such as grocery stores) and consumption (including institutional food operations and restaurants).
- Educate the public and health care purchasers about the benefits of physical activity, healthy eating patterns, smoking cessation and high blood pressure prevention and control.
- Educate the public about early recognition of heart attack and stroke and the importance of calling the emergency medical services system for assistance.
- Prevent high blood pressure by promoting weight control, lower salt intake, lower alcohol consumption, increased exercise and avoidance of tobacco use.
- Alleviate personal and system barriers to risk factor screening and follow-up services, particularly for high blood pressure.
- Develop culturally appropriate community-based prevention programs which implement integrated interventions that address multiple risk factors.
- Develop statewide and community-based health promotion programs to educate the public about healthy eating patterns which include decreased fat content and more servings of fruits and vegetables each day.
- Educate health care providers in heart disease and stroke prevention and control.
- Provide early intervention services to individuals experiencing a heart attack or stroke.
- Develop and implement a comprehensive emergency response system statewide, which includes the following elements and personnel: bystander CPR; rapid activation of emergency medical services (EMS) and trauma systems; hospital emergency departments; cardiac rehabilitation facilities; other health care facilities and personnel; and training programs in basic and advanced life support as well as citizen defibrillation.

- Establish, implement, and monitor compliance with standards and guidelines for services related to early recognition and treatment of heart attack and stroke.
- Define the role of risk factor assessment services provided for individuals, including cholesterol screening, outside of primary care settings.
- Provide screening for high blood pressure in public settings for selected high risk populations.
- Develop, implement and monitor standards and guidelines for heart disease and stroke prevention and control to include risk factor assessment, smoking cessation, cholesterol control, hypertension management, and support of increased physical activity provided through the uniform benefits package.
- Establish tracking systems to monitor who is receiving heart disease and stroke prevention services and their effect on risk factor prevalence and control.

While mortality rates due to CHD and stroke have been decreasing, largely as a result of falling rates of exposure to risk factors in the general population, the total number of new cases and deaths due to cardiovascular disease are expected to increase. This is due to population growth, particularly in the older age groups. As the baby boom generation ages and becomes more susceptible to these conditions, overall incidence, mortality, and costs due to CHD and stroke are projected to increase substantially. Intensive risk factor reduction efforts will be necessary to reverse this trend.

For CVD and other chronic diseases, the year 2000 horizon is relatively short-term. Interventions put in place today will take years to achieve their desired impact in terms of population-based risk factor modification. Risk factor reductions hen take time to show results in terms of reduced mortality rates.

Cardiovascular disease mortality standards

		Washington State				United States		
			Baseline		Year 2000 Target	Baseline		Year 2000 Target
	ICD-9 Codes	Year	Count	Rate*	Rate*	Year	Rate*	Rate*
All Cardiovascular Disease	390-448	1992	15,244	152.4	131.0	1990	190.9**	NA
Coronary Heart Disease	410-414, 429.2	1992	8,695	90.9	74.0	1990	102.5**	NA
Stroke	430-438	1992	2,947	26.0	19.0	1990	27.7	20.0
Coronary and Hypertensive Heart Disease	410-414, 402, 429.2	1992	9,026	94.5	85.0	1987	135.0	100.0

*Rates are age adjusted to the 1940 US population and are per 100,000 people.

**Source: American Heart Association. Cardiovascular Disease as defined here represents ICD/9 Codes 390-459; Coronary heart disease as defined here represents ICD/9 codes 410-414.

Risk factor control outcome standards

Risk Factor	1992 U.S. Prevalence	1992 Washington Prevalence	1996 Washington Outcome Standards	2000 Washington Outcome Standards
Cigarette Smoking	26%*	21%*	18%	15%
High Blood Pressure	18%	Unknown*	Establish Baseline	10% below Baseline
High Blood Cholesterol	37%	Unknown*	Establish Baseline	10% below Baseline
Physical Inactivity	58%*	48%*	45%	42%

* Data from 1992 Behavioral Risk Factor Surveillance Survey.

Risk factor screening standards

Risk Factor	1992 Washington Prevalence	1996 Washington Outcome Standards	2000 Washington Outcome Standards
High Blood Pressure Screening: Proportion of Population screened within past 2 years	95%*	97%	99%
High Blood Cholesterol Screening: Proportion of population ever screened	71%*	73%	75%

* Data from 1992 Behavioral Risk Factor Surveillance Survey.

Female breast cancer

Breast cancer is the second leading cause of cancer death among women in the United States and in Washington State. From 1987 through 1990, 2,977 women (26.9 per 100,000) died from breast cancer in Washington. The incidence rate (newly diagnosed cases) during that time was 132.7 per 100,000 women.

All women are at risk for breast cancer, but risk increases significantly with age. Other factors have been identified which add to a woman's potential for developing breast cancer but none of these factors is readily amenable to modification. Although considerable research in this area continues, opportunities for primary prevention are currently limited. The best opportunity is to detect breast cancer when it is in a "local" stage, when it is easier and less costly to treat and when it is more easily cured.

Research has shown that mammography screening and clinical breast exam performed by a physician or nurse, are effective methods for the early detection of breast cancer. Mortality can be reduced by 30 to 40% among women age 50 and older through the use of regular screening mammography and clinical breast examination. The most recent Washington State Behavioral Risk Factor Survey suggests that women who are low-income, less educated, Hispanic, Asian or over 70 years are not receiving mammography regularly.

There is a national controversy about screening asymptomatic women who are less than 50. Although some studies have shown that mortality rates in younger women are not affected by regular mammography screening, women less than 50 years of age continue to be diagnosed with breast cancer in Washington State. There is consensus that mammography has been proven effective and should be widely promoted for women 50 and older.

Breast cancer is an important health issue for women because it affects survival, life style, self-image, and quality of life. If the disease is to be controlled significantly in Washington State, early detection must increase before the year 2000.

There are significant barriers to adequate breast cancer screening for women in Washington. These include accessible, affordable mammography services, especially in remote regions, lack of health insurance coverage for early detection, lack of culturally sensitive public education messages, and lack of capacity for the system to track and notify women for regular screening.

Provider knowledge and attitudes can also be a problem. These problems include lack of:

- Knowledge about risk factors and that 75% of all breast cancers occur in women with no risk factors other than increasing age.
- Routine recommended clinical examination, patient education and referral for mammography.
- Provider agreement about quality standards and guidelines
- Tracking systems and reminders to both patients and their physicians in the primary care setting.

Fear is a major factor in women not obtaining timely appropriate clinical care and follow-up. There is lack of public knowledge about risk factors and the value of preventive health measures.

Intervention strategies for breast cancer include:

- Conduct comprehensive, ongoing analysis of breast cancer incidence and mortality trends.
- Continue Behavioral Risk Factor Survey of all women, initiate surveys of special populations to monitor mammography use, and add capacity to survey older women aged 70+.
- Survey for barriers to mammography screening.
- Survey provider practices, knowledge, and attitudes.
- Analyze geographic distribution of facilities and adequacy of equipment certification.
- Survey, evaluate and track women who are diagnosed with breast cancer to assure adequate follow-up and treatment services.
- Assess activities in public education, professional education, quality assurance, and surveillance to assure they are meeting the needs of the target populations.
- Case review all late stage breast cancer deaths and report findings to public health officials.
- Enhance cancer registry capacity to provide ongoing reports of case reviews and analyses of breast cancer.
- Conduct periodic household interviews using Behavior Risk Factor Survey in low-income neighborhoods.

- Raise standards among professional organizations and institutional educational curricula to include prevention and screening guidelines in continuing medical education and required courses.
- Establish an advisory committee to review national screening guidelines, recommendations, and research findings and to review public health performance and adequacy of efforts related to breast cancer.
- Establish capacity for education of public, providers, and technicians.
- Assure accreditation standards for equipment and certification standards for mammography providers.
- Assure quality control inspector qualifications and adequate capacity to accomplish the standards which are set.
- Assure availability of mammography facilities in all geographic areas.

Mammogram standards

	Washington State			United States		
	Baseline		Year 2000	Baseline		Year 2000
Ever Received a Mammogram	Year	Rate	Target Rate	Year(s)	Rate	Target Rate
All women aged 40+	1990-92	79.9%	90%	1990	60%	80%
Low-income women aged 40+	1990-92	68.3%	90%	1990	41%	80%
Women aged 40+ with less than HS education	1990-92	69.1%	90%	1990	45%	80%
Women age 70+	1990-92	75.0%	90%	1990	52%	80%
Hispanic women aged 40+	1990-92	68.0%	90%	1990	52%	80%
African-American women aged 40+	1990-92	87.2%	90%	1990	53%	80%
Asian women aged 40+	1990-92	81.2%	90%	1990	NA	NA
Native American women aged 40+	1990-92	84.0%	90%	1990	NA	NA
White women aged 40+	1990-92	79.9%	90%	1990	NA	NA
Other women aged 40+	1990-92	NA	90%	1990	NA	NA

	Washington State			United States		
	Baseline		Year 2000	Baseline		Year 2000
Received a Mammogram Within Preceding 2 yrs.	Year	Rate	Target Rate	Year(s)	Rate	Target Rate
All women aged 50+ years	1990-92	69.2%	80%	1991	54%	67%
Low-income women aged 50+	1990-92	54.5%	80%	1991	39%	67%
Women aged 50+ with less than HS education	1990-92	59.0%	80%	1991	40%	67%
Women age 70+	1990-92	63.6%	80%	1991	45%	67%
Hispanic women aged 50+	1990-92	*50.2%	80%	1991	54%	67%
African-American women aged 50+	1990-92	*68.9%	80%	1991	48%	67%
Asian women aged 50+	1990-92	*69.0%	80%	1991	NA	NA
Native American women aged 50+	1990-92	*76.7%	80%	1991	NA	NA
White women aged 50+	1990-92	*68.8%	80%	1991	NA	NA
Other women aged 50+	1990-92	NA	80%	1991	NA	NA

*These data reflect usage among women 40+ years of age. Source: Wash. State Behavioral Risk Factor Survey, including special 1991 rural survey.

Female breast cancer standards

	Washington State				United States		
	Year	Baseline Count	Rate	Year 2000 Target Rate	Baseline Year(s)	Baseline Rate	Year 2000 Target Rate
Breast Cancer Deaths-Total Female Population	**1990**	**743**	**21.0**		**1990**	**23.1**	**20.6**
	1991	775	21.4				
	1992	781	20.8				
	1990-92	2299	**21.1**	**18.9**			

Data Source: Washington State Mortality Files All rates are per 100,000 resident population. Death rates are age-adjusted to the 1940 U.S. population. Breast cancer deaths are coded to ICD-9 174

Uterine cervix cancer

Cancer of the uterine cervix is one of the most common cancers in women and the most curable. In Washington, 72 women (2.5/100,000) died from cervical cancer in 1990. From June 1991 to May 1992, 198 women (6.8/100,000) were diagnosed with invasive cervical cancer, where the cancer cells had invaded the underlying tissue of the cervix, representing 6.6% of the total reported cases. Another 1836 women (61.4/100,000) were diagnosed with early stage or "in-situ" cervical cancer.

In the U.S., incidence of cervical cancer in white women under age 50 has reversed its previous downward trend and has been increasing about 3% a year since 1986. Elevated rates are also observed for Hispanics, Native Americans, and for women with low-incomes and low-education. Incidence rates are declining in black women of all ages and in white women over age 50. About a third of the women diagnosed die because the cervical cancer was not detected at an early enough stage for successful treatment. In Washington, invasive cervical cancer is more common in women over the age of 35 years, and among Asian/Pacific Islander and Native American women.

All women are at risk for cervical cancer, but certain factors increase the risk. These include early age of sexual intercourse, multiple sex partners, genital warts of certain types, cigarette smoking, lower socioeconomic status, non-white race and inadequate use of the Pap test.

When cervical cancer is found at its earliest stage, the disease is almost 100% curable, but the cure rate falls to 14% when it is detected in the distant stage. Early cervical cancer changes can easily be detected through use of the Pap test. By screening with the Pap test at least once every three years, cervical cancer mortality for women aged 20-70 years may be reduced by an estimated 70% to 95%.

The decline in cervical cancer mortality in the 1970s and 1980s is thought to be due primarily to the widespread use of the Pap test for early detection of cervical cancer. Current widely recognized and accepted guidelines recommend that women receive regular Pap tests upon becoming sexually active until age 75.

The most recent Washington State Behavioral Risk Factor Survey suggests that women who are low-income, less educated, Native American, Asian or over 70 years are not receiving Pap tests regularly. Regular Pap test screening among all women in the state,

with a special emphasis on these women may produce a shift toward earlier stage disease, with its attendant improved survival rate and decreased death rate.

There are barriers to adequate cervical cancer prevention services for all women. These include lack of health insurance coverage for preventive services, lack of culturally sensitive public education messages, lack of accessible, affordable screening and follow-up treatment services, including colposcopy.

There are too few health care providers counseling patients about risk factors and performing colposcopy, follow-up and treatment. There are inconsistent techniques being used in the collection, staining and preserving of Pap smears and inconsistent follow-up of abnormal Pap test and biopsy results.

Other barriers are caused by patient knowledge and beliefs. Some cultures do not consider screening a valued preventive health measure. Some women distrust the health care system and some dislike or are afraid of the Pap test procedure. Some women have no knowledge or information about the Pap test. Still others may not believe the test is of any value, or they may think they have no risk of cervical cancer.

Intervention strategies for cervical cancer include:

- Conduct comprehensive, ongoing analysis of incidence and mortality trends.
- Continue Behavioral Risk Factor Survey of all women and target special populations for monitoring Pap test usage.
- Expand survey to identify barriers to Pap screening among all women.
- Conduct surveys to develop information about provider practices, knowledge and attitudes and report findings to public health officials.
- Survey, evaluate and track women who are diagnosed with cervical cancer to assure adequate follow-up and treatment services.
- Assess activities in public education, professional education, quality assurance and surveillance to assure they are meeting the needs of the target populations.
- Case review all late stage cervical cancer deaths and report findings to public health officials.
- Enhance cancer registry capacity to provide ongoing reports of case reviews and analyses of cervical cancer.
- Conduct periodic household interviews using Behavior Risk Factor Survey in low-income neighborhoods and report results to public health officials.
- Establish an advisory committee to review public health performance and adequacy of efforts related to cervical cancer.
- Establish capacity for education of public, providers and technicians.
- Raise standards among professional organizations and institutional educational curricula to include prevention and screening guidelines in continuing medical education and required courses.
- Assure licensing standards for cytology laboratories, and laboratory professionals and technicians.
- Increase availability of providers who perform the Pap test and assure accessibility within all geographical areas of the state.

Pap test standards

Ever Received a Pap Test	Washington State Baseline Year	Washington State Baseline Rate	Washington State Year 2000 Target Rate	United States Baseline Year(s)	United States Baseline Rate	United States Year 2000 Target Rate
All women aged 18+ years	1989-92	95.9%	98%	1987	88%	95%
Low-income women aged 18+	1989-92	93.6%	98%	1987	80%	95%
Women aged 18+ with less than HS education	1989-92	92.7%	98%	1987	79%	95%
Women age 70+	1989-92	92.5%	98%	1987	76%	95%
Hispanic women aged 18+	1989-92	90.6%	98%	1987	75%	95%
African-American women aged 18+	1989-92	92.4%	98%	1987	NA	NA
Asian women aged 18+	1989-92	79.7%	98%	1987	NA	NA
Narive American women aged 18+	1989-92	99.5%	98%	1987	NA	NA
White women aged 18+	1989-92	96.5%	98%	1987	NA	NA
Other women aged 18+	1989-92	NA	98%	1987	NA	NA

Received Pap Test Within Preceeding 2 Years	Washington State Baseline Year	Washington State Baseline Rate	Washington State Year 2000 Target Rate	United States Baseline Year(s)	United States Baseline Rate	United States Year 2000 Target Rate
All women aged 18+ years	1989-92	84.9%	90%	1987	*75%	85%
Low-income women 18+	1989-92	79.3%	90%	1987	*64%	80%
Women aged 18+ with less than HS education	1989-92	79.9%	90%	1987	*58%	75%
Women age 70+	1989-92	69.3%	90%	1987	*44%	70%
Hispanic women aged 18+	1989-92	84.8%	90%	1987	*66%	80%
African-American women aged 18+	1989-92	87.4%	90%	1987	NA	NA
Asian women aged 18+	1989-92	69.5%	90%	1987	NA	NA
Narive American women aged 18+	1989-92	90.8%	90%	1987	NA	NA
White women aged 18+	1989-92	85.3%	90%	1987	NA	NA
Other women aged 18+	1989-92	NA	90%	1987	NA	NA

* U.S. data shows Pap test usage within the preceding three years. NA = Not available. Washington data for the period 1989-92 represent the most recent three years of data available, since no data on statewide Pap smear utilization were gathered in 1991. Source: Wash. State BRFS, including special 1991 rural survey.

Cervical cancer standards

	Washington State				United States		
	Year	Baseline Count	Rate	Year 2000 Target Rate	Year(s)	Baseline Rate	Year 2000 Target Rate
Cervical Cancer Deaths-Total Female Population	**1990**	**72**	**2.4**		**1990**	**2.8**	**1.3**
	1991	63	2.0				
	1992	52	1.6				
	1990-92	187	**2.0**	**1.6**			

Data Source: Washington State Mortality Files All rates are per 100,000 resident population. Death rates are age-adjusted to the 1940 U.S. population. Cervical cancer deaths are coded to ICD-9

Diabetes

Fourteen million people in the U.S. and over 236,000 in Washington State have diabetes. Diabetes is perceived as a benign disease when, in fact, it is a significant cause of suffering and death. People with diabetes face a shortened life span and the risk of devastating complications including blindness, foot and leg amputations, kidney failure, and perinatal mortality and birth defects among their children. Death rates due to heart disease and stroke are more than twice as high among people with diabetes as among those without diabetes. Diabetes is very expensive; it costs over $1.6 billion dollars in Washington annually.

Undiagnosed Non-Insulin Dependent Diabetes Mellitus (NIDDM): Ten to 20 percent of people age 50 and over have NIDDM and are not aware that they do. In Washington, over 130,000 people have undiagnosed NIDDM. Research shows that diabetes goes undiagnosed an average of 12 years, and that it is not benign during that time. Disabling complications, preventable if they had been identified early, often are developing.

Blindness: Each year several hundred people in Washington will lose their vision due to diabetes, the leading cause of blindness in Americans of working age. Early detection and timely treatment of retinopathy can prevent up to 90% of such blindness. To be most effective, detection and treatment must occur before symptoms develop.

Lower Extremity Amputations (LEA): Diabetes is the leading cause of non-traumatic lower extremity amputations. In 1991 there were 722 diabetes-related amputations in Washington, each costing approximately $40,000 for medical and rehabilitative services—a total cost of $28 million. Over half of these amputations can be prevented with proper foot care and education.

End Stage Renal Disease (ESRD): Diabetes may cause nephropathy, which results in ESRD, or progressive chronic kidney failure. In Washington in 1991, over one-third of all cases of ESRD and almost half of all new cases were among people with diabetes. The costs of ESRD exceed $36,000 per year per patient, translating into a total cost of $23 million per year only for the patients with diabetes. Early routine screening and aggressive control of blood sugar and hypertension will prevent and impede the development of kidney disease.

Coronary Heart Disease/Stroke: Diabetes is a strong independent risk factor for heart disease and stroke deaths. National data show the risk of dying from these diseases is over two times higher for people with diabetes than for people without diabetes. Heart disease and stroke cause the death of 60% of people with diabetes. Early diagnosis of diabetes and aggressive risk factor reduction are critical to reducing these death rates.

Birth Defects: Five percent of pregnancies among women with established diabetes result in perinatal death, compared to two percent in the general population. Eight percent of babies born to these women have a major birth defect, over three times the birth defect rate for all babies. Normalization of blood glucose levels prior to conception can prevent increased death and malformation rates among infants. Preconception care is cost effective: for every dollar spent, $1.86 is saved in direct medical costs. The critical factor is identifying and educating women with established diabetes before they become pregnant.

Rigorous glucose control reduces the risk of complications and is essential for women with established diabetes who are considering pregnancy. Optimal glycemic control established prior to conception can reduce the rates of congenital malformations among infants born to women with diabetes to the same levels as the general population.

The most important contributing factors for diabetes and its complications include: lack of awareness of the signs, symptoms, and risk factors for diabetes and its complications; under-diagnosis of diabetes; lack of consensus on screening criteria, poor glucose control; high blood pressure; smoking; obesity; poorly balanced diet; sedentary life style; peripheral neuropathy or vascular disease; improper foot care or footwear; and foot infections.

Public health strategies for diabetes hinge on people having universal access to affordable health insurance that does not preclude coverage of pre-existing conditions and that covers services that have been scientifically proven to prevent the complications of diabetes.

Intervention strategies for diabetes are:

- Conduct statewide and county-specific analysis of the prevalence, incidence, morbidity, and mortality of diabetes, and determine progress toward outcome standards.
- Establish cost-effective screening criteria for diagnosing diabetes in high risk populations.
- Assure availability of, and access to, screening for early treatable clinical symptoms of the complications of diabetes.
- Convene a consensus conference for primary care providers in Washington State on the American Diabetes Association Standards of Care for diabetes.
- Educate health care providers and people with diabetes about standards of care.
- Develop policies to assure that standards of care for diabetes are practiced by health care providers.
- Provide widespread public education, with particular emphasis on high risk populations, about the risk factors, signs and symptoms of diabetes.
- Coordinate interventions with the cardiovascular disease prevention program to promote increased physical activity, weight management, balanced diet, smoking cessation, and hypertension control.

The table below shows the most important intervention strategies to reduce the impact of diabetes and each of its major complications.

Intervention strategies for reducing diabetes and its complications

Intervention	Heart Disease	LEA	Retinopathy/ Blindness	Nephropathy /ESRD	Perinatal Death/Birth Defects	Undiagnosed NIDDM
Surveillance	X	X	X	X	X	X
Early Diagnosis of Diabetes	X	X	X	X	X	X
Optimal Glucose Control	X	X	X	X	X	
Professional Education	X	X	X	X	X	X
Patient Education	X	X	X	X	X	
Public Education	X	X	X	X	X	X
Screening	X	X	X	X	X	X
Ensuring Proper Reimbursement for Diabetes Care	X	X	X	X	X	
Smoking Cessation	X	X		X	X	
Blood Pressure Control (JNC-V guidelines, ACE Inhibitors)	X	X	X	X	X	
Dietary Public Recommendations (ADA)				X		
Weight Management	X					X
Control Cholesterol (NCEP Recommendations)	X				X	
Increase Physical Activity	X				X	
Aggressive foot care		X				
Therapeutic foot wear, when needed		X				

Outcome standards for diabetes

	Washington State				United States		
Complication	Year(s)	Baseline Count	Rate	Year 2000 Target Rate	Year(s)	Baseline Rate	Year 2000 Target Rate
Undiagnosed diabetes*	**1992**	**130,000**	**25.4**	**22.0**	**ND**	**ND**	**ND**
Incidence of blindness	**	**	**	**	**1988**	**2.2**	1.4
Lower extremity amputation	1990-92	1977	4.9	4.0	**1987**	**8.2**	4.9
Incidence of End Stage Renal Disease (ESRD)	1990-92	930	2.3	2.2	**1987**	**1.5**	**1.4**
Coronary Heart Disease & stroke deaths^	1990-92	2288	563	525	**ND**	**ND**	**ND**
Perinatal mortality^^	**	**	**	**	**1988**	**5%**	2%
Congenital malformations^^	**	**	**	**	**1988**	**8%**	**4%**

Data Sources

Deaths: Center for Health Statistics Hospitalizations Washington State Department of Health, CHARS
ESRD: Northwest Renal Network

Rates are incidence rates per 1,000 people with diabetes. Deaths rates are per 100,000 people with diabetes.

*Washington's proportional share of the 7,000,000 people with undiagnosed diabetes estimated by the American Diabetes Association to live in the U.S.

**No Washington specific data available.

ND=No available data.

^ICD-9-CM codes 410-414, 429.2, 430-438.

^^Among infants of women with diabetes

Tobacco use

According to the U.S. Surgeon General, smoking is the single most important preventable cause of death in our society. Smoking is a major contributor to death and disease from coronary heart disease, cerebrovascular disease, lung and other cancers, and chronic obstructive pulmonary disease (COPD). Over 90% of all lung cancer and over 80% of all COPD is attributable to tobacco. In Washington in 1990, an estimated 7,993 deaths were attributable to all uses of tobacco, totaling approximately $845 million dollars in direct (medical) and indirect (lost productivity) costs.

Smokeless tobacco consumption in the U.S. has been increasing at an alarming rate; the product is marketed as a "safe" alternative to cigarettes. Smokeless tobacco is highly addictive and has been found to be a cause of cancers of the oral cavity and pharynx, including the gum and buccal mucosa, salivary glands, and larynx. Noncancerous conditions such as oral lesions, gingival recession and loss of tooth structure have also been associated with smokeless tobacco. The consumption of moist snuff increased 40% from 1972-1991, predominantly among young males.

Although the effects of tobacco use are seen in people of all ages, races, income levels, and educational levels, certain populations merit individual attention.

Adults Overall: Since 1987, the overall adult smoking rate in Washington has not dropped significantly. Social acceptance of tobacco use by females, higher smoking initiation rates by female adolescents and the marketing tactics of the tobacco industry are primary causes of this lack of decline.

Youth: Eighty percent of adult smokers become addicted to tobacco during their teens, highlighting the importance of prevention. Smoking prevalence rates among young people in Washington appear to be on the rise. Chewing tobacco use among young males is alarmingly prevalent.

Low Income and Education: In Washington State and in the nation, people with family incomes of $20,000 per year or less and those with a high school degree or less are significantly more likely to be smokers.

African Americans: African American men are 30% more likely than white men to die from smoking-related diseases. African American communities are heavily targeted by tobacco industry marketing and promotion.

Southeast Asian Men: Data are inadequate concerning the numerous ethnic groups making up the Asian category. However, some data do point to a high rate of smoking among Southeast Asian males. Washington has the third largest Southeast Asian refugee population in the nation.

Hispanics: Data are also inadequate concerning Hispanic populations in Washington. However, national data indicate that Hispanic males have a higher smoking prevalence than non-Hispanic males. Hispanics who are U.S. born appear to have high tobacco use prevalence rates.

Native Americans: In Washington, Native Americans have high smoking and chewing tobacco use rates. The economics of tobacco sales on reservations and the exemption of reservations from certain state and federal tobacco taxation laws are factors which need to be addressed when designing tobacco prevention and control strategies for this population. In addition, the cultural factors, because of historic and current use of tobacco for rituals, must be addressed.

Pregnant Women: Smoking during pregnancy is a serious problem among teens and lower income women. It is associated with adverse pregnancy outcomes such as low birth weight babies, premature deliveries, spontaneous abortions, stillbirths and neonatal deaths.

There are many factors that contribute to use of tobacco in our society. They include:

- The relatively low price of tobacco.
- Lack of policies and laws regulating environmental tobacco smoke.
- Easy access to tobacco products by minors.
- Cheap tobacco on Indian reservations due to the non-application of state and federal taxes.
- Lack of consistent norms and policies in schools addressing tobacco use.
- Targeted advertising and marketing tactics by the tobacco industry.
- Lack of accessible, affordable cessation programs.
- Inadequate insurance coverage for cessation programs.
- Inadequate access to the health care system for low income and minority populations.
- Lack of culturally relevant, language specific prevention and cessation resources for non-English speaking groups.
- Use of tobacco to control stress and weight (primarily by adults, pregnant women and young women).

- For many foreign-born individuals, a lack of knowledge/education about the health effects of smoking and secondhand smoke.
- Parents and other role models who smoke (for youth).
- The enticement of "risk-taking behavior" (for youth).

Tobacco use is a public health concern that affects the economics and the health of all citizens. Four categories of policies have been determined, through years of research by the National Cancer Institute and other research institutes, to be the most effective in reducing the tobacco use prevalence: 1) progressive expansion of smoke-free environments; 2) elimination of most tobacco advertising and promotion; 3) elimination of access by minors to tobacco products and general limitation of the availability of tobacco products within the community; 4) steep tobacco product price increases.

Intervention strategies to reduce tobacco use include:

- Develop a method to accurately determine the smoking prevalence in minority populations in Washington.
- Assess the smoking status of youth under age 18 by county.
- Make policies and laws on tobacco for public places, schools, work sites, health care facilities, restaurants, bars and taverns consistent with its status as a proven carcinogen.
- Eliminate distribution of free tobacco samples.
- Eliminate tobacco sponsorship of sporting or community events.
- Increase the price of tobacco through taxation indexed to inflation, and earmark revenue for tobacco control programs.
- Decrease or eliminate environmental tobacco advertising.
- Work with tribal governments to address tobacco taxation issues on reservations.
- Discourage lawmakers at local, state and federal levels from accepting campaign contributions from tobacco companies.
- Conduct media campaigns to educate policy makers and the public on the tobacco industry's advertising strategies which target youth and minority populations.
- Mobilize communities and target populations by developing youth and community coalitions that focus on tobacco prevention and control.
- Assess the extent to which tobacco advertisements and promotions target youth, low income people and communities of color.
- Assess the impact on state policy of campaign contributions from tobacco companies.
- Educate policy makers and the public about the tobacco industry's political strategies to undermine the tobacco control movement.
- Eliminate point of purchase marketing of tobacco as well as promotional "give-aways" such as hats and jackets.
- Include coverage for clinically proven cessation programs as part of the Uniform Benefits Package and ensure coverage for cessation programs by Medicaid, the Basic Health Plan and other third party payers.
- Enhance tobacco education in schools, families, and community organizations aimed at preventing exposure of children to environmental tobacco smoke, preventing initiation of tobacco use, and promoting self-esteem, goal setting, and refusal skills.
- Educate specific populations through counter-advertising campaigns.
- Provide cessation services for patients in drug treatment facilities.
- Promote affordable, accessible and culturally appropriate cessation and relapse prevention programs.

- Encourage the development of local public information and referral programs for tobacco prevention and control to assure access to needed materials and information and referral to community smoking cessation resources.
- Assure adequate enforcement of environmental tobacco smoke restrictions (laws and regulations).
- Educate tobacco retailers on the Minors' Access to Tobacco law (RCW 70.155) and the implications of selling tobacco to minors.
- Train health care providers to systematically identify tobacco users and provide brief, consistent, repetitive advice to quit and conduct follow-up for those considering quitting.
- Assess the effectiveness of current laws which aim to reduce youth access to tobacco, and continue to improve regulations as necessary.
- Evaluate the efficacy of teen cessation programs through research.

Smoking standards

	Washington State			United States		
	Baseline		Year 2000	Baseline		Year 2000
	Year(s)	Rate	Target Rate	Year(s)	Rate	Target Rate
Adult Overall	1992[1]	21.2%	15%	1992[7]	25.6%	15%
12th Grade Youth	1992[2]	26.1%	10%**	1992[4]	30.6%	Nd
Low Income	1992[1]	32%	15%	NA	NA	NA
Less Education	1992[1]	32%	15%	1987	34%	20%
Africcan Americans	1990-92[1a]	29.0%	15%	1992[7]	27%	18%
SE Asian Men	1989	42.5%*	15%	1987[6]	55%	20%
Hispanics	1990-92[1a]	22.8%	15%	1991[5]	25.2%	18%
Native Americans	1990-92[1a]	31.7%	15%	1987[6]	42-70	20%
Pregnant women (all)	1992[3]	19.9%	10%	1987	25%	10%
Pregnant women under 20	1992[3]	30.4%	15%	NA	NA	NA

1 - Washington Behavioral Risk Factor Survey

1a -WA BRFSS with additional special rural survey

2 - Washington Adolescent Health Behavior Survey

3 - Washington Birth Certificate data

4 - Youth Risk Behavior Survey, CDC

5 - National Household Information Survey

6 - Healthy People 2000

7 - Current Population Survey, CDC

*Survey conducted by the Seattle-King County Dept. of Public Health, 1989. No state baseline dat exist for this population.

**Outcome selected based on a Healthy People 2000 goal of 15% initiation rate by youth, age 20.

Chemicaldependency

The misuse of alcohol and other drugs is a serious public health threat in Washington State. Primary prevention of chemical misuse and use by pregnant women are specific topics addressed elsewhere in this report. This section addresses the needs of addicted people who are considered to have an illness and to be in need of treatment like people with many other illnesses.

Alcohol and other drug addiction is a chronic disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. Identified health complications include cirrhosis of the liver, heart disease, spread of sexually transmitted diseases, intentional and unintentional injury, and death.

Alcoholism and other drug addictions are associated with adverse effects on virtually every part of the body including the digestive tract, the liver, as well as the cardiovascular, respiratory, and immune systems. During 1990, 2,155 persons died of causes related to alcohol and other drugs in Washington State, and thousands of people were hospitalized with illnesses directly or indirectly related to alcohol or other drug use.

Chemical dependency also drags down the state's economic output. Employers bear the cost of absenteeism, lowered production, and increased turnover resulting from addiction and substance abuse. Estimates from the 1993 Substance Abuse Costs study are that alcohol and other drug addiction cost the state $1.8 billion annually. This includes an estimated $215.8 million in direct medical costs.

Nationally, per capita consumption of alcohol is declining even as the number of heavy drinkers and people suffering from alcoholism is increasing. Alcohol related traffic crashes are the number one cause of death and spinal cord injury for young Americans. However, auto fatalities in Washington State have been in steady decline since the development of treatment approaches in conjunction with driving under the influence laws. Illegal drug use prevalence is also on the decline, except for certain subpopulations, such as among people over 35 residing in urban centers, racial and ethnic minorities, high school dropouts, and the unemployed.

Adolescent substance abuse is increasing. Prior to 1984, no publicly funded adolescent residential treatment system was available. Current demand for these and outpatient services far outweighs the supply. Alcohol use is associated with suicide, crime, teenage pregnancy, personal injury, and school dropout. In Washington, the Office of the Superintendent of Public Instruction and the Department of Health conducted a survey in 1992 which indicated 46,000 students in grades 6-12 drink daily or binge drink at least monthly. Thirty-three percent of Washington students use alcohol by 6th grade. Four percent of the same population (almost 17,000) use drugs frequently.

Almost 20 percent of hospital discharges in Washington State in 1990 carry a secondary or tertiary diagnosis related to alcohol or other drug abuse. These patients have significantly higher (10-30 percent) costs associated with their primary hospital care. Emergency room care resulting from unintentional injury is often correlated to alcohol misuse. Alcohol is implicated in the four leading causes of unintentional death: vehicle crashes, falls, drowning, and burns.

In order to provide comprehensive, effective treatment for chemical dependency and related disorders, the following steps must be taken:

- Enhance resources for chemical dependency treatment, including outpatient treatment, detoxification, short-term residential treatment, and long-term residential treatment.
- Implement new court strategies which include adequate treatment capacity.
- Train primary medical staff to identify and assess early onset of chemical dependency in their patients and provide intervention approaches and referral options.
- Provide accessible and culturally appropriate chemical dependency services.
- Educate law enforcement, criminal justice systems, schools, and community groups on chemical dependency as a disease and its indicators.
- Assess hospital admission trends and law enforcement trends to determine population subgroups not getting treatment or trends in types of substances being abused.
- Expand chemical dependency services in jails and prisons.
- Assure outreach and case management for pregnant and parenting women, underserved populations, culturally diverse groups, and youth.
- Assure ancillary support services during and after chemical dependency treatment, such as child care, transportation, housing, employment support, and vocational services.
- Expand substance abuse intervention referral and treatment services in the school system, including primary, secondary and higher education.
- Promote the expansion of wellness and employee assistance programs in business and industry.
- Promote reduced employer health benefit costs for businesses which initiate wellness and employee assistance programs.
- Design effective public policy regarding issues such as drug offenses, drunk driving and boating, public inebriation, and involuntary commitment.
- Address the need or public information and counter-advertising regarding use and abuse of alcohol and other drugs.
- Develop effective public policy concerning sale and distribution of tobacco and alcohol and other drugs.
- Develop effective public policy concerning sale and distribution of tobacco and alcohol, age of legal use, and public drinking and smoking laws.
- Work with tribal governments to address alcohol taxation issues on reservations.

Standards for chemical dependency

	Washington State				United States		
	Baseline			Year 2000	Baseline		Year 2000
.	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Liver cirrhosis deaths	1992		9.4	7.12		NA	7.12
Alcohol-related motor vehicle deaths	1992		6.01	7.09	1992	6.92	7.09
Drug-related deaths (per 100,000)	1992		5.6	3.00		NA	3.00
Violent crime offenses	1992		533.57	NA	1992	806.20	NA

All rates are crude rates per 100,000 total population

Sources:

Cirrhosis: Washington State Department of Health, Center for Health Statistics

Alcohol-Related Motor Vehicle Deaths: Washingto Fatal Accident Reporting System, Traffic Safety Commission and Office of Financial Management

Drug-Related Deaths: Washington State Department of Health, Center for Health Statistics

Violent Crime Offenses: Washington State Uniforn Crime Reports, Washington Association of Sheriffs and Police Chiefs and the Washington State Criminal Justice Training Commission

Violence and injury

Injury is the leading cause of death for all Washington residents between the ages of 1 and 44. Each year, over 2,600 Washington residents die due to injuries, and almost 39,000 have injury-related hospitalizations. Many of these deaths and hospitalizations can be prevented, and the severity of many injuries can be reduced.

The serious injury-related public health problems addressed in this section are:

- Child abuse and neglect
- Homicide and aggravated assault
- Interpersonal youth violence
- Suicide among youth and young adults
- Domestic violence
- Sexual assault
- Traffic crash injury and death
- Falls among older adults
- Bicycle crashes
- Drowning
- Fires and burns among young children
- Pedestrian injuries
- School playground injuries
- Poisoning

The purpose of injury prevention is to limit the opportunity for injuries to occur and to minimize their consequences when they do occur. Approaches to this involve a combination of strategies, including education, legislation and enforcement, and engineering and technology (such as car seats and bicycle helmets). One significant barrier to reducing the incidence of injuries is the public perception that injuries occur by chance. Most injuries are not "accidents" — random, uncontrollable, unpredictable events. The fact is that injuries occur in highly predictable patterns, with recognizable risk factors, among identifiable populations. The approach and technology for preventing many injuries exists; what is needed is their widespread implementation.

Injuries occur unintentionally or intentionally. Unintentional injury includes motor vehicle crashes (including those involving bicyclists and pedestrians), falls, drownings, poisonings, and fires and burns. Intentional injury (violence) includes suicide, homicide and assault, rape and sexual assault, domestic violence, child abuse and elder abuse.

Children, adolescents, older adults, and low income people are at highest risk. Injury is the leading cause of death among children and young adults. Over half the deaths of children ages 1-14 are from injury. Children of different ages are at risk for different types of injuries. For infants under one year, homicide and suffocation are the leading cause of injury death. For toddlers, drowning is the leading cause, and for children over age 5, motor vehicle-related deaths predominate.

Young adults are at particular risk: of the 7,520 persons killed in motor vehicle crashes from 1980-90, over half were ages 15-29. Young people between the ages of 15 and 24 are at highest risk of committing and experiencing homicide and assault. At the other end of the age spectrum, older adults are particularly vulnerable to injuries sustained in falls, with over 9,000 hospitalizations per year.

Intentional injury exacts an enormous toll. Traditionally a responsibility of law enforcement and social services, prevention of violence is now a national public health priority. In Washington State, there are almost as many deaths due to suicide as there are motor vehicle deaths, with 684 suicides in 1991. That same year, there were 233 homicides, with at least 55 deaths resulting from domestic violence-related incidents. In 1992, there were 260 homicides. Aggravated assault is the most frequently reported form of violence: 16,234 cases were reported in 1992 alone, an increase of 63% since 1984.

An important consideration in the issue of injury and violence is the Emergency Medical Services and Trauma Care System, which responds to thousands of injury incidents yearly. When an injury incident occurs, a comprehensive trauma system is the best way to control the potential for death and disability that might result from those injuries.

Because injuries vary by age, geographic location and ethnicity, an all-inclusive discussion of injury issues is not possible in this report. Issues not discussed include adolescent work-related injuries, elder abuse, falls among populations other than older adults, farm injuries, fires and burns among age groups other than young children, motorcycle injuries, occupational drowning, poisoning among age groups other than young children, recreational injuries other than bicycling and drowning, sports injuries, and suicide in populations other than youth and young adults.

Child Abuse and Neglect

Child abuse and neglect are killing and disabling children in Washington State at increasing rates. Homicide is the leading type of injury death affecting infants. Thousands of children experience non-fatal abuse and neglect that result in developmental delay, brain damage, physical and sensory disabilities, acute and chronic physical and

mental health problems, future misuse of alcohol and other drugs, academic failure, and other serious consequences.

At 12th grade, 19% of students report a history of physical abuse and 18% report a history of sexual abuse. The data available do not represent all of the children who experience neglect and abuse. Under-reporting in white, middle income, and upper income families may be as high as 60%. In Washington, child abuse and neglect report rates were 42.5/1,000 children in 1990, 45.4/1,000 in 1991 and 48.1/1,000 in 1992.

Obtaining an accurate count of deaths due to abuse and neglect is difficult due to inconsistent definitions, absence of autopsies or death scene investigation, and discrepancies in reporting sources. Reports by the Uniform Crime Reporting System on deaths of children 0 - 18 years old due to abuse and neglect indicate 7 deaths in 1989; 4 in 1990; 10 in 1991 and 22 in 1992.

The cost to society of the consequences of child abuse and neglect are estimated at $500 million for immediate costs of placement and medical and therapeutic services, and an additional $600 million for foster care and juvenile detention.

Child abuse and neglect is rooted in multiple and interacting individual, family and community factors.

Intervention strategies for child abuse and neglect include:

- Institute a uniform method of data collection on child abuse in every county in Washington State, including tribes (with their approval).
- Develop community-based and statewide infant and child death review teams that monitor trends in deaths of infants, children and adolescents.
- Develop home visitation, beginning prenatally and continuing to at least age two, to provide education on appropriate child-rearing strategies and reduce the risk factors that contribute to child abuse and neglect.
- Promote parent education that is culturally appropriate, builds on family strengths, and emphasizes child development, communication, problem-solving, and non-violent behavior management.
- Promote intensive research-based parent education to parents of children with disabilities, conduct-disorders, attention deficit disorder and other behaviors that put them at risk for abuse.
- Develop an ongoing public and professional awareness and educational campaign through the media on parenting and child abuse prevention.
- Provide technical assistance to the business sector to create "family-friendly" work sites, including child care and parent education to reduce risk factors for abuse and neglect.
- Assure availability of well child services, tracking and follow-up for all families, especially high-risk families.
- Promote programs in schools and early childhood settings that teach children that violence on television is unrealistic and violence in reality has serious health and social consequences.
- Assure that all childbirth educators, prenatal care providers and others who serve pregnant women integrate parenting information and abuse risk screening in their services.
- Promote support and self-help groups and crisis respite care for parents with and without risk factors, based on self-referral or professional referral.

- Make mental health and family support services available to all children and adolescents who have experienced abuse and neglect, and to the adult abusers.
- Implement strategies to prevent family violence, substance abuse, and adolescent pregnancy (see standards on youth violence, domestic violence, chemical misuse, and adolescent pregnancy).
- Develop school, early childhood education, and child care policies across state agencies that promote education on appropriate communication, anger management, conflict resolution, and other abuse prevention topics.

Standards for child abuse and neglect

	Washington State				United States		
		Baseline		Year 2000	Baseline		Year 2000
.	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Abuse and neglect Age 0-17 years	NA	NA	NA	*	1986	25.2	25.1
Primary Care Providers Screening for Abuse/Neglect	NA	NA	NA	**	NA	NA	NA

Data Source(s):

Abuse and neglect: Undetermined

Primary care screening for abuse/neglect: Undetermined

Case Definition(s):

Abuse and neglect: Undetermined

Primary care screening for abuse/neglect: Undetermined

Additional Notes:

Rates are per 1,000 couples resident population

*Baseline data expected by 1995. Maintenance of the baseline rate is expected between 1995 and 2000.

**Baseline data expected by 1995. It is assumed that less than 75% of providers currently screen and that screening can increase to 75% by year 2000.

Homicide and aggravated assault

Homicide as presented in the data in this report is death due to injuries purposely inflicted by another person, not including deaths caused by law enforcement officers or legal execution. Aggravated assault is an unlawful attack by one person upon another for the purpose of inflicting severe or aggravated bodily injury, and is usually accompanied by the use of a weapon or by means likely to produce death or great bodily harm.

During 1990-92 Washington State averaged 259 homicides per year, resulting in an age-adjusted rate of 5.4 homicides per 100,000 population. The national average (1987 age-adjusted baseline) was 8.5 per 100,000.

Homicide does not occur evenly in the population, taking its greatest toll among people of color, males, and the young. In Washington (1989-91), 70% of homicide victims were male, and 68% were between the ages of 15-34. African Americans have the highest homicide rate, 29.4 per 100,000, which is six times higher than the rate for the general population.

Random violence is increasing. During 1989-91, 26% of homicide victims in Washington State were killed by strangers, compared to 12% in 1984.

During 1989-1991, Washington averaged 13,950 aggravated assaults per year. About 12% of the victims were hospitalized. Aggravated assault is increasing, with each year's rate in Washington about 5% higher than the previous year.

As with homicide, aggravated assault does not occur evenly in the community. From 1989-91, 79% of the victims were male, and almost 63% were between 15-34 years of age.

Many assaults go unreported. A major study done in Northwestern Ohio found that only one in four of the assaults resulting in emergency room treatment were reported to the police. This suggests that most violence may be unseen by the police.

Most violent crimes occur in the most heavily populated areas of the state. Interpersonal violence is not, however, exclusively an urban problem. Several rural areas have violent crime rates that are high. Violent crime is also not distributed evenly throughout urban centers; certain communities experience significantly greater rates of violent crime than others.

Most violence occurs between people who know each other, at least one of whom is unable to tolerate frustration or resolve conflict. Long before the most extreme expressions of violence occur, a history of hitting, beating, fighting, and abuse often exists.

High homicide and aggravated assault rates are related to poverty, unemployment, availability of handguns, alcohol and other drugs, racism, exposure to media violence, school and early childhood education experiences, and family management problems.

Fifty-five percent of homicides in Washington are committed with firearms. There is a connection between the proliferation of handguns and the mounting homicide rate. Researchers in the United States and Canada examined the homicide statistics for Seattle and Vancouver between 1980 and 1986. These two cities are similar in size, rates of

unemployment, and income. Seattle had 388 homicides during the six years, Vancouver had 204 homicides. In both cities, the number of homicides from non-handgun violence—including knife attacks—was about the same. In Seattle, where handguns are freely available, 139 people were shot to death. In Vancouver, with restrictive handgun laws, 25 people were shot to death during the same period.

Alcohol and drug consumption are associated with all types of homicide except child murder. The National Institute on Alcohol Abuse and Alcoholism has estimated that about one-half of all homicides in the United States are related to use of alcohol. In Seattle, almost two-thirds of homicide victims have alcohol in their bodies.

The average child in the United States will witness 8000 murders and 100,000 acts of violence on television before completing elementary school; by 18 years of age, a child is likely to have seen 200,000 acts of violence on television, including 40,000 murders.

Intervention strategies for homicide and assault include:

- Promote jobs and employment opportunities for youth.
- Reduce exposures to media violence.
- Develop and implement media campaigns to educate the public that high homicide rates are unacceptable.
- Expand successful community based youth alcohol and drug outreach and treatment services.
- Limit access to firearms by persons who are not prepared to use them safely and responsibly.
- Require anger management counseling and alcohol treatment as conditions of reduced sentences.
- Enforce the domestic violence law and educate law enforcement professionals regarding the letter and spirit of the law.
- Expand health education curricula from elementary to high school to teach children how to manage hostility and aggression with nonviolent means.
- Promote peer counseling and conflict resolution.
- Expand parenting education classes to include violence prevention.
- Improve the identification, referral, and treatment of persons at high risk of violent behavior because of chronic use of alcohol and other drugs.
- Equip television sets with a microchip that would enable parents to block unwanted programming.

Standards for homicide and aggravated assault

	Washington State				United States		
	Baseline			Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Homicide							
All Homicides - Total Population	1990-92	778	5.4	5.4	1987	8.5	7.2
Age 0-3	1990-92	37	3.9	3.4	1987	3.9	3.1
African American Men, Age 15-34	1990-92	104	103.5	90.8	1987	90.5	72.4
Hispanic Men, Age 15-34	1990-92	42	28.4	28.4	1987	53.1	42.5
African American Females, Age 15-34	1990-92	20	24.8	21.7	1987	20.0	16.0
Native Americans	1990-92	43	16.0	14.0	1987	14.1	11.3
Firearm Homicides Total Population	1990-92	438	3.1	3.1	NA	NA	NA
Aggravated Assault							
Firearm Related - Total Population	1992	3925	76.7	72.3	NA	NA	NA

Data Source(s):

Deaths - Vital Statistics

Aggravated assaults - Washington Association of Sheriffs and Police Chiefs - Uniform Crime Report

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Case Definition(s):

Homicides include all deaths coded to E960-E969.

Firearm-related homicides include deaths coded to E965.0-E965.4.

Aggravated assault: Attacks intended to inflict severe injury (see Washington Uniform Crime Reports.)

Additional Notes:

Rates are per 100,000 resident population.

Death rates for the total population are age-adjustec

Interpersonal youth violence

Violence among youth aged 10-17 is at an all-time high, with nearly 3,000 youth arrested for violent offenses (homicide, manslaughter, aggravated assault, rape and robbery) in Washington in 1991 (5.3/1,000). This is double the number and rate recorded in 1982 (1,449 and 2.7/1,000 respectively). These figures substantially underestimate the actual number of crimes committed, since reports of committed offenses are three to four times greater than the number of arrests. Young people between the ages of 15 and 24 are at highest risk of committing and experiencing violence.

Factors contributing to youth violence include poverty, racism, poor education, easy access to guns, glamorization of violence in the media, family and community dysfunction, fractured support systems, child abuse and neglect, and abuse of alcohol and other drugs.

Prevention efforts are more cost effective than after-the-fact remedies and interdiction. The statewide average cost of detaining a youth in a state-run juvenile rehabilitation facility is $47,000 per year. This cost does not include the loss of property, life, or other damages that led to each child's incarceration. Comprehensive case-managed prevention services for high risk youth cost an average of $1020 per youth. Less intensive services, which may include school or community-based recreational and educational opportunities (but not on a case-managed basis) average $130 per youth.

Intervention strategies for youth violence include:

- Promote public education on positive options to violent behaviors and activities.
- Promote anger management and conflict resolution training for parents, teachers, other caregivers, and youths.
- Promote educational programs and classroom management techniques that enhance self esteem.
- Promote entertainment that depicts healthy, respectful relationships among people, and between people and the environment.
- Develop Neighborhood Empowerment Zones to promote economically healthy communities.
- Create job training and placement programs.
- Develop partnerships with and incentives for businesses to create more living wage jobs.
- Promote integrated, comprehensive support programs and services for children and families.
- Promote programs that offer alternatives to street life for youth, such as after school tutoring, recreational, and mentoring programs.
- Promote educational programs that offer positive alternatives to the use of alcohol and other drugs.
- Provide treatment and support services for alcohol and other drug abusers.
- Conduct public education campaigns on the consequences of deadly weapon use and provide information and role modeling on peaceful alternatives to their use.
- Limit access to firearms by youth who are not prepared to use them safely and responsibly.
- Recognize media outlets which restrict graphic depiction of violence, and reward responsible parties.
- Analyze arrest data to identify high risk groups and geographic areas and to identify modifiable risk factors.
- Involve youth in the development of policies and interventions.

Standards for interpersonal youth violence

	Washington State				United States		
.	Year	Baseline Count	Rate	Year 2000 Target Rate	Baseline Year(s)	Year 2000 Target Rate	Rate
Violent Crime - Arrests Among Youth 10-17 Years	1991	2,878	5.3	4.2	NA	NA	NA
Weapons Brought to School by 6th-12th Grade Students	1992	3,028	212.2	169.8	NA	NA	*

Data Source(s):

Violent crime arrests - Washington Association of Sheriffs and Police Chiefs - Uniform Crime Report

Weapons brought to school - SPI/DOH Survey of Adolescent Health Behaviors.

Population statistics - Department of Health, Center for Health Statistics, 7/5/94.

Case Definition(s):

Violent crime includes murder, manslaughter, robbery, aggravate assault, and rape. (See Uniform Crime Reports for additional information.)

Weapons include guns, knives and clubs.

Additional Notes:

Violent crime rates are per 100,000 resident population.

Weapon-carrying rates are per 1,000 6-12th grade students sampled (1992 sample size = 14,269).

* National objective includes 14-17 year olds. Baseline data are not available. It is assumed that a 20% reduction, nationally, can be accomplished by year 2000.

Suicide among youth and young adults

From 1990-1992, 325 young Washingtonians age 15-24 killed themselves. While most public attention is focused on violence committed against others, the suicide rate among youth and young adults in Washington is nearly double that of homicide. Suicide is the second leading cause of death for 15-24 year olds in Washington; it is the third leading cause for that age group nationally.

In 1992, the age-adjusted suicide rate for Washington State was 12.7 per 100,000. The U.S. baseline for suicide was 11.7 per 100,000 in 1987. The suicide rate for males is more than three times higher than the rate for females. Teenagers (15-19 years of age) have the highest combined rate of hospitalized suicide attempts and deaths, followed by young adults (20-24 years of age).

In 1991, 804 hospitalizations for suicide attempts were reported among 15-24 year olds (not including persons treated in emergency rooms or seen by private physicians). By comparison, assaults accounted for about 490 hospitalizations in this age group. The Children's Safety Network estimates the cost of medical care for each hospitalized youth suicide attempt at $27,501. This equals approximately $22 million in medical care costs for hospitalized suicide attempts in Washington State among 15-24 year olds in 1991.

A recent Washington survey on adolescent health behaviors found that more than one of ten students has attempted suicide; one fifth of the students at grades 8 and 12 and nearly one fourth of the students in grade 10 had seriously thought about taking their own life. During 1989-91, firearms accounted for 59% of all suicides among 15-24 year olds, far exceeding the next most common cause, suffocation, which accounted for 20%.

Some personal factors which contribute to suicide among young people include depression, abuse of alcohol and other drugs, alienation, inadequate coping skills, unrealistic self-expectations, and an inability to tolerate negative feelings. The research is inconclusive regarding the role of sexual orientation as a possible contributing factor to youth suicide. Community and family factors include availability of lethal weapons, contagion after a completed suicide, media sensationalism regarding suicide, and child abuse and neglect.

Intervention strategies for suicide among youth and young adults include:

- Educate parents about the increased risk of suicide when firearms are present in a household.
- Reduce youth access to firearms.
- Institute uniform methods of suicide surveillance in every county in Washington State.
- Develop a generic contingency plan to address suicide clusters, which could be tailored for local health departments in the event of a cluster.
- Develop skills-building programs in schools for at-risk youth to increase problem-solving abilities; enhance communication skills, and increase academic performance.
- Promote early identification and treatment of substance abuse (see standards on substance abuse).
- Promote early identification and treatment of mental illness in youth and young adults, including primary care mental health programs in schools.
- Increase availability of mental health counseling services for non-psychotic youth, especially those from low income backgrounds.
- Develop crisis counseling centers (shown to have a positive effect on white, female adolescents).

Standards for youth suicide

	Washington State				United States		
	Baseline			Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Suicide Deaths							
Age 15-19	1990-92	124	12.8	11.2	1987	10.3	8.2
Age 20-24	1990-92	201	18.6	18.6	1987	25.2	21.4*
Firearm-Related Suicide Deaths							
Age 15-19	1990-92	74	7.6	6.6	NA	NA	NA
Age 20-24	1990-92	115	10.6	10.6	NA	NA	NA
Nonfatal Hospitalized Suicide Attempts							
Age 15-19	1990-92	1309	135.0	117.0	NA	NA	**
Age 20-24	1990-92	1,126	104.2	104.2	NA	NA	NA

Data Source(s):

Deaths - Vital Statistics Nonfatal hospitalized suicide attempts - CHARS

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Case Definition(s):

Suicide deaths and attempts include events coded to E950-E959.

Suicide attempts are considered nonfatal if patient was alive at time of hospital discharge.

Additional Notes:

Suicide death and attempt rates are per 100,000 resident population.

* National objectives includes only men 20-24 year of age.

** Baseline data expected by 1991. Improvement of 15% expected between 1991 and 2000.

Domestic violence

Former U.S. Surgeon General C. Everett Koop has called domestic violence the major health care problem in the United States, affecting more individuals and families than any other single problem. Domestic violence is recognized as being at the core of other major social problems: individual alienation, child abuse, other crimes of violence against person or property, and abuse of alcohol and other drugs. Domestic violence, along with other types of family violence — child abuse and neglect, sibling violence, and the abuse of the elderly — is destroying families and communities. Efforts to control it have been stalled by the lack of coordinated, comprehensive, community-based, and adequately funded plans.

Domestic violence is a pattern of controlling behavior that consists of physical, sexual, and/or psychological assaults. It is primarily a learned pattern of behavior whose effects, without intervention, become more destructive over time.

Domestic violence, particularly of an injurious or life threatening nature, is primarily perpetrated by men toward women. Women are victims of severe violence in 90% of the cases. (Berk et al. 1983, Rosenbaum et al., 1981, and Ganley, 1989). In addition to the primary victims, children who witness violence between their parents are psychologically affected as though they themselves were the direct victims of abuse.

Battery in domestic settings is the single major cause of injury to women in the United States, exceeding rapes, muggings, and even motor vehicle crashes. The risk of child abuse is significantly higher when partner assault is also reported. Nationally, 75% of battered women say that their children are also battered. It is estimated that in 1992 nearly 30% of all homicides in the United States were a result of domestic violence.

Intervention strategies for domestic violence include:

- Improve community accountability in responding to domestic violence.
- Increase safe shelter and services for victims of domestic violence throughout Washington, and ensure responsiveness to different cultures.
- Promote education on domestic violence for all health care and other service professionals.
- Enhance the capability of the domestic violence hotline with 24-hour bilingual crisis line staff.
- Increase the number of treatment programs for domestic violence perpetrators.
- Increase support services for children of battered women.
- Improve data collection of domestic violence incidents from criminal justice, health care and other systems.
- Develop uniform system of classifying and tracking health care responses to injury and crimes related to domestic violence
- Increase government and non-government leadership commitment to ending domestic violence.

Standards for domestic violence

	Washington State				United States		
	Baseline			Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Physical Abuse of Women by Male Partners	NA	NA	NA	*	1985	30.0	27.0
Domestic Violence Homicides	1990-92	157	1.0	0.9	NA	NA	NA

Data Source(s):

Physical abuse: Undetermined

Homicides: Washington Association of Sheriffs an Police Chiefs—Uniform Crime Reports

Case Definition(s):

Physical abuse: Undetermined

Homicides: Includes homicides where relationship of victim to perpetrator is reported as son, wife, daughter, husband, mother, step-daughter, in-law, girl friend, boy friend, ex-wife, ex-husband, common law wife, or homosexual relationship.

Additional Notes:

Abuse rates are per 1,000 couples. Domestic violence homicide rates are per 100,000 resident population

* Baseline data expected by 1995. Improvement of 3.3% expected between 1995 and 2000

Sexual assault

The term sexual assault refers to a broad continuum of violent acts which include sexual contact. The sexual contacts can take a variety of forms and have varying levels of intrusiveness, but they have a common purpose to exert control and power over the victim and/or to achieve sexual gratification at the expense of another. Examples of sexual assault include: harassment, indecent liberties, marital rape, child molestation, rape of a child, incest, and rape.

Women who have been sexually assaulted are often reluctant to report the crime to law enforcement. Far too often, experience has shown that reporting results in attitudes and actions which blame the victim and make it extremely difficult to get help. The result is that rape is one of the most under-reported crimes in the U.S. The FBI currently estimates that only 10% of rapes and attempted rapes are reported to a law enforcement agency. The study "Rape in America: A Report to the Nation" states that 78% of all forcible rape victims knew their attackers; only 16% of acquaintance rape victims, however, reported the crime to the police.

According to the Washington State Uniform Crime Report, 3,664 females reported to police that they were victims of forcible rape or attempted rape in Washington in 1992. On the other hand, over 20,000 victims of sexual assault sought state-funded services in Washington during fiscal year 1993.

Another factor hindering a clear assessment of rape as a public health problem is that available data on rape includes rape of females only. The Uniform Crime Report uses an antiquated common law definition of "rape," which is recognized as no longer accurate. Rape of males, if reported as a crime, is classified as a Class II (non-violent) sex offense. In addition, there are definitional differences which confuse the situation. For example, the federal Victims of Crime Act defines "primary" and "secondary" victims, but Washington State agencies do not use primary and secondary terminology.

Sexual abuse has been linked to abuse of alcohol and other drugs, mental health problems, teen pregnancy, runaways, prostitution, school dropout, child abuse and neglect, and suicide. Women who have been victims of rape are 13.4 times more likely to have had two or more major alcohol-related problems than women who had never been crime victims (Rape in America, 1992). In a clinical sampling, it was found that 70% of women seeking psychiatric emergency room care had been victims of sexual abuse (Briere & Zaidi, 1989). Two-thirds of a sample of young women who became pregnant as adolescents had been sexually abused; this rate is two times higher than for the general population (Boyer & Fine, 1992). In a survey of low-income (recipients of AFDC), single mothers, it was found that the mother's history of child sexual abuse greatly increases the odds for her children being victims of neglect (Zuravin & DiBlasio, 1992.)

Intervention strategies to deal with sexual assault include:

- Expand community education efforts regarding incidence, prevention strategies, attitudinal change, and awareness by professionals of early intervention and reporting procedures.
- Assure prompt and early treatment of child sexual assault victims to reduce the trauma of sexual abuse and alleviate the long term effects.
- Assure prompt treatment of youthful sexual assault offenders, so they will be less likely to re-offend.
- Increase the availability of advocacy services that enable victims to report.
- Enact passage of laws guaranteeing a rape victims' confidentiality in news media reporting.
- Improve and coordinate data collection from criminal justice, health care, social service, and other agencies.
- Develop a uniform data collection and tracking system, with uniform definitions, which permits year to year comparison of data.
- Work with established community-based sexual assault programs to improve the legal rights of sexual assault victims.

Standards for sexual assault

	Washington State				United States		
	Baseline			Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Reported Rapes	1992	3,664	149.3	156.8*	1986	120.0	108.0**

Data Source:

Rape - Washington Association of Sheriffs and Police Chiefs-Uniform Crime Reports.

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Case Definition(s):

Rape of females, as reported to law enforcement agencies.

Additional Notes:

Rape rates are per 1,000 resident female population.

* It is assumed that rape is under-reported. An increase in the reported rapeswill mean that reported rates more closely approximate the true incidence.

** National objective includes only females age 12 and older.

Traffic crash injury and death

Motor vehicle traffic crashes are a major cause of death in Washington State. In 1992, 747 people were killed in traffic collisions in the state. Young drivers (age 16 to 20) are substantially over-represented in crashes, accounting for 2.4 times more crashes than their proportion of the driving population. Motor vehicle crashes are the leading cause of unintentional injury and death for children aged 1 - 14 in Washington.

Current Washington law only allows for secondary enforcement of seat belt laws for adults (i.e. law enforcement may not stop vehicles for a seat belt violation, but they may ticket for seat belt violation if the vehicle is stopped for another unrelated offense). It is estimated that seat belt usage may be increased by as much as 10% if the law becomes primary.

Current law requires children to be secured in approved child safety seats up to three years of age. Child safety seats lower a child's chance of death by 71% and chance of injury by 69%. Compared to child safety seats, safety belts offer young children less protection, with a 29.5% effectiveness in preventing fatalities for toddlers. In 1991, child safety seat use prevented more than 180 deaths and 70,000 injuries nationwide, at a total savings of $3.5 billion, including $221 million in medical costs.

Alcohol remains a major contributor in traffic fatalities. In 1992, 47.3% of all traffic fatalities in Washington involved a driver with alcohol in their system. Teenage drivers with blood alcohol concentrations of 0.05% to 0.10% are far more likely than sober teenage drivers to be killed in single-vehicle crashes.

A Maryland study of its provisional licensing program showed a 5% reduction in crashes for 16 and 17 year olds. A California study of its provisional licensing system found a reduction of 5.3% in crashes involving 15 to 17 year old drivers.

Intervention strategies include:

- Promote public education for the general public on seat belt use and safe driving.
- Promote legislation for primary enforcement of seat belt laws.
- Implement convertible child safety seat give away and subsidy programs for all low income babies.
- Enhance child safety seat loaner programs.
- Promote safety restraint legislation that will strengthen current law to require child safety seats up to age four or weight of forty pounds.
- Promote administrative license suspension (ALS) laws while maintaining the positive aspects of the state's deferred prosecution program.
- Change driving under the influence (DUI) standards to .08 blood alcohol level for adults.
- Strengthen the Emergency Medical Services/Trauma System to reduce the potential for death and disability that might result from traffic injuries.
- Expand the hospitalization data set to include the location of the injury incident; currently, only the location of the hospital to which the person is transported is reported.

Standards for traffic crash injury and death

	Washington State				United States		
	Baseline			Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Motor Vehicle Deaths							
Total Population	1992	747	14.2	12.8	1987	18.8	16.8
Age 15-19	1990-92	287	22.0	19.8	1987	36.9	33.0*
Age 0-14	1990-92	151	3.3	3.0	1987	6.2	5.5
Motor Vehicle Hospitalizations							
Total Population	1992	5,307	106.2	100.9	NA	NA	NA
Safety Factors							
Safety Belt Use: Automobile Driver	1993	124,248	78.1	85.0	1988	42.0	85.0
Car Seat Use: Age 0-4	1993	3,421	47.7	60.0	NA	NA	NA
Drinking and Driving: 12th Grade Students	1992	484	21.0	10.0	NA	NA	NA

Data Source(s):

Motor vehicle deaths - Vital Statistics

Motor vehicle-related hospitalizations - CHARS

Seat belt use - Washington Traffic Safety Commission-1993 Fall Observation Survey

Child restraint use - Washington Traffic Safety Commission-MV Crash Statistics

Drinking and driving - SPI/DOH Survey of Adolescent Health Behaviors

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Case Definition(s):

Motor vehicle injuries include all deaths or hospitalizations coded to E810-E825.

Seat belt use includes drivers wearing a shoulder harness.

Child restraints include car seats (lap/shoulder restraints not included).

Drinking and driving includes 12th grade students who report drinking and driving at least once durin the 30 days preceding the survey date.

Additional Notes:

Motor vehicle death and hospitalization rates are pe 100,000 population.

Death rates for the total population are age-adjusted.

Safety belt use rates are per 100 observed drivers (1993 sample size =159,100)

Child restraint use rates are per 100 children in motor vehicle crashes (1993 crash count = 7,172)

Drinking and driving rates are per 100 12th grade students sampled (1992 sample size = 2,270)

* National objective includes 15-24 year-olds.

Falls among older adults

Unintentional fall-related injuries were the leading cause of injury death among older adults during 1989-1991. The rate of injury death for 70-74 year olds was 14/100,000 while the rate for those 85 years of age or older was 156/100,000. Most falls (77%) occur in the home. Rates of hospitalization for falls increase with age. For those 85 or older, the rate of such hospitalization for the 1989-1991 period was 4904/100,000.

Falls are the leading cause of injury-related hospitalization in Washington, averaging 14,754 hospitalizations per year (over three times the number due to motor vehicle crashes). Almost 60% of fall-related hospitalizations are of adults age 65 and over.

In addition to death and serious injury, falls frequently result in the loss of independence for older adults. Forty-two percent of older adults admitted to hospitals for fall-related injuries are discharged to nursing homes or intermediate care facilities.

In 1989, over $53 million dollars in hospital charges alone were generated because of fall-related injuries to people 65 years of age and older. Depending on the injury, falls often result in the need for extensive rehabilitation, at a cost much greater than initial hospitalization.

Forecasts of population growth predict that the 1990 population of persons over 75 (238,000) will grow to 464,000 by 2020, with a more rapid growth among those aged 85 and older. This rapid growth, coupled with the fact that this segment of the population suffers the highest risk of both death and hospitalization from fall-related injuries, portends a dramatic increase in such fall injuries over the next several decades, unless comprehensive prevention measures are taken. As with most injury prevention strategies there is no single intervention which will, by itself, dramatically reduce the impact of fall injuries. Success lies in the promotion of several strategies to bring about an overall reduction of statistical risk.

Intervention strategies for prevention of falls include:

- Set standards of care for health care providers, clinics, and health care institutions to insure that risk of falling is routinely assessed and addressed.
- Set more rigorous safety standards for new housing intended for older adults and provide economic incentives for older adults in existing housing to retrofit their homes with adequate lighting, stairway railings, non-skid surfaces, grab bars, etc.
- Conduct public information and awareness campaigns and provide economic incentives to encourage older adults to purchase appropriate footwear and make other environmental improvements that reduce their risk of serious fall-related injuries.
- Encourage programs and incentives that reduce the social isolation of at-risk older adults through the provision of in-home services, by family members, health care providers, and volunteers.
- Encourage appropriate exercise and nutritional change among women in their 40s to prevent or reduce physiological changes that can increase the risk of falls-related injuries in later years.

Standards for falls and fall-related injuries

	Washington State				United States		
	Baseline			Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Fall Deaths							
Total Population	1992	302	3.3	3.0	1987	2.7	2.3
Age 65-84	1990-92	296	18.7	16.5	1987	18.0	14.4
Age 85+	1990-92	304	174.6	153.6	1987	131.2	105.0
Hospitalization for Hip Fracture							
Age 65+	1990-92	12,297	700.6	630.6	1988	714.0	607.0
Women Age 85+*	1990-92	3,812	3074.7	2224.9	1988	2721.0	2177.0

Data Source(s):

Deaths - Vital Statistics

Hospitalizations - CHARS

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Case Definition(s):

Falls and fall-related injuries include all deaths coded to E880-E888.

Hip fracture includes all resident hospitalizations with a principal diagnosis of N820.

Additional Notes:

Rates are per 100,000 resident population.

Death rates for the total population are age-adjusted.

* U.S. baseline and target are for white women 85 and older

Bicycle crashes

During 1989-91, 35 deaths attributed to bicycling were reported, an overall death rate of 0.2/100,000. Nineteen of these deaths (54%) occurred to riders under the age of 19 years. Bicycling injuries accounted for 1618 hospitalizations over this same time period for an overall hospitalization rate of 11.1/100,000. It was the second leading cause of unintentional injury hospitalization for children 5-14 years old (707 hospitalizations).

In addition to the deaths from bicycle injuries, almost 10% of patients hospitalized for bicycle related injuries are transferred to other facilities for additional or long term rehabilitative care. Head injuries are the most frequent injury suffered by a bicycle rider and often leave the victim with residual deficits that require long term intervention and follow-up.

Bicycle helmets reduce the risk of serious head injuries by 85%. A 50% helmet use rate would result in 840 fewer head injuries among children ages 5-9 over a five year period. This reduction would achieve a cost savings of approximately $9.5 million, based on the median cost of hospitalized head injuries of $11,306.

Intervention strategies to reduce bicycle injuries include:

- Require all riders to wear bicycle helmets. Provide subsidized or no-cost helmets for low income bicycle riders.
- Promote training and education on the fitting and wearing of bicycle helmets.
- Implement bicycle training programs and incentives for those who purchase bikes.
- Educate motor vehicle drivers and bicyclists on the rules of the road with respect to bicyclists.
- Incorporate transportation system design features that safely accommodate bicyclists, including separated bike paths, painted bike "lanes," widening and paving rural shoulders as well as other modifications.

Standards for bicycle crash injuries

	Washington State				United States		
		Baseline		Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Bicycle-Related Hospitalizations	1989-91	1,618	11.1	8.9	NA	NA	NA
Bicycle Helmet Use Amount All Cyclists	1984	641	39.5%	50.0%	1984	6.0	50.0

Data Source(s):

Bicycle-related hospitalizations - CHARS

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Bicycle helmet use - Traffic Safety Commission

Case Definition(s):

Bicycle-related hospitalizations include all hospitalizations coded to E800.3, E801.3, E802.3, E803.3, E804.3, E805.3, E806.3, E807.3, E810.6, E811.6, E812.6, E813.6, E814.6, E815.6, E816.6, E817.6, E818.6, E819.6, E820.6, E821.6, E822.6, E823.6, E824.6, E825.6, E826, E826.1, E826.9.

Bicycle helmet use based on observation of bicyclists.

Additional Notes:

Bicycle hospitalization rates are per 100,000 resident population.

Bicycle helmet use rates are per 100 cyclists, based on observation of 1,624 cyclists.

Drowning

Unintentional drowning is the second leading cause of injury death for children under 5 years of age in Washington, with a rate of 3.6/100,000, and the third leading cause of unintentional injury death for children 5-19 years old. From 1989 through 1991, 100 children under the age of 19 died due to unintentional drowning. For the total population, drowning is the fourth leading cause of unintentional injury death in Washington, with 345 deaths from 1989 through 1991, a rate of 2.4 per 100,000.

The circumstances of drowning deaths vary with age. For children under five years of age, the leading site of drowning death in Washington is swimming pools, followed by bathtub drowning. For children 5-14 years old, pools and open water swimming are the leading sites, with boating and open water swimming the leading circumstances in the 15-24 year age group. Boating is the leading cause after the age of 25.

Typical preventable causes of drowning include leaving young children unattended, inability to swim, lack of knowledge of water safety, lack of personal flotation devices when boating or near open water, lack of lifeguards in designated swimming areas, use of alcohol and other drugs while boating or swimming, and boating under unsafe conditions.

Recreational water health issues other than drowning are discussed in the environmental health section of this appendix.

Intervention strategies to prevent drowning include:

- Develop data collection capabilities on use of personal flotation devices among boaters in order to identify areas with low usage and high drowning rates for targeted interventions.
- Promote legislation requiring isolation pool fencing for new and existing residential pools.
- Promote education on CPR, water safety, and close supervision of young children around water.
- Promote education of older children concerning use of personal flotation devices around water, drowning risks, the dangers of alcohol and other drug consumption, and CPR.
- Promote adult education about the risks of using alcohol and other drugs around water, safe boat operation, the importance of wearing life jackets, and carrying necessary safety equipment.
- Enforce laws regulating use of alcohol while boating.

Standards for water-related injuries

	Washington State				United States		
		Baseline		Year 2000		Baseline	Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Drowning Deaths							
Total Population	1992	126	2.6	2.0	1987	2.1	1.3
Age 0-4	1990-92	21	1.8	1.8	1987	4.2	2.3
Males, Age 15-34	1990-92	137	5.8	4.2	1987	4.5	2.5
Boating-Related Drownings							
Total Population	1990-92	92	0.6	0.5	NA	NA	NA

Data Source(s):

Deaths - Vital Statistics

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Case Definition(s):

Drowning includes all deaths or hospitalizations coded to E830, E832 and E910.

Boating-related drownings include deaths coded to E830.0-E830.4, E830.8- E830.9, E832.0-E832.4, and E832.8-832.9.

Additional Notes:

Drowning and boating death rates are per 100,000 resident population.

Death rates for the total population are age-adjusted.

Fires and burns among young children

Unintentional fires, burns, scalds and related asphyxia are the second leading cause of injury hospitalization for children under five years of age in Washington, with an average of 446 hospitalizations per year.

According to the Children's Safety Network, the average cost for medical care for a hospitalized burn victim in Washington is $50,009; the average medical care cost for a hospitalized scald burn victim is $39,753. Costs related to lost productivity and quality of life are much higher.

Smoke detectors have been shown to reduce the potential death in 86% of fires and the potential of severe injuries in 88%. In 30.4% of all fires no smoke detection system was present. Numerous studies have examined the efficacy of smoke detector giveaway campaigns or low-cost purchase opportunities, with results suggesting that such programs should be carefully targeted at low-income neighborhoods known to have high proportions of children and/or elderly residents. Cigarettes are estimated to cause 45% of all fires and 22%-56% of deaths from house fires.

Nationally, children under five cause more than 5,000 residential fires by playing with lighters, resulting in approximately 150 deaths and more than 1,000 injuries. The Consumer Product Safety Commission estimates that two-thirds of these fire-related deaths will be prevented by new standards mandating that disposable lighters be child-resistant.

Fire safety education is a promising intervention and is most effective through a multifaceted approach. Individual fire safety education programs have been evaluated with mixed results, indicating a need for monitoring and evaluation of fire safety education programs in reducing incidence of fire and burn-related morbidity and mortality.

Intervention strategies for prevention of fires and burns include:

- Promote smoke detector giveaway and installation programs to address high risk, low income populations.
- Promote smoke detector battery giveaway through fire departments and regular public health nurse home visits.
- Establish building codes requiring sprinkler systems in all new housing.
- Promote legislation allowing only fire-safe cigarettes that self-extinguish.
- Enforce new standards for child-resistant lighters.
- Promote education regarding fire safety, including development of home fire safety plans.
- Develop legislation for statewide and tribal bans on the sale of dangerous fireworks.
- Promote public education to avoid illegal fireworks, use fireworks safely, and attend professional displays as a safe alternative.
- Ban the sale of baby walkers, which allow very young children to reach stove-top pots and pans, creating a serious scalding hazard and potentially long-lasting disfigurement.
- Promote legislation requiring water temperature regulators to prevent surges and subsequent scalds. Assure that all new water heaters have temperature regulators. Promote incentives for families to retrofit older homes to protect children from tap water scalds.
- Promote use of spill-proof containers for hot liquids in homes with young children.

- Include fire and burn prevention education in parenting classes.
- Require standardized fire and burn prevention education for all daycare facilities and preschools.
- Promote community fire and burn prevention education programs that focus on home hazard surveys, home fire evacuation planning, and home detection and suppression equipment.

Standards for fires and burns

	Washington State				United States		
	Baseline			Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Residential Fires							
Deaths, Age 0-4	1990-92	21	1.8	1.8	1987	4.4	3.3
Burns and Fire-Related Asphyxia							
Deaths, Age 0-4	1990-92	21	1.8	1.8	NA	NA	NA
Hospitalizations, Age 0-4	1990-92	452	39.0	33.0	NA	NA	NA
Safety Factors							
Functional Smoke Detectors in Homes	NA	NA	NA1	*	1989	81.0	100.0
Functional Fire Extinguishers in Homes	NA	NA	NA7	*	NA	NA	NA

Data Source(s):

Fire and burn deaths - Vital Statistics

Fire and burn-related hospitalizations - CHARS

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Case Definition(s):

Residential fire deaths include all deaths coded to E890-E899.

Burns and fire-related asphyxia includes deaths and hospitalizations coded to E890-E899 and E924.

Additional Notes:

Death and hospitalization rates are per 100,000 resident population.

Smoke detector and fire extinguisher rates are per 100 homes.

* Baseline data not available. Data of availability unknown. It is assumed that at least 95% of Washington residences should have functional smoke detectors and fire extinquishers by the year 2000.

Pedestrian injuries

Pedestrian injuries tie with drowning as the third leading cause of unintentional injury death for 1989-1991 (2.4/100,000). This was the second leading cause of unintentional injury death for children 5-19 years old for the same time period. Because of their greater vulnerability, adults over the age of 60 suffered the highest death rate. In addition to fatalities, pedestrian motor vehicle collisions often result in serious debilitating injuries that require long term medical and rehabilitative care.

Causes of pedestrian injuries include street designs which encourage high speed traffic in localities where pedestrian travel is also necessary, acute alcohol intoxication among adult pedestrians, frailty and underlying disease processes of older adults, and inadequate driver awareness of pedestrian laws and traffic.

The primary intervention strategy is to promote the wide dissemination of the 1993 Washington State Department of Transportation and Washington Traffic Safety Commission Strategic Pedestrian Plans to local communities and provide consultative services to groups to implement pedestrian safety programs in their communities. These plans provide guidelines for the development of pedestrian safety programs aimed at local government, educators, law enforcement and engineering professionals, families and the media. The success of these programs lies in the coordination and customization of efforts rather than a simple mechanical implementation of individual pieces.

Standards for pedestrian injuries

	Washington State				United States		
	Baseline			Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Pedestrian Deaths							
Total Population	1992	105	1.8	1.8	1987	3.1	2.7
Age 5-19	1990-92	54	1.7	1.6	NA	NA	NA
Age 60+	1990-92	99	4.3	4.0	NA	NA	NA
Pedestrian Injury Hospitalizations							
Total Population	1990-92	1,863	12.1	11.1	NA	NA	NA

Data Source(s):

Pedestrian deaths - Vital Statistics

Pedestrian injury hospitalizations - CHARS

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Case Definition(s):

Pedestrian injuries include all deaths or hospitalizations coded to

Additional Notes:

Pedestrian death and hospitalization rates are per 100,000 resident population.

Death and hospitalization rates for the total population are age-adjusted.

School playground injuries

In 1990-1992, school playground injuries caused 1,138 hospitalizations among children 10-17 years of age. Children between the ages of 10 and 17 are more likely to be injured at school than anywhere else. There are as many as 50,000 school playground injuries in Washington State every year. Exact costs of playground injuries in Washington are not known.

Effective supervision of playgrounds is needed at schools to properly instruct children and to maintain discipline. This is perhaps the most important and cost-effective aspect of school playground injury prevention.

In Washington, falls from climbing devices, swings, and playground equipment with decks or platforms are responsible for 81%, 43%, and 47%, respectively, of the reported incidents. This is consistent with school injury surveillance results in other studies.

Establishing and enforcing rules of behavior on school playgrounds is important in preventing injuries. Costs of doing this mainly involve scheduling adequate, knowledgeable staff to be on the playgrounds during the children's periods of "free play."

The State Board of Health is required by statute to regulate virtually all aspects of K-12 school health and safety. Local health departments are required to perform inspections of schools, including playgrounds. The costs of doing inspections are not precisely known, since they are not currently being done by most local health departments. A rough estimate of required time is 3 hours times 1471 schools, or 4,413 hours per year, plus travel, meetings and administrative time. Approximately five staff would be needed, statewide, to inspect school playgrounds, evaluate their supervision programs, and check the injury reporting systems for consistency and completeness. These inspections should be supplemented by parents and school insurance companies.

Resilient surfacing is needed underneath all play equipment, depending on its height. While there is a cost of approximately 80 cents per square foot up to twelve or thirteen dollars per square foot, there is a direct correlation between fall-protection surfacing and injury severity.

Plan reviews of playgrounds are needed to assure that spacing between adjacent pieces of equipment is adequate to prevent children from running into each other or pieces of equipment. There is no additional cost of proper equipment spacing for new playgrounds, beyond the resilient surfacing cost mentioned earlier. Some existing playgrounds may require relocating or removal of some play events.

Equipment maintenance, including aeration of loose-fill surfacing is important. Children get hurt when swings break and they fall on hard-packed sand, bark, or pea-gravel surfacing. Periodic maintenance is needed to keep the surfacing resilient and see that there is no broken glass, protruding nails, or other hazards associated with ordinary playground wear and tear.

Intervention strategies for prevention of school playground injuries include:

- Supervise school playgrounds effectively.
- Promote reduction in falls from equipment over four feet tall.
- Provide training and education on proper use of equipment for children and teachers.

- Teach hazard identification and elimination to parents, schools, children and local public health agencies.
- Teach playground rules to children.
- Promote annual inspection of playgrounds by local health agencies
- Assure adequate resilient surfacing below equipment.
- Promote plan reviews prior to playground construction.
- Promote regular inspection of playgrounds by schools and parent groups.
- Maintain playground equipment and aerate loose-fill surfacing material.

Standards for school playground injuries

	Washington State				United States		
		Baseline		Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Playground Injuries							
All	NA	NA	NA	*	NA	NA	NA
Hospitalizations Age 5-12	1990-92	642	36.2	30.8	NA	NA	NA
Safety Factors							
Appropriate Surfacing	NA	NA	NA	*	NA	NA	NA

Data Source(s):

Playground Hospitalizations - CHARS

All playground injuries - Data will be available in 1994 through the DOH, Environmental Health, School Playground Injury Database.

Appropriate surfacing - Data will be available in 1994 through the DOH, Environmental Health, School Playground Injury Database.

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Case Definition(s):

Playground hospitalizations include events coded to E884.0, E886.0 and E917.0.

All playground injuries - See school playground injury reporting requirements.

Poisoning

While unintentional poisoning deaths among young children have decreased, they remain the third leading cause of injury hospitalization for children under five. In 1992, 52,770 calls were made to poison centers regarding potential poisoning of children 5 years of age and under. Of those, 3,893 were then referred for treatment in a health care facility.

Additionally, 23,307 calls related to adults were received during 1992. Although 19.5% of these were intentional misuse or abuse, 18,760 calls were related to incidents including adverse reactions to medications, interactions of medications, occupational and environmental exposures, birth defect concerns, and hazardous materials. National data show that adult poisonings are usually more serious than pediatric poisonings, and trends indicate increased utilization of poison centers for adult concerns.

Preventable causes of poisoning morbidity and mortality include improper poison storage, lack of awareness of potential poisoning dangers and safety precautions in occupational settings, inadequate child-resistant containers, inadequate parent and

employer/employee education on prevention strategies, lack of ipecac syrup in homes with young children, lack of awareness of the poison center, lack of awareness of services for adults, and delays in seeking treatment of poisoning patients.

Intervention strategies include:

- Maintain rapidly responsive information and referral services provided by the Washington Poison Center.
- Strengthen and enforce the Poisoning Prevention Packaging Act.
- Promote public education of the value of ipecac syrup in all homes and encourage ipecac distribution programs for families with young children.
- Promote education for parents on child-proofing and elder proofing homes and how to obtain emergency treatment.
- Promote education for health care providers on appropriate treatment methods.
- Promote education for workers and employers on the safe use of occupational chemicals and the need to access the poison center to handle poisoning incidents.
- Promote surveillance capacity for determining appropriateness of emergency visits and hospitalizations for poisoning exposure to poisons and toxins.
- Conduct household surveillance to assess existing prevention efforts for appropriateness and effectiveness.

Standards for poisoning

	Washington State				United States		
		Baseline		Year 2000		Baseline	Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Poison-Related Hospitalizations							
Age 0-4	1989-91	434	38.7	31.2	NA	NA	NA
Poison Center Calls							
Total Population (all calls)	1992	127,229	2586.5	2486.5*	NA	NA	NA
Adults Age 20+	1992	18,760	515.9	541.7*	NA	NA	NA

Data Source(s):

Poison-related hospitalizations - CHARS

Poison center calls - Washington Poison Center

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Poison-related hospitalizations include all events coded to E850-E869.

Case Definition(s):

Poison center calls include calls for help placed to Washington Poison Centers.

Additional Notes:

Rates are per 100,000 resident population.

Rates for the total population are crude (not age-adjusted) rates.

* It is assumed that poison centers are currently under-utilized. An increase in the poison center cal rates will reflect increased poison center utilization.

Family and individual health

Family and individual health issues are affected by an array of physical, emotional and environmental factors. As health system reform takes place within Washington and the United States, individual and family health concerns will likely be viewed as medical care needs which will be addressed by managed care providers with certified health plans.

The root causes of family and individual health problems, however, include a complex combination of environmental, social, and psychological factors which require broad interventions in conjunction with medical care. Successful prevention and treatment of individual and family illness, injury, disability, and premature death require assessment and understanding of a wide range of factors and multi-disciplinary, comprehensive prevention and treatment strategies.

This report describes and develops standards for the following health issues:

- Infant and child morbidity
- Infant mortality
- Nutrition
- Adolescent health
- Oral health
- Emotional well-being of children
- Reproductive health care
- Primary prevention of chemical misuse
- Chemical use in pregnancy

Not included in this appendix are other health-related issues which affect individuals throughout their life span and which will affect the overall health and effective functioning of families such as: preventable health issues related to aging; women's health issues, including reduction of risk factors; the primary health care needs of children and adolescents with special health care needs; adult and child developmental disabilities; and asthma. These areas, and others, will need to be addressed in future reports.

The strategies listed in this section are not exhaustive, but are examples of strategies which should be employed on the state and community level to address the identified urgent needs. The strategies listed will necessitate, in many cases, a redefinition of healthy behaviors. They will also require efforts which go beyond those of health care providers, insurers, and health policy makers. Many of the urgent health needs described in this section are the result of social and economic factors as well as individual health status.

Many of the health issues addressed here have been viewed in the past as subjects which can be treated independently of social, environmental, and psychological factors. The standards developed for family and individual health are based on the assumption that cost effective health care for individuals and families cannot be achieved without the development of community-based strategies to promote healthy behaviors and prevent disease, injury, disability, and death. These strategies, in order to be effective, must be comprehensive, coordinated, culturally relevant, community-based, and family-centered.

The development and evaluation of effective strategies necessitate the development and implementation of population-based surveillance and data-collection methods which accurately report the number of people affected by a specific addiction or disease and

which begin to measure environmental, social, physical, and psychological conditions which increase the risk of disease, injury, disability and death. The development of such assessment tools for use by all communities and populations would allow the analysis of contributing factors and evaluation of prevention and intervention methods to determine the success and cost-effectiveness of such methods.

As more comprehensive, effective assessment methods are initiated, rates of incidence will be higher, at least in the first few years, due to improved definitions of the problems and more complete reporting. Therefore, the determination of successful health promotion and prevention strategies may, in some cases, take several years.

Infant and child morbidity

Predictable and often preventable events during the perinatal period and infancy contribute to adverse health and developmental outcomes that are costly to the individual, the family, and to society. Significant areas of concern include:

- Birth defects and genetic disorders
- Inadequate caregiving
- Low birth weight/prematurity
- Injuries and violence
- Vaccine preventable and infectious diseases
- Prenatal exposure to alcohol and other drugs

The causes of these problems, and the ways to prevent them, are multiple and often interrelated. Of the 142,800 children born to Washington residents during 1987 and 1988, 2.6% had one or more significant birth defects diagnosed before one year of age. At least 5.3% of preschool children have diseases that are caused by a genetic factor.

Intervention strategies to reduce infant and child morbidity include:

- Institute a universal statewide tracking and follow-up system that assures early identification of health or developmental problems, and linkage to primary and specialty health care and early intervention services.
- Initiate, in local communities, on-going evaluation of perinatal and infant health service availability and emerging community needs.
- Evaluate impact of strategies on outcomes by integrating and enhancing data collection systems such as the Birth Defects Registry, Pregnancy Risk Assessment Monitoring System, Child Health Tracking, Health Services Information System, Pediatric Nutrition Surveillance System, hospital data, and vital records.
- Develop standards to be used by primary care providers for all patients in child bearing years to identify genetic risk factors and make referrals when appropriate.
- Expand the existing law requiring that patients be informed of the availability of prenatal testing; require standardized follow-up care for positive cases statewide.
- Develop a statewide screening and referral system (prenatally, at birth, and throughout infancy and early childhood) for pregnant women and infants based on multiple risk factors (including biomedical, genetic, psychosocial, and environmental) that affect health and development.
- Develop policies across systems of care that help parents in every community get information and services for their children, including referral to appropriate services, information about the roles of various providers, coordination of multiple resources, and follow-up.
- Include genetic testing and counseling in the Uniform Benefits Package.

- Institute an ongoing public awareness campaign through the media, school-based health education, parent education, and other forums about the importance of healthy behaviors and preventive health care, genetic health care issues, early warning signs, and community resources available for pregnant women, infants, and young children.
- Promote community information and referral systems for all families and providers.
- Assure universal access to prenatal care, including screening for psychosocial, genetic, and biomedical risks. Provide education on how to assure a healthy outcome.
- Assure that all women of child bearing age who are capable of becoming pregnant receive 0.4 mg of folic acid per day to reduce their risk of having a pregnancy affected with spina bifida.
- Make available printed materials and continuing educational opportunities to all primary care and prenatal care providers regarding new genetic technologies, and the purpose, potential benefits, and limitations of genetic screening/testing, counseling, and prenatal diagnosis.
- Expand the Teratogen Information System (TERIS) which provides technical assistance, consultation, and education to primary care providers.
- Continue and strengthen the newborn screening program.
- Assure perinatal home visitation services beginning prenatally to reduce risk factors for poor birth outcomes and child health and development.
- Assure that all infants and children have access to and providers are prepared to provide regular, repeated health and developmental monitoring/screening.
- Promote children's health and development through information, consultation, and screening in child care settings.
- Assure availability of community-based, culturally sensitive, and family centered assessment and early intervention services for infants and young children at risk or having special health or developmental needs.
- Assure that all infants and young children with special health care needs, and their families, have access to tertiary care for initial and ongoing medical and surgical treatment, and adaptive equipment. These services must be coordinated with the primary care provider, and address genetic, developmental, learning, and behavioral concerns.

Infant and child morbidity standards

	Washington State				United States		
		Baseline		Year 2000		Baseline	Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
% Women Abstaining from Alcohol in pregnancy	1992	73,550	93%	94%	NA		
% Providers offering prenatal screening	1993	NA	80%	90%	1987	76%	90%
% First trimester prenatal care	1992	60,235	80%	90%	NA		90%
% Very Low Birth Weight delivered in Level 3 facilities	1992	490	71%	90%	1987	6.9%	5%
% Low Birth Weight:	1992	4,219	5.3%	4.2%			
% Very Low Birth Weight	1992	686	0.9%	0.7%	1987	1.2%	1%

Sources

Community and Family Health Services
Genetics Services
Center for Health Statistics
Healthy People 2000

Infant mortality

Infant mortality in Washington State has decreased from 9.1 per 1,000 live births in 1989 to 6.8 per 1,000 births in 1992. More infants are surviving their first year of life today than at any other time in Washington State's past, but the infant mortality rates for some populations remain high, and disparities among racial and ethnic groups persist. Infants born to African American and Native American women are 2-3 times more likely to die before their first birthday than infants born to white women.

In 1992, 79,412 infants were born to women living in Washington. Some 538 of these infants died before reaching their first birthday. Of these deaths, 288, or 3.6 deaths per 1,000 live births, occurred in the neonatal period (the first 27 days of life); 250, or 3.1 deaths per 1,000 live births, occurred in the postneonatal period (28 days to one year of life). Since 1980, Washington's overall infant mortality rate has been lower than the national average, but our postneonatal mortality rate has actually been higher.

Strategies to reduce infant mortality include:

- Fund culturally competent, community-based, interdisciplinary prenatal care services that include risk assessment, health promotion education, general information about pregnancy and parenting, and interventions to reduce psychosocial risk, including a program of public health nurse home visits, nutrition services, and referral and consultation with other providers.
- Mobilize key community organizations and individuals, especially African American and Native American health professionals and community leaders, to address infant mortality.
- Establish community forums in which professionals, community advocates, public agencies and consumers can resolve problems that arise in the delivery of perinatal services.

- Provide appropriate child care, transportation, and interpretive services to help pregnant and postpartum women obtain care for themselves and their infants.
- Develop a 24-hour community clearinghouse for information on family planning, pregnancy, parenting, and pediatric services.
- Disseminate understandable information through media and other means about preterm birth, infant mortality, and access to obtain prenatal care.
- Increase availability of culturally appropriate outreach and case finding that provides information about resources to at-risk residents who have difficulty securing maternity care or other services.
- Provide community-based educational classes and resource information for pregnant women at risk for preterm birth.
- Implement physical abuse prevention strategies.
- Increase nutrition services for the child bearing population.
- Increase participation and early enrollment of pregnant women in the Women, Infant and Children (WIC) program.
- Continue school-based comprehensive health education that includes age appropriate reproductive health information.
- Provide reproductive health screening for all individuals in at least one health encounter during a year.
- Ensure routine availability of confidential, accessible, and anonymous family planning counseling and services.
- Expand community awareness programs that include information on family planning, prenatal care, nutrition, breastfeeding, parenting skills, and effects of tobacco, alcohol, and other drug use on the unborn child.
- Assure access to a gender-specific continuum of tobacco, alcohol, and other drug treatment services for women and their families.
- Provide public health nurse or public health social worker follow-up to all families experiencing an infant death.
- Include injury prevention education as part of prenatal and well child care, as well as parenting classes.
- Monitor access to timely family planning and reproductive health, genetic, prenatal, well child, and pediatric services.
- Collect perinatal data as part of a monitoring system which will measure perinatal outcomes, including population-based and clinical data.
- Develop a community-based evaluation system to determine the effectiveness of outreach and case finding activities.
- Evaluate community based incentive programs for providing a positive reinforcement to high-risk women for keeping prenatal and postnatal appointments and maintaining healthy behaviors.
- Develop a system to review and evaluate the causes of each infant death to identify potentially preventable causes.
- Develop plans to improve the supply and distribution of perinatal service providers.
- Define perinatal regions to ensure accountability for care of a total population.
- Establish state and regional perinatal committees to ensure, provide, and coordinate activities such as planning, perinatal standards development, outcomes evaluation, data analysis, and provider education.

Infant mortality standards

	Washington State				United States		
	Baseline			Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Infant Mortality	1992	537	6.8/1000	6.5/1000	1991	8.9/1000	7.0/1000
Neonatal Mortality	1992	289	3.6/1000	3.5/1000	1991	5.5/1000	4.5/1000
Post-neonatal Mortality	1992	248	3.1/1000	3.0/1000	1991	3.4/1000	2.5/1000

Sources:
Center for Health Statistics Healthy People 2000

Nutrition

Poor dietary practices and eating behavior contribute substantially to preventable illness and premature death in the United States. For the majority of adults who do not smoke and do not drink excessively, what they eat is the most significant controllable risk factor affecting their long term health. Many Americans' diets contribute to high rates of certain chronic diseases, including five major causes of death: coronary heart disease, some types of cancer, stroke, noninsulin-dependent diabetes mellitus, and coronary artery disease.

Healthy eating patterns and good nutrition in a population improve the quality of life and can reduce the cost of health care. Improved nutrition for low income pregnant women has been shown to result in superior outcomes of pregnancy and lower Medicaid costs for mothers and newborns. Among elderly people, good nutrition improves recuperation from disease and surgery, reducing the length of hospital stays.

Lack of access to adequate and appropriate food is a major problem. Hunger can rob children of their natural human potential, and undernutrition results in lost knowledge, brainpower, and productivity.

Inadequate nutrition in a given population and the success of strategies to address the problem can be measured with indicators. Some of these indicators are risk factors such as poverty, genetics, age, ethnicity/race, and existence of disease. Others are health status indicators such as anemia, growth retardation, low birth weight, certain cancers, heart disease, diabetes, and dental caries. Still others measure access to and utilization of programs such as food assistance, health and family life education, weight loss, cholesterol screening, and eating disorders clinics. While existing data do document significant problems with inadequate diet and poor nutritional status among some groups, the magnitude, scope, distribution, and consequences of inadequate nutrition are not well known for Washington State.

A central role of public health nutrition is to provide the data and information to identify high priority problem areas and their potential solutions. Another is to assure effective, efficient, culturally appropriate strategies to improve dietary intake and nutritional status, to alleviate hunger, and improve access to appropriate food.

Intervention strategies to improve nutrition include:

- Develop indicators of inadequate nutrition.
- Conduct a statewide needs assessment to establish baseline data of community nutrition services and systems, including:

- Nutritional status and dietary intake patterns.
- Food availability, use of food assistance programs.
- Ongoing coordinated efforts focusing on improving access to appropriate quality food resources to reduce hunger.
- Preventative and therapeutic nutrition services for individuals and groups at risk in the community.
- Nutrition related services available to those who have diseases/disorders that are affected by nutritional status.
- Population based nutrition education

- Prioritize problem areas identified by the nutrition needs assessment.
- Using the nutrition needs assessment, develop a comprehensive plan to implement community nutrition systems, to include:
  - Preventive and therapeutic nutrition services provided to individuals and groups at risk of developing nutrition related disorders by qualified health professionals.
  - A nutrition component in well care visits, prenatal visits, screening for heart disease or cancer risk factors, and medical management of conditions such as diabetes, hypertension, elevated cholesterol, HIV infection, obesity, and gastrointestinal disorders.
  - Assure appropriate and relevant nutrition education in the school curricula and activities.
  - Schools and out of home care providers for children and adults in care centers and homes to assure that meal service is based on menus that are consistent with the nutrition principles in the Dietary Guidelines for Americans.
  - Senior nutrition programs and other adult food and nutrition programs to provide home food services to people who have difficulty in preparing their own meals or are otherwise in need of assistance with meals.
  - Training of primary care providers and other health professionals on food and nutrition issues.
  - Promotion of community awareness of public health nutrition issues.
- Establish a system that regularly monitors nutrition status and the effectiveness of community nutrition systems.

Nutrition standards

	Washington State			United States		
	Year(s)	Baseline	Year 2000 Target	Year(s)	Baseline	Year 2000 Target
Prevalence of overweight						
Ages 12-19	NA	NA	15%	1980	15%	15%
Ages 20+	NA	NA	20%	1980	26%	20%
Pregnant women	1994	35.2% pregnant WIC women	20%	NA	NA	NA
Prevalence of growth retardation						
Ages 0-1	1994	4.3% WIC infants	10%	1988	16%	10%**
Ages 1-5	1994	5.3% WIC children				
Prevalence of iron deficiency						
Children, ages 1-4	1994	24.5% WIC children	3%	1980	9% ages 1-2	3%
Women of childbearing age	1994	20.3% pregnant WIC women		1980	5% women ages 20-44	
	1994	10.3% postpartum WIC women				
Prevalence of women breastfeeding						
Early postpartum	1994	52% WIC women begin to breastfeed	75%	1988	54% at discharge	75%
Through 5-6 months	1994	22% WIC women breastfeeding at one month postpartum	50%	1988	21% at 5-6 months	50%
Dietary fat intake, ages 2 and older						
Total fat intake	1980	36% of daily energy intake	30% of daily energy intake	1980	36% of daily energy intake	30% of daily energy intake
Saturated fat intake	1980	13% of daily energy intake	10% of daily energy intake	1980	13% of daily energy intake	10% of daily energy intake
Complex carbohydrate and fiber intake						
Vegetables (including legumes) and fruits	1985	2.5 servings per day	5 servings per day	1985	2.5 servings per day	5 servings per day
Grain products	1985	3 servings per day	6 servings per day	1985	3 servings per day	6 servings per day

** Healthy People 2000 does not define "growth retardation". Washington data are for children whose weight to height ratio is below the 10th percentile (National Center for Health Statistics).

Sources:

Community and Family Health Services

Healthy People 2000

Washington State Survey of Adolescent Health Behaviors

Washington State WIC Program

Pregnancy Risk Assessment Monitoring System (PRAMS)

National Health and Nutrition Examination Survey (NHANES)

Adolescent health

Many adolescents engage in a variety of risk-taking behaviors such as unprotected sexual activity, using alcohol and other drugs, smoking, disordered eating, and violence. While the issues of interpersonal youth violence, substance abuse, smoking, suicide, and nutrition are discussed in separate sections of this report, the inter-relatedness of risk factors and subsequent behaviors is well established.

This section addresses adolescents' use of clinical preventive services and the issue of teen pregnancy.

The risks associated with adolescent behaviors are exacerbated by their low use of clinical preventive health services. This problem pertains to all adolescents, although preventive health service utilization data is available only for adolescents on Medicaid. In 1992, only 16% of these adolescents used preventive health screening.

Many adolescents do not seek preventive health services until they fear a problem like pregnancy or a sexually transmitted disease. Health care providers are reluctant to work with teens, and parents are often unaware of the health needs of teenagers.

Teen pregnancy is a persistent issue for Washington State. In Washington, births to adolescent mothers have been increasing slightly since 1985 and now represent approximately 11% of all births. One in 15 adolescent females became pregnant in 1991, with birth rates for younger teens increasing the most.

An important factor associated with adolescent pregnancy is a history of sexual abuse. One study showed 66% of pregnant and parenting teens in Washington were sexually abused as children. By the time children in Washington reach the 12th grade, nearly one out of five have been sexually abused.

Intervention strategies to address teen pregnancy and improve adolescent use of clinical preventive services include:

- Use new measures of adolescent health status to increase the accuracy of data and ongoing assessment of adolescent health behaviors and health status. Expand surveys to include adolescents who are not in school.
- Assure that certified health plans collect data regarding use of health services by adolescents.
- Implement child sexual abuse prevention strategies (see Violence and Injury section).
- Promote family planning and mental health programs that assure confidentiality and accessibility.
- Increase the number of health providers prepared to serve adolescents, especially hard to reach teens such as who don't speak English or who are living on their own.
- Promote school-based or school-linked multi-disciplinary health services that assure and advertise confidential services.
- Establish peer counselor programs and support groups for teens to promote personal social skills.
- Assure availability of vocational education and job training opportunities.
- Promote comprehensive prenatal care that includes home visits, nutrition services, education to reduce unhealthy habits, and substance abuse treatment when needed.

- Promote comprehensive school-based support programs (including child care) for teen fathers and mothers to postpone subsequent pregnancies, facilitate school completion, and promote healthy parenting skills.
- Assure access to preventive clinical services and primary health care.
- Develop programs that promote parent-child communication about decision-making, values, and healthy behaviors.
- Educate males regarding their role in preventing pregnancies as well as the consequences of pregnancies (development of a good relationship with infant and mother, provision of care, and financial support).
- Provide school-based comprehensive health education that includes training in decision-making, communication and refusal skills, values clarification, the responsibility of both males and females in reproductive choices, health and social consequences of behavior, family planning, and basic life skills.
- Develop long-term, multi-faceted, community-based efforts to address the needs of adolescents, to promote their sense of belonging, to provide incentives for avoiding high risk behaviors (i.e. postponement of sexual activity and child bearing), and to increase public awareness of adolescent health issues.
- Integrate adolescent pregnancy prevention efforts with sexually transmitted disease and HIV/AIDS prevention strategies (see standard on STD and HIV/AIDS prevention).

Adolescent health standards

	Washington State				United States		
		Baseline		Year 2000 Target		Baseline	Year 2000 Target
Indicator	Year(s)	Count	Rate	Rate	Year(s)	Rate	Rate
Adolescents Receiving Family Planning/STD Services (Title X)***							
Ages 15-17	1992	12,510	63/1000		NA		
Ages 18-19	1992	14,366	112/1000		NA		
Chlamydia Case Rate (Ages 15-19)**	1993	3,916	12/1000		NA		
% Ever Physically Abused (Grade 10)	1994	480	19%		NA		
% Ever Sexually Abused (Grade 10)	1994	428	17%		NA		
% Abstaining from Sexual Intercourse (Grade 10)	1994	1,477	58%		NA		
Pregnancy Rate (Age 15-17)	1992	5,450	57/1000	45/1000	1990	74/1000	50/1000
% Repeat Births (Age 18)	1992	516	23%		NA		
% Unintended Births (Age 15-17)					NA		
Motor Vehicle Injury Deaths Age 15-19 Women	1990-1992	287	22/1000	22/1000	1990*	33/1000	33/1000
High School Dropout Rate Women	1991-1992	16,237	6.7/1000		NA		
Suicide (Age 15-19)	1990-1992	124	12.8/1000	11.2/1000	1987	10.3/1000	8.2/1000

*The US Baseline is for persons age 15-24

**Based on a positivity rate of .068 for women under 20, the number of Chlamydia tests performed would be appoximately 49,000.

*** An additional 4,359 adolescents were served iin State funded clinics with no Title-X federal funds. Sources: Community and Family Health (Infectious diseases, injury prevention, Survey of Adolescent Health Behaviors), Center for Health Statistics, healthy People 2000, Office of Superindendent of Public Instruction.

Oral health

Dental disease is an infectious disease process affecting children and adults. It may be the most prevalent yet most preventable disease known to humans. By the age of 18, over 84% of children , 96% of adults and 99% of people age 65 years and older have experienced dental disease in the form of caries (cavities). This infectious disease process and associated conditions reduce overall health and productivity, increase health care costs, and may result in pain, loss of self esteem and even death.

Over 36% of four year old preschool children in Head Start programs in Washington State need dental treatment; the highest rate of need is 80% of Native American Head Start children in Pierce County experiencing active dental disease.

The public perception — especially among those who can afford dental care or are fortunate to have dental insurance — often is that dental disease, commonly thought of as cavities, is a "natural occurrence" that deserves little attention or dollars. Oral health problems are ignored as an integral part of health; "access" is assumed to refer to medical care.

In Washington State, the lack of access to dental care is at crisis levels for low income and Medicaid eligible clients. Hospital emergency rooms are handling cases costing up to $3000 to treat a child with infant caries (baby bottle tooth decay), a painful and debilitating dental disease which is totally preventable. Some people travel hundreds of miles to get treatment at community clinics which must turn away some children and adults needing urgent dental care.

Fluoridation of water supplies can significantly reduce the risk of dental disease, yet 2.9 million Washington residents, or 58%, do not drink fluoridated water.

Strategies to improve oral health include:

- Develop oral health surveillance systems to document oral health status, dental treatment needs, and use of dental services.
- Screen all children for oral health problems at school entrance, with referrals to appropriate providers and follow up for preventive services.
- Identify and monitor dental health profession shortage areas on a yearly basis. Provide adequate oral health personnel in Dental Professional Shortage Areas.
- Require that all eligible public water systems (serving over 1000 people) be fluoridated.
- Raise reimbursement rates for providing services to Medicaid eligible clients. Create incentives for providing preventive services.
- Establish school-based sealant application programs.
- Establish programs to train medical professionals and other health related workers to recognize oral health problems, including detection of oral HIV symptoms, oral cancer, and infant caries (baby bottle tooth decay).
- Develop screening programs for children during the first year of life and pilot studies using innovative interventions to prevent caries in infants and young children.
- Establish program to train medical professionals and other health related workers to recognize and screen for oral health problems including HIV/AIDS, cancer and infant caries.

Oral health outcome standards

	Washington State				United States		
		Baseline		Year 2000 Target		Baseline	Year 2000 Target
	Year(s)	Count	Rate	Rate	Year(s)	Rate	Rate
% Untreated Dental Decay in Permanent or Primary Teeth							
Ages 6-8, All	1994	NA	17%	20%	1986-87	27%	20%
Native American	1994	NA	4%	20%	1986-87	64%	35%
African American	1994	NA	16%	20%	1986-87	38%	25%
Hispanic American	1994	NA	35%	20%	1986-87	36%	25%
Asian	1994	NA	21%	20%	NA		
Age 15, All	1994	NA	13%	15%	1986-87	23%	15%
Native American	1994	NA	25%	15%	1986-87	84%	40%
African American	1994	NA	12%	15%	1986-87	38%	20%
Hispanic American	1994	NA	29%	15%	1986-87	31-47%	25%
Asian	1994	NA	18%	15%	NA		
% of Children Receiving Protective Sealants							
Age 7-8	1994	NA	19%	65%	1986-87	11%	50%
Age 14	1994	NA	42%	65%	1986-87	8%	50%
% Children <3 years with Baby Bottle Tooth Decay (Infant Caries)	1994	NA	13%	5%	NA		
% Children Entering School Receiving Oral Health Screening, Referral, and Follow-Up	NA	NA	0%	65%	NA		90%
% Persons Age 65+ Who Have Lost All Natural Teeth	NA			25%	1986	36%	20
%Deaths Due to Cancer of Oral Cavity and Pharynx*							
Women	1991-92	68	5.1/100,000		1987	4.1/100,000	4.1/100,000
Men	1991-92	134	10.6/100,000		1987	12.1/100,000	10.5/100,000
% Boys Using Smokeless Tobacco (Ages 12-17)	1992	NA	23%	10%	1988	7%	4%

	Washington State				United States		
		Baseline		Year 2000 Target	Baseline		Year 2000 Target
	Year(s)	Count	Rate	Rate	Year(s)	Rate	Rate
% Medicaid Eligibles Using the Oral Health Care System (18-64)	1990	NA	23%	50%	NA		
% Total Population Using the Oral Health Care System (35+)	NA			70%	1986	54%	
% Total Population Served by Optimally Fluoridated Community Water Systems	1993	NA	42%	55%	1986-87	62%	75%
% Water Systems Fluoridated (Systems serving >1000 persons)	1994	NA	37%	100%	NA		100%

*Population for US baseline data is ages 45-74; population for WA baseline is all ages.

Sources

Community and Family Health Services

Oral Health Survey

Cancer Registry

Survey of Adolescent Health Behaviors

Environmental Health

Healthy People 2000

Emotional well-being of children

The cost of emotional disturbances to families, individuals, and society is very high. Often families and individuals must be in crisis before help is available; some families who recognize risk and seek assistance to prevent crisis do not find it. Identifying and addressing environmental risk factors early in life can prevent life-long impacts of serious emotional disturbances.

A person's emotional health is shaped by many forces, including biology, environment and life events. Mental health problems can be caused by a complex interaction of lifelong neurobiological and environmental factors. Serious emotional disturbances in children occur more predictably when certain risk factors or life events are present, such as: family history of mental illness, physical or sexual abuse, HIV infection, chronic and serious physical or developmental disability, heavy or persistent substance use, homelessness, and multiple out-of-home placements. Prevalence estimates for serious emotional disturbances in children range widely from 6 to 20 percent.

Continued research is needed for understanding the biologic origin of some emotional health problems. Primary prevention is the preferred, population-based approach for public health because it can address environmental factors which foster emotional disturbances.

There is evidence that two overall approaches to primary prevention are effective: 1) focused interventions for those at risk to protect against the development of serious emotional disturbances; and, 2) a more universal, population-based approach for building a strong capacity within communities and families to promote the mental health/wellness of all its citizens. Some of the most effective primary prevention strategies are those that promote health/wellness in the general population. Many European countries have demonstrated the efficacy of a population-based approach that focuses on strengths and capacities within neighborhoods and communities, including ethnic communities.

A combination of the focused and universal population-based approaches has the greatest likelihood for success given the complexity of the causes of mental health problems.

Key to the success of any prevention strategy is the collaboration of various social, educational, health, economic, medical, and business representatives who are committed to creating healthier community environments for their citizens. Public health agencies play an essential role in facilitating this multiple systems approach. Another key role is to provide data and information to assist in identifying high priority problem areas and their potential solutions. Local public health agencies can facilitate the process of involving the community, family, and individuals for designing focused interventions and population-based prevention strategies.

Strategies to prevent serious emotional disturbances in children include:

- Collaborate in plan development with interested groups, including : mental health professionals; prevention specialists; community public and private providers; families; Community Public Health and Safety Networks; consumer groups; Mental Health, Juvenile Rehabilitation, Alcohol and Substance Abuse, Children and Family Services, Medical Assistance Administration within DSHS; the Department of Community, Trade and Economic Development; the Office of the Superintendent of Public Instruction; the legislature; and other statewide organizations.
- Research and/or develop a tool to help communities assess their capacity to promote mental health in their citizens and identify those at risk.
- Develop in each community a plan to increase capacity to promote mental wellness, identify those at risk, and provide targeted primary prevention for those at risk.
- Include in the Health Services Information System the collection of protected confidential data on mental health screens performed as part of well child, adolescent, and adult health screens.
- Include appropriate screening for mental health status in all well child visits and in primary care for adolescents and adults.
- Provide technical assistance to communities for implementing accepted intervention strategies.
- Provide education and consultation about normal growth and development, troubling behavior causes and management, options for discipline, and family dynamics and support to parents, schools, child care and other providers working with young children.
- Develop and maintain business/government partnerships to establish policies such as flexible work schedules, career sequencing, and family and medical leave.
- Develop community support for informal gathering places for peer groups such as adolescents or new parents.

Standards for emotional well-being of children

	Washington State				United States		
		Baseline		Year 2000 Target		Baseline	Year 2000 Target
	Year(s)	Count	Rate	Rate	Year(s)	Rate	Rate
Estimated "possible mental health clients"* (age 0-17)	1990	91,934	73/1000			NA	NA
Children (0-17) receiving outpatient mental health treatment	1992	12,870	9.5/1000			NA	NA
Child Protective Services accepted referrals (0-17)	1992	74,540	55.1/1000			NA	NA
Children (0-17) receiving Division of Alcohol and Substance Abuse Services	1992	4,145	3.1/1000			NA	NA
Suicides (age 15-19)	1990-92	124	12.8/1000	11.2/1000	1990	11.1/1000	8.2/1000
High school dropout rate	1991-92	16,237	6.7/1000			NA	NA
% of Teen births to unmarried mothers							
Age 15-17	1992	2,593	83%			NA	NA
Age 18-19	1992	3,449	65%			NA	NA

*Possible clients are defined as everyone who is or would be eligible to receive services based on income.

Sources: Center for Health Statistics Health People 2000 Office of Superintendent of Public Instruction Department of Social and Health Services

Reproductive health care

Reproductive health care enables women and men to decide whether or when to become parents, to avoid sexually transmitted diseases, and to protect their fertility so that they may have healthy pregnancies, favorable birth experiences, and welcome, healthy children. These decisions are some of the most personal and private decisions that individuals and families may make. Lack of access to timely and confidential reproductive health information and services takes a toll on individual, family, and community health typified by other problems such as unintended pregnancy, mistimed pregnancy, infant mortality and morbidity, and too early child bearing. These problems are costly both in human terms and in terms of programs needed to address them.

Unintended pregnancy: A recent national survey by the Alan Guttmacher Foundation found that 56% of all U.S. pregnancies are unintended, of which 50% end in abortion. The percentage of unintended pregnancies among teenagers is 82%. It is 77% for women ages 40-44, and 75% for poor women. Abortion statistics can be seen as an indirect measure of unintended pregnancy. In 1991, there were 30,316 reported abortions in the State of Washington, an overall rate of 25.5 per thousand women. Rates went as high as 38.3 in some counties and as high as 59.0 in some age groups.

Mistimed pregnancy: A minimum of two years between pregnancies is recommended by most medical experts to insure optimal health for both mother and baby. A short interval between birth and subsequent pregnancy sharply increases the risk of delivering a low birth weight baby. Also, the mother has not had a chance to regain her full strength; this, coupled with sleep deprivation, can adversely affects health outcomes. In 1990 in Washington, 28% of subsequent births occurred in less than 24 months. Twenty percent of births paid for by public assistance had birth spacing of less than 18 months in 1991, compared to 10% of non-public assistance births.

Infant mortality: Several studies have shown that reductions in infant mortality over the past 20 years have been due, in part, to more effective family planning. After reviewing the data on the impact of family planning on maternal and child health, the National Commission on Infant Mortality estimated that 10% of infant deaths could be prevented if all pregnancies were planned and that in 1989 alone, 4000 infant lives could have been saved if unintended pregnancies were avoided.

Adolescent Health: Problems associated with reproductive health are more pressing for young people. In 1991, there were 14,858 adolescent pregnancies reported in Washington, resulting in 8,636 live births, 44 still births, and 6,178 abortions. The birth rate for 15-19 year olds increased 22% between 1985 and 1991. Birth spacing intervals are shorter for teens; in 1991, 50% of births to young women 15-17 years old paid for by public assistance had birth spacing of less than 18 months. Eighty percent of prenatal care and deliveries to adolescents were publicly funded in 1991 at a cost of $27.2 million.

Cost to taxpayers: The average cost of one year of family planning services to a state funded low income client in 1991 was $75. The average cost of state funded prenatal care and delivery in the same year was $3,228. Preliminary data from a cost/benefit analysis of family planning suggests that the state avoids from $56 to $80 in costs for every state dollar spent. Using Title X (joint federal/state funded) family planning clinic clients as a model, $36 was avoided for every dollar spent of public money, $67 for every dollar of state money.

Intervention strategies to ensure access to reproductive health information and services include:

- Provide reproductive health care in a variety of settings such as certified health plans, community based clinics, public health departments and districts, and school based clinics.
- Ensure reproductive health services that are comprehensive, culturally appropriate, and include both medical services and supporting counseling and patient education.
- Guarantee strict confidentiality by all providers and client consent for all services.
- Help recruit and retain qualified providers in under-served areas.
- Assure that clients seeking family planning may self refer and that there is no denial of family planning care or devices based on ability to pay or insurance status.
- Increase collaboration between programs with services related to reproductive health such as cancer prevention, STD, HIV/AIDS, adolescent health, Medical Assistance, and First Steps.
- Increase availability of family planning information and services during the post-partum period.
- Increase family planning information and services for clients of First Steps and other prenatal assistance programs.
- Improve data collection and assessment of factors related to unintended, mistimed, and unwanted pregnancy.

- Establish a 24 hour statewide clearinghouse for information on family planning information and services.
- Expand and improve age appropriate comprehensive sexuality education in schools.
- Monitor access to timely reproductive health information and services.
- Assure access to programs that offer alternatives to too early pregnancy and support for young women choosing to delay child bearing.
- Collect and analyze baseline and trend data on pregnancy spacing, especially for adolescents and grant recipients.

Reproductive Health Standards

	Washington State				United States		
		Baseline		Year 2000 Target		Baseline	Year 2000 Target
	Year(s)	Count	Rate	Rate	Year(s)	Rate	Rate
% Unintended Pregnancy							
Adolescents (<17)	NA			30%	1988	82%	30%
Women 40-44	NA			30%	1988	77%	30%
Low Income Women	NA			30%	1988	75%	30%
Adolescent Pregnancy Rate (15-17)	1992	5450	57.2/1000	45/1000	1990	74.3/1000	50/1000
Adolescent Birth Rate (15-17)	1992	3112	33/1000		1990	39/1000	NA
% of Sexually Active Females (15-17) Using Contraceptives							
At First Intercourse	NA				1988	63%	90%
Most Recent	NA				1991	81%	90%

Sources: Community and Family Health Services, Center for Health Statistics, Healthy People 2000

Primary prevention of chemical misuse

Problems associated with and/or directly attributed to tobacco, alcohol and other drug use by Washington State individuals and families include: chemical dependency; infant death; alcohol/other drug related birth defects; child abuse and neglect; unprotected sexual behavior; school failure; economic loss; violent and criminal behavior; suicide; personal injuries and death; HIV/AIDS; cancer; heart disease; and other personal health problems.

Chemical use usually begins in childhood or adolescence. Tobacco, alcohol and other drug dependency and problems related to misuse are associated with: early age of onset of chemical use; the regular use of chemicals in childhood or adolescence; chronic use of alcohol and other drugs in adolescence; and any use of substances among children with histories of chemical abuse/dependencies within their families.

Public policy and funding to date has emphasized law enforcement and sanctions as a means of discouraging chemical misuse and abuse problems with limited success. Prevention strategies that emphasize education, skill building, bonding and changes in values and attitudes have received relatively little attention and financing. However, scientific research has shown that by reducing the factors which put children at greater risk of chemical misuse and by enhancing resiliency in our children to buffer the effects of the risk factors, we can successfully prevent alcohol, tobacco, and other drug problems.

A broad array of factors across the social environment and communities place children at risk for chemical misuse; therefore, single, narrowly focused prevention efforts are unlikely to be effective. Prevention efforts should include multiple strategies, rather than isolated components, and strategies which are integrated as a total community system.

The risk factors that are known to increase the likelihood of later chemical misuse and abuse lie in many different domains of life. To effectively reduce these risk factors and, consequently, reduce the onset and impact of chemical use, prevention services need to be built into the many systems that currently touch the lives of children and families in all these domains. Chemical misuse prevention/intervention policies and services should be provided throughout primary care, early childhood education/child care, schools, juvenile justice, mental health and other family and community-based systems.

Factors contributing to chemical misuse

Multiple and interrelated factors put children and individuals at greater risk of chemical misuse. The more risk factors present in one's life, the greater the likelihood that the individual will misuse substances. Successful prevention strategies work by reducing the factors which put children at greater risk of misuse and by enhancing resiliency in our children to buffer the effects of the risk factors.

Research has shown the following 16 risk factors increase the likelihood that youth will misuse alcohol, tobacco, and other drugs:

Community

- Availability of drugs
- Community laws and norms favorable toward drug use
- Transitions and mobility
- Low neighborhood attachment and community disorganization
- Extreme economic and social deprivation

Family

- Family history of alcoholism and drug dependency
- Family management problems
- Parental attitudes and involvement
- Family conflict

School

- Early and persistent antisocial behavior
- Academic failure in elementary school
- Lack of commitment to school

Individual/Peer

- Alienation/rebelliousness/lack of bonding to society
- Friends who use
- Favorable attitudes toward drug use
- Early first use

Other possible risk and protective factors are currently being researched. These factors should be added to the model as science confirms the linkages to chemical misuse:

- Low self-esteem
- Greater levels of emotional distress
- Increase levels of depression
- Lower levels of harm avoidance
- Increased levels of impulsivity, hostility, or disinhibition
- Low religiosity
- Greater need for autonomy
- Lower need for achievement
- Teenage pregnancy
- Physical and sexual abuse
- Language and cultural barriers
- Racism
- Media advertising of tobacco and alcohol
- Labelling and identifying students as high risk
- Role reversal between parent and child/youth
- Low expectations by parent of child's success

Research has also shown that protective/resiliency factors buffer the effects of the above risk factors. Protecting and raising resilient children by building protective factors into our communities, laws/policies, schools, and families can reduce early-age use of tobacco, alcohol and other drugs and associated problems. When we provide our children with caring and support, high expectations and opportunities for participation within community, school, and family settings, we foster resiliency.

Strategies

Effective prevention programs use strategies which reduce risk factors and enhance resiliency. Communities can use this model to identify which risk factors are most prevalent in their community and then develop strategies to increase protective factors and to successfully address these identified risk factors, ultimately reducing chemical misuse.

The practitioner at the community level needs to understand the active processes in the development of strategies: epidemiology and community input. Epidemiology consists of risk factor analysis based on the collection of data which indicate the prevalence of risk factors in a community. This analysis serves as the basis for planning, based on data and supported by research. Community input into the development of strategies comes through the collection and analysis of data indicators. After data is collected and analyzed, the community can identify the priorities for prevention programming. At this point, communities can develop strategies which will reduce the priority risk factors in

their community and enhance resiliency among their community members. By using the combination of epidemiology and local input, communities can successfully develop and implement effective chemical misuse prevention programs.

All of the strategies listed below should:

- Be based on a comprehensive assessment of the risk factors using an epidemiological database.
- Address targeted risk factors and enhance protective factors/resiliency.
- Be culturally appropriate and accessible to the diverse populations of Washington State;
- Include collaboration between the community and agencies.

Environment/Community-Based Strategies

- Involve youth in community service.
- Conduct media/social marketing campaigns to educate policy makers and the public on the tobacco and alcohol industries' advertising strategies.
- Promote voluntary and governmental action restricting alcohol and tobacco advertising and promotion, including sponsorship of sporting and community events.
- Enforce laws restricting the distribution and sale of alcohol and tobacco to minors.

Strategies in the School, Early Childhood Education and Child Care Settings

- Establish uniform and consistent policies around tobacco, alcohol and other drug use addressing: school environment policies; school policies and approaches designed to retain and assist students involved in chemical use; and a choice of curricula-based prevention and cessation programs.
- Train school staff in early childhood education regarding chemical abuse and dependency, including ways to increase resiliency factors for children and networking with community resources.
- Support student involvement in drug-free activities including opportunities specifically designed for youth who do not ordinarily participate in school activities.
- Conduct school readiness and preparation training for families of school-aged children.
- Implement tobacco, alcohol and other substance use prevention and education in grades K-12 and institutions of higher education, including substance abuse cessation programs for students in grades 6-12 and higher education.
- Provide peer helper/counseling/education/mentor programs.

Family-Based Strategies

- Provide parenting education training including parent recruitment and follow-up support services addressing at a minimum: raising drug-free children; positive discipline; effective family communication; child growth and development; building a positive self-image; and basic child development information to assist parents in arriving at age-appropriate expectations.
- Provide education and support to children living in families with chemically dependent members or children living within substance abusing environments.

Standards for primary prevention of chemical misuse

	Washington State				United States		
		Baseline		Year 2000 Target	Baseline		Year 2000 Target
Indicator	Year(s)	Count	Rate	Rate	Year(s)	Rate	Rate
Regular Chemical Use (Grade 12)*							
Alcohol	1992	1203/2322	51.8%	49.2%	1992	51.3%	32.0%
Smoke Tobacco	1992	517/2317	22.3%	21.2%	1992	27.8%	
Chew Tobacco	1992	198/2327	8.5%	8.1%	1992	11.4%	
Marijuana	1992	402/2323	17.3%	16.4%	1992	11.9%	9.0%
Crack/Cocaine	1992	51/2525	2.0%	1.9%	1992	1.3%	1.7%
Heavy Use of Alcohol (Grade 12)* **							
Binge Drinking	1992	634/2323	27.3%	26.6%	1992	29.8%	28.0%
Daily Drinking (Beer)	1992	26/2326	1.1%	1.1%	1992	3.4%	
Heavy Use of Drugs (Grade 12)							
Daily Marijuana Use	1992	63/2325	2.7%	2.6%	1992	1.9%	
Daily Other Drug Use+	1992	2/2326	0.1%	0.1%	NA		
Daily Inhalant use	1992	2/2325	0.1%	0.1%	1992	0.1%	
Monthly or More Cocaine Use	1992	14/2326	0.6%	0.6%	1992	1.3%	1.7%
Monthly or More Hallucinogen Use	1992	88/2327	3.8%	3.7%	1992	2.1%	
% of 6th Graders Who Have Ever Used:							
Alcohol (Beer)	1992	1064/4749	22.4%	Increase by >1year the age of first use	1992	36.7%	Increase by >1year the age of first use
Tobacco	1992	557/4762	11.7%		1992	10.5%	
Chewing Tobacco	1992	257/4759	5.4%		1992	11.3%	
Inhalants	1992	370/4747	7.8%		1992	10.5%	
Marijuana	1992	95/4755	2.0%		1992	4.1%	

*Any use in past 30 days; Washington target based on reduction of baseline rate by 5%.

**Numberators are the numbers of students responding positively. Denominators are the numbers surveyed.

***Washington target based on reduction of baseline rate by 5%.

+Methamphetamines, tranquilizers, uppers, downers, heroin

Sources: Community and Family Health Services, Survey of Adolescent Health , National Institute on Drug Abuse

Chemical use in pregnancy

Chemical use in pregnancy creates a number of maternal and child health problems including adverse reproductive outcomes that are common and costly. Use of tobacco, alcohol and/or drugs (both legal and illegal) can be associated with miscarriages, stillbirths, prematurity, low birth weight, infant mortality and morbidity, and/or permanent, irreversible birth defects like spina bifida and alcohol related birth defects (ARBDs).

Smoking is a significant risk factor for spontaneous abortion, premature births, stillbirths, low birth weight and overall infant mortality. Research also suggests that smoking can have adverse long term effects on a child's growth, intelligence and behavior. In a recent survey, 48% of women who delivered at a King County hospital serving high risk women smoked during the pregnancy and/or in the month prior to the pregnancy.

ARBDs are divided into two subgroups: fetal alcohol syndrome (FAS) and fetal alcohol effects (FAE). Characteristics of FAS include physical malformations, cognitive impairment, social incompetence, problems with memory and judgment, and behavioral and learning abnormalities that result in major difficulties for schools, social/welfare agencies (especially in the foster care and adoption system), criminal justice and health care systems, and above all for families.

When inadequately served, people with ARBDs place unique and complex demands on the entire community. No system of care currently exists to monitor or case manage seriously affected individuals. Treatment of individuals with ARBDs up to now has been ineffective, and affected people rarely leave the system. In fact, they frequently end up in inappropriate and costly situations such as in jail or mental institutions. Considerable research on ARBDs and prenatal use of alcohol has been performed in the past 20 years, yet there are still many questions that researchers and others need to answer.

Only more recently has research begun to explore the effects of illegal drug use in pregnancy. Less data is, therefore, available on the adverse effects of drug use than alcohol use, especially with regard to detrimental, long-term effects on the child. Researchers and others continue to be concerned about the potential adverse effects of illegal drug use. Further evaluation is needed on the effects of each drug as well as on the effects of polydrug use.

Cocaine is one drug where some data on prenatal use is available. Reported effects on women who use cocaine during pregnancy include increased blood pressure, heart rate, and contractions of the uterus; decreased flow of blood through the placenta; and a decrease in appetite. The vasoconstricting property of cocaine may account for an increased rate of abruptio placenta. Reports on the effects of prenatal cocaine exposure are inconsistent, but lower birth weight, shorter length, small head circumference, and Sudden Infant Death Syndrome (SIDS) have been reported in the literature.

Women who have given birth to a child prenatally exposed to alcohol or illegal drugs, and who are not treated for their chemical dependency, are at high risk for giving birth to subsequent children prenatally exposed to these substances. Chemically dependent women often avoid seeking prenatal care and treatment services for fear of repercussions, such as CPS referrals or incarceration. Lack of basic life skills, appropriate child care, and transportation are other reasons women using alcohol or illegal drugs during pregnancy fail to appropriately seek and use services.

Education has been shown to be effective in reducing tobacco, alcohol and illegal drug use in pregnant women who are not chemically dependent. Education alone does not impact alcohol and drug use among chemically dependent women, the ones most likely to produce the majority of children with ARBDs and other drug effects. For instance, research indicates that 70% of women who have a child with FAS give birth to a subsequent child with an ARBD (either FAS or FAE). However, screening pregnant women for alcohol and drug use and then providing prenatal care and appropriate treatment for chemical dependency has been effective in reducing adverse reproductive outcomes. By restructuring treatment programs to deal more sensitively with social, medical, legal and other issues, larger numbers of women can be retained in treatment. Research performed recently has demonstrated the efficacy of innovative advocacy and ongoing mentoring of chemically dependent women and individuals affected by prenatal alcohol/drug exposure.

Factors contributing to alcohol and drug use during pregnancy

A number of biological and social factors contribute to the use of alcohol and drugs in pregnancy. These include:

Social

Multi-generational/ environmental factors including:

Chemically dependent parents and partners, Poverty, Domestic violence, Inadequate housing, Lack of health care, Poor self-esteem , Abuse (sexual, physical, etc.)

Biological

Polydrug use, Nutrition, Patterns of Use, STDs, Genetics, Metabolism

Strategies for prevention of chemical use during pregnancy include:

- Develop and fully implement a statewide, coordinated, comprehensive primary prevention/education program aimed at the elimination of prenatal exposures to tobacco, alcohol and drugs.
  - Implement a comprehensive K-12 education program about the causes and effects of prenatal exposures to tobacco, alcohol, and drugs.
  - Implement mass media campaigns to increase awareness among the general public about the causes and effects of prenatal exposures to tobacco, alcohol, and drugs.
  - Require birth defects warning signs at all Washington State purchase points for alcoholic beverages (by container and by glass).
  - Implement a statewide program aimed at educating primary care and other service providers (i.e. in social services, mental health, education, etc.) about the causes and effects of prenatal exposures to tobacco, alcohol, and drugs.
  - Develop a model for a coordinated, statewide, early identification, referral, tracking, diagnosis, and treatment program for children with ARBDs or disabilities caused by other prenatal drug exposures.
  - Include in the uniform benefits package appropriate services for children with alcohol and drug related birth defects and their caretakers.
  - Conduct population-based screening for ARBDs in all children prior to finishing first grade; screening of all children in foster/adoptive programs before placement; and screening of all siblings of individuals with ARBDs.
  - Educate primary care providers regarding appropriate assessment for ARBDs and other prenatal drug exposures, and appropriate reasons for referral for diagnosis and treatment.

- Develop community-based models which include training, monitoring, and evaluation that would:

  Empower communities, families, and caretakers to examine issues regarding these complex problems;

  Accept that affected individuals have organic brain dysfunction and, therefore, have developmental disabilities;

  Recognize that affected individuals can be successful if the environment around them adapts to their disabilities;

  Provide cross-disciplinary, community-wide systems of support to individuals with ARBDs or disabilities related to prenatal drug exposures (e.g. community-based residence programs or specialized mentoring and long-term advocacy programs); and carry out program evaluation and use the results in ongoing program improvement.

- Develop a model for a coordinated, statewide, early identification, referral, tracking, diagnosis, treatment and prevention program for birth mothers who have produced or are at risk of producing children prenatally exposed to tobacco, alcohol and/or other drugs.
  - Include the following services in the uniform benefits package: home health care and prenatal care for pregnant women who use alcohol or drugs during pregnancy, comprehensive outreach and advocacy, long-term case management, chemical dependency treatment, and family planning services.
  - Develop and implement systematic, anonymous biological screening at birth to establish baseline data on the incidence of illegal drug use during pregnancy.
  - Promote complete comprehensive tobacco, alcohol and drug assessment for all pregnant women by health and social service providers.
  - Develop strategies to assure access to adequate health care for women using tobacco, alcohol and/or drugs just prior to and during pregnancy.
  - Develop comprehensive, multi-disciplinary, culturally appropriate outreach and long-term case management models for high risk women.
  - Enhance the existing continuum of treatment services for substance abusing women.

Standards for chemical use in pregnancy

	Washington State				United States		
		Baseline		Year 2000 Target	Baseline		Year 2000 Target
	Year(s)	Count	Rate	Rate	Year(s)	Rate	Rate
% Abstaining from Tobacco During Pregnancy	1990-92	195,416	82%	90%	1991	80%	90%
% Abstaining from Alcohol During Pregnancy	1992	73,550	93%	94%	1990	79%	20% increase
% Abstaining from Illegal Drugs During Pregnancy	NA				NA		20% increase
Prevalence Rate of Alcohol Related Birth Defects	1993-94	NA	1/600*	1/1000	NA		

*This figure is an estimate of the statewide prevalence rate. A survey in two Washington counties found a rate of 1/200.

Sources: Community and Family H, Healthy People 2000

Environmentalhealth

The gains in health and life expectancy that have been experienced since the turn of the century largely reflect environmental health interventions. Even today, exposure to environmental hazards can be a major contributing cause of disease, injury, and death. Routes of exposure can be as clear as contamination of drinking water and food, or as baffling and obscure as exposures to indoor air contaminants or insect/rodent borne hazards such as Lyme Disease and Hantavirus. Other environmental health threats include workplace hazards and exposures to pesticides and other chemicals.

Until the 1960s and 1970s, environmental health activities were an integral part of public health services. During this period, major changes occurred which combined such issues as energy conservation and natural resource protection with traditional environmental health activities.

The changes were symbolized at the federal level by the creation of the United States Environmental Protection Agency (EPA) to administer programs concerned with air and water, solid waste, and pesticides, and setting standards for ionizing radiation. The responsibility for identification, education, and modification of important environmental factors that increase the risk of illness and premature death was separated from other interrelated public health functions. As a result, many observers believe the health implications of environmental hazards have not received the depth of analysis or the level of support they deserve. In some cases, uninformed analysis of environmental health risks may have exacerbated fears of those risks unnecessarily.

Washington State has responded to many of the national initiatives. Recognition of the unique role of public health resulted in the creation of the Department of Health in 1989. This helped refocus the state on public health issues, and has firmly re-established environmental health as one of the essential components of public health protection.

This report describes and develops standards for a few key environmental problem areas which were identified by public health professionals in the state in 1993:

- Drinking Water
- Hazardous substances
- Occupational hazard exposure
- Food protection
- Shellfish growing areas
- Recreational water

It should be noted that the work presented here is limited, and does not include standards for many other significant environmental health issues such as radiation, vector-borne diseases, housing related issues, and point and non-point pollution source control.

In preventing illness, injury, and death from environmental hazards, public health's first task is to identify causes. Programs or activities can then be developed to alleviate the causes. Since the science is still evolving, we do not always understand synergistic effects, combined pathways, persistence of harmful agents in the environment, and acute and long-term exposures to hazardous substances that affect our health. This impedes our ability to assess the risk associated with many contaminants. Also, as our understanding increases, environmental problems which we have not yet identified will need to be added to the standards. This is clearly indicated by the progressive identification of pathogens and chemical hazards which new laboratory methods now detect: Giardia

lamblia (1976), Legionnaires' disease (1977), Campylobacter jejuni (1980), aldicarb (1985), E. coli 0157:H7 (1985), Lyme Disease (1986), domoic acid (1991), Cryptosporidium (1992), Phosdrin (1992), and Hantavirus (1993).

The lack of appropriate baseline data is a major concern as environmental health standards are developed. This is due to several factors, including the lack of existing monitoring programs, and, where data does exist, data programs that are not compatible. A major thrust for environmental health over the next several years will be the development, integration and coordination of data between programs and agencies, and the development of adequate environmental monitoring systems to measure the progress of intervention strategies. This will allow both health and resource protection agencies to accurately assess problems and anticipate future needs. The program areas, health status indicators, and environmental exposure indicators developed in Washington State in the Environmental Health Addendum to APEX/PH will provide some direction for data development.

Development of the data necessary to evaluate the impacts from environmental threats requires careful coordination of laboratory test data. Every effort must be made to assure that data are readily accessible and of the highest possible quality. The state laboratory system provides reference capability, technical support, quality assurance oversight, laboratory certification services, and training for the private laboratories that provide routine testing. The state laboratories, working with local public health jurisdictions, also provide capacity to support investigations and to respond in the event of emergency.

In many cases the scope of the standards required to protect the public exceeds the authority of any one agency. Often the intervention strategies proposed will require federal, state, and local agencies, and Indian tribes, to work closely together to assure the public's health and safety. This is particularly true for the water quality, air quality, and toxic waste problems, which are principally directed by federal legislative mandates. Solutions to many problems will also require the cooperation of private enterprise and a commitment by the public.

Drinking water

Safe, reliable, and affordable drinking water is one of the most basic human requirements. In Washington State, people may receive their drinking water from public systems serving thousands of people, or from individual systems with less than two connections. Depending on the size of the system, the challenge of protecting the public's health varies significantly.

Public water systems

Washington ranks third highest among the 50 states in the number of water systems violating the federal Safe Drinking Water Act (SDWA) and seventh highest in the percentage of population (36%) served by water systems not in compliance. During 1991 and 1992, the state is reported to have had the highest number of violations of drinking water standards in the nation and the fifth highest number of monitoring and reporting violations.

The U.S. Environmental Protection Agency (EPA) considers any water system that is not monitored or is in violation of maximum contaminant level (MCL) to be in violation and unsafe. The 1986 Amendments to the SDWA require the EPA to establish 83 new drinking water standards by 1990 and 25 new ones every three years thereafter. The implementation of these federal requirements has created a tremendous burden on state and local resources.

The economic impact of the new SDWA standards on affected water systems is substantial. Public water systems will need to spend over 2.2 billion dollars in infrastructure improvements, of which $917 million currently has no identified source of funding. In addition, the quality of groundwater being used by small systems is largely unknown relative to the new drinking water standards for synthetic organic chemicals. SDWA monitoring for these contaminants is complex and costly, and will impose a significant burden on these systems as well as on the state's regulatory program. There is a need to focus on federal reauthorization of the SDWA, strengthening it to provide greater emphasis on risk-based standards, greater flexibility in state implementation of standards, and federal assistance to water systems for implementing requirements.

Washington is also facing challenges because of its large number of small systems. There are 14,435 public water systems in the state. Only about 200 of these have more than 1,000 service connections, but they serve 85% of the state's population. Ninety-five percent have less than 100 connections. Seventy percent have less than 15 connections, and the number of such small systems is increasing rapidly. These 10,000 very small systems serve only about 2% of the population, but require disproportionate amounts of regulatory attention.

Consumers being served by small water systems may be at greater risk of waterborne illness than those served by large systems because the design criteria are lower and there are fewer testing requirements. There is inadequate operation and maintenance due to lack of water system training. Systems with fewer than 100 service connections are not required to have certified operators unless they use surface water. Small systems are often owned and operated by homeowner associations, with no one person having clear responsibility for the system. Regulatory oversight and the assurance of reliable public health protection become increasingly difficult as the number of small water systems increases.

Factors leading to problems with public drinking water systems include:

- Inadequate state, local and tribal resources.
- Requirements of the federal SDWA that are underfunded, inflexible, and are creating a significant economic burden on small communities.
- Lack of financial assistance programs for small water systems.
- Inadequate understanding by the public health community, state decision makers, water system owners and operators, and the public at large of the risks associated with the new drinking water standards.
- The reluctance of the larger utilities to provide management service to small systems, and the reluctance of small system owners and customers to become part of larger systems.

Intervention strategies to deal with public water system problems include:

- Direct state efforts to amend the federal Safe Drinking Water Act (SDWA) allowing greater state flexibility, easing the burden on small communities, and providing more resources for implementation.
- Develop a comprehensive state revolving fund program for public water systems to assure compliance with SDWA requirements.
- Enact legislation to prevent the formation of non-viable systems.
- Adopt legislation requiring that all Group A public water systems have certified operators.

- Implement a routine sanitary survey program to monitor drinking water systems.
- Use Water System Operating Permits to monitor compliance with public health requirements.
- Require all new and expanding public water systems to meet state design and construction standards.
- Develop and maintain a statewide program to help small communities determine vulnerability of their supplies and reduce their monitoring requirements.
- Establish satellite management agencies in each county to assume operation of existing non-viable systems and service new system needs.
- Respond to consumer complaints and correct all verified public health problems.
- Develop and implement an effective water quality monitoring and data assessment program designed to measure the effectiveness of intervention strategies and identify emerging public health problems.
- Establish and maintain a database to track compliance with state rules enhancing program management and SDWA compliance.
- Ensure that all databases can be/are integrated into the overall Department of Health health information system.
- Develop and implement a program to effectively educate health department staff and the public on health risks of unsafe drinking water.
- Develop and maintain a comprehensive education and training program on health concerns related to drinking water.
- Develop and maintain a statewide database for Group B public water systems (between 2 and 10 connections).
- Encourage active public health participation in the development of the state's water resource policies and watershed management plans.
- Adopt regulations that require a source of supply analysis, and comprehensive conservation plans, including minimum water system reliability standards that include emergency plans and thresholds for additional water resources.

Public water systems (PWS) standards

(Outcome standards are for the year 2000 unless otherwise noted.)

Variable	Baseline	Outcome Standard
Waterborne Disease Outbreaks	13 outbreaks (Total, 1982-1991)	No more than 1 outbreak per year of pathogenic and/or chemical waterborne disease
Water System Operating Permits	78% compliance with Group A PWS operating permit requirements (1993)	95% compliance with Group A PWS comply with operating permit requirements.
Water System Monitoring	80% compliance with Group A PWS primary monitoring requirements (1993)	95% compliance with Group a PWS primary monitoring requirements.
Maximum Contaminant Level (MCL) Compliance	83% MCL compliance with Group A PWS MCL requirements (1993)	95% compliance with Group A PWS MCL requirements.
Operator Certification	15% of all Group A PWS have certified operators (100% compliance with current WAC-1993)	All Group A PWS have certified operators.
Regional Water Supply Plans for Critical Water Supply Areas (CWSSAs)	21 (100%) of CWSSAs have initiated and/or completed initial CWSSP.	By 2010, CWSS state's 21 CWSSAs remain current
Water Systems Plans (WSP)	5% of Group A community PWS have approved WSP.	95% of Group A community PWSs have approves WSPs.
Technical Assistance (Sanitary Survey)	186 community Group A PWSs surveyed annually (5 year annualized data, 1993); 5% of non-community PWSs surveyed within last 5 years.	All community Group A PWSs surveyed annually, and non-community PWSs surveyed every 3 years.
Satellite Management Agency (SMA)	30% of counties with SMA	All Counties have at least 1 SMA.

Individual drinking water systems

Individual water systems serve approximately 13% of the state's population. These systems may provide a lower level of public health protection to their users, and are proliferating in areas which are already, or could be, served by existing larger systems. Individual water systems primarily use ground water as their source of supply.

The state has requirements for well siting and construction, but lacks resources to ensure compliance. There is no effective program to provide well owners with water quality monitoring and technical assistance when problems occur.

There are inadequate resources for the Department of Health, Department of Ecology, local public health jurisdictions, and tribes to ensure compliance with well siting, construction, and abandonment requirements. Technical information, educational programs, and water quality maintenance requirements are inadequate. In addition, the costs to individual homeowners to connect to existing public water systems may exceed the cost of constructing a new well. This discourages many homeowners from making the better public health protection choice.

Intervention strategies regarding individual water systems include:

- Adopt state legislation requiring counties to adopt ordinances limiting new individual water supplies to areas which cannot be served by an existing Group A system.
- Provide technical assistance to persons using individual wells in water quality monitoring, well abandonment, and source protection.
- Ensure that all data bases can be/are integrated into the overall Department of Health health information system.
- Provide education on the benefits of shared water facilities versus individual systems.
- Ensure that all domestic water supply wells comply with state siting and construction standards.

Individual water systems: Water quality standards

(Outcome standards are for the year 2000 unless otherwise noted.)

Variable	Baseline	Outcome Standards
Source Adequacy	50% of local governments have implemented RCW 19.27.097 adequacy requirements (1992)	All local governments have implemented the adequacy requirements of RCW 19.27.097.
Proliferation of New Water Supplies	No counties have enacted ordinances limiting new individual water systems to areas that cannot be adequately served an existing Group A water system. (1993)	All counties have ordinances limiting new individual water systems to areas that cannot be served by an existing Group A public water system.

Source protection

Washington's waters are a limited resource for which there is growing demand. From a public health perspective, individual and public drinking water supplies, as well as recreational uses and shellfish production, are of particular importance. Maintaining and protecting the purity and high quality of water sources are critical aspects of providing safe and adequate drinking water.

Currently, over 75% of the state's population derives its drinking water from surface sources. Over 90% of water systems use groundwater as their sole source of supply, and in some basins there is a limit, if not a shortage, of new sources of supply.

Prevention of water contamination is of critical importance. On-site wastewater treatment and disposal is a particular problem because of the large number of new on-site systems being created (25,000 per year), and because many systems still in use were built before regulations emphasized the treatment of sewage.

Drought conditions and other short-term emergency water shortage situations require immediate action to ensure adequate quantity and quality of water. Growth Management Act (GMA) planning impacts available water resources, but should ensure that adequate and reliable sources of drinking water are available. However, without coordination between Coordinated Water System Plans, utility comprehensive plans, GMA plans and water resources management plans, the ability to ensure adequate and reliable drinking water is jeopardized.

Intervention strategies related to groundwater include:

- Develop and implement an interagency comprehensive groundwater protection strategy including GMA critical areas, groundwater management areas, and wellhead protection.
- Adopt wastewater reuse and greywater standards to assure public health protection through appropriate treatment, distribution, and reuse of municipal wastewater and household sewage.
- Improve the coordination between participating state and tribal agencies.
- Create community-based management systems to assure reliable operation and maintenance.
- Develop and maintain an integrated water resource database accessible to state and local users.
- Ensure that all databases can be/are integrated into the overall Department of Health health information system.
- Develop model management strategies for on-site sewage systems and implement them first within designated areas of special concern.
- Develop the capacity to identify on-site sewage systems that are not providing adequate treatment.
- Develop and implement a model training and certification program directed first to on-site system operation and maintenance personnel.

Source protection standards

(Outcome standards are for the year 2000 unless otherwise noted.)

Variable	Baseline	Outcome Standards
Groundwater Source Protection	<5% of Group A WSPs using ground water have delineated and inventoried wellhead protection areas (1993).	All Group A PWS using ground water have delineated and inventoried wellhead protection areas.
Surface Water Source Protection	<10% of Group A PWS using surface water sources have a watershed control program. (Est. 1994, 179 PWS)	All Group A PWS using surface water as a source of supply have watershed control programs.
Critical Aquifer Recharge Areas	77% of counties have identified critical aquifer recharge areas. (1993)	By 1997, 100% of the states critical aquifer recharge areas identified and protected.

Hazardous substances

Hazardous substances are a threat to human health when an exposure occurs at a dose sufficient to cause either acute or chronic health effects. The release of these substances into the environment can lead to the contamination of water, air, soil, and food. These substances and their by-products may persist and accumulate in the environment, the food chain, and the human body.

The exposure of an individual or a community is examined in terms of the total exposure. All possible routes of exposure must be considered to determine the actual dose of the hazardous substance to which the body is exposed. In order to eliminate or control exposure, all pathways, including air, water, food and, soil, must be addressed.

There are currently some 1259 hazardous waste sites identified in Washington State. Of these, 409 have confirmed groundwater contamination problems, and an additional 601 have potential ground water problems.

The federal Agency for Toxic Substances and Disease Registry (ATSDR) has identified seven health conditions that appear consistently with chronic or long-term human exposure to hazardous substances located around hazardous waste sites. These seven health indicators are birth defects and reproductive disorders, cancers, immune function disorders, kidney dysfunction, liver dysfunction, lung and respiratory disease, and neurotoxic and behavioral disorders.

Factors leading to problems associated with hazardous substances include:

- Steadily increasing releases of hazardous substances into the environment, both in terms of number and total volume.
- Inadequate resources to examine the new and emerging issues in the epidemiology and the toxicology of hazardous substances.
- Poorly documented etiology linking hazardous substance exposures to disease, i.e., the science relating specific substances to a specific disease.
- Lack of a statewide database or surveillance system to compile epidemiologic and environmental data necessary to identify and assess health conditions.
- Insufficient epidemiologic data on health conditions which may be caused or exacerbated by hazardous substances (e.g., respiratory conditions, neurotoxic and behavioral disorders, birth defects).
- Lack of assurance of environmental equity to those special populations at greater risk of overexposure due to their cultural traditions or socioeconomic constraints.
- Lack of knowledge and understanding by the public and health professionals regarding health effects and "safe levels" of exposures to hazardous substances.
- Degradation of ambient and indoor air quality as the result of emissions from industrial and nonindustrial sources (i.e., wood stoves, fugitive dusts, natural disasters, motor vehicles).
- Minimal coordination between the various state and federal agencies with vested interest in the various components of the environment to develop and promulgate standards.

Intervention strategies for hazardous substances include:

- Establish a forum to bring together state agencies (e.g., Departments of Health, Ecology, Labor & Industries, and Transportation) and the appropriate federal agencies to explore the feasibility of coordinating efforts in developing environmental standards.
- Promote the improvement of environmental health education in the schools, colleges, and universities in Washington State.
- Develop a program to educate the public, health professionals, and health care providers on health risks associated with hazardous substances.
- Establish a mechanism to facilitate the flow and exchange of information regarding health risks to the public during crisis periods, such as hazardous waste spills, disease cluster investigations, natural disasters, or other issues of special concern.
- Establish a statewide surveillance system to track sentinel health events, health trends, and the overall health status of communities at risk of exposure to hazardous substances.
- Identify those factors which place subpopulations of a community at a higher risk of adverse health outcomes from environmental exposures such as fish consumption or residential lead exposure.
- Provide adequate support and funding to state and local air pollution authorities and local health agencies to develop air quality reporting, monitoring, and health advisory systems.
- Link ambient air quality monitoring with respiratory related hospital/clinic admissions to better understand the association between air quality and respiratory illness.
- Strengthen vehicle emission testing and promote car pooling and mass transit systems to reduce emissions of hazardous substances.
- Educate the public about indoor air quality, including prevention, abatement, and control of specific problem sources such as wood stoves and naturally occurring radioactivity.
- Provide ongoing, joint training of environmental health practitioners and health care providers to bridge the gap between the science of human exposure to hazardous substances and treatment of the individual.
- Provide adequate support and funding to state and local public health jurisdictions to assess the impact of hazardous substances on the overall health of the community.
- Promote scientific research into the health effects of exposures to hazardous substances, and develop methods to improve environmental risk estimates.

Hazardous substance standards

Outcome standards are for the year 2000 unless otherwise noted.

Variable	Baseline	Outcome Standards
Environmental Health Education: Elementary and Secondary Schools	Elementary-level environmental health education program is presented in 1% of the schools in Washington state. (1993)	Elementary-level environmental education program presented in 5% of the schools in Washington state.
Hazardous Substances Health Education: Collegiate Level	One environmental health seminar was sponsored and conducted at three of the state's institutes of higher learning.	Ten environmental health seminars conducted at the various state's institutions of higher learning.
Surveillance and Data Needs: Evaluate the relationship between illness and exposure to hazardous substances.	Identified, assessed and are tracking two health conditions possibly associated with environmental exposure from hazardous substances. (1993)	Identify, assess and track all seven priority health conditions found associated with communities located near State hazardous waste sites.
Indoor Air Quality	370 complaints/year (Department of Health-1993)	300 complaints per year.
Pesticide Exposure Incidents	500 pesticide exposure incidents per year. (1993)	No more than 400 pesticide exposure incidents per year.
Toxic Wastes Released by Licensed Activities Into Air	Forty percent of state residents are breathing air meeting EPA National Ambient Air Quality Standards. (1992)	Sixty percent of the state's residents breath air meeting EPA National Ambient Air Quality Standards.
Environmental Equity	Two research studies are underway which target the unique exposures of special population to environmental agents (i.e. residential lead; shellfish consumption).	Conduct five research studies where special populations are exposed to hazardous substances because of their cultural and/or social/economic status.
Hazardous Substance Health Education: Health Care Providers and Other Professionals	Conducted one workshop in 1994 for health professionals	Conduct four workshops, or short courses per year for health professionals and health care providers.
Disease/Illness Cluster Investigation	50% disease/illness clusters that were perceived as environmental in origin were investigated within the past twelve months. (1993)	Investigate 100% of the disease/illness clusters reported to be related to exposure to hazardous substances.
Environmental Health Education for Communities Affected by Exposure to Hazardous Substances	Four "fact sheets" addressing health concerns and health effects from exposures were developed and distributed. (1993)	Develop and distribute ten "fact sheets" about health concerns and health effects from hazardous substance exposures.

Occupational hazard exposure

The public is increasingly concerned about occupational risks, and public health officials have few reliable surveillance systems and data bases to help them assess such risks. There is a need to identify work related injuries and diseases having significant impact, and to improve surveillance and intervention as soon as possible. For example, there is no reliable count of children and adolescents in the workplace, since there is currently no requirement for a prospective child employee to obtain a personal work permit; similarly, there is no method to identify work status (i.e., full- or part-time) for working children, since there are no records of number of hours worked reported to Employment Security by age of worker. It is thus not possible to calculate child injury or illness rates in a manner comparable to adults.

The roles of state and county public health agencies in occupationally related problems are not well defined. Currently there is strict allocation of responsibility to the Department of Labor and Industries (L&I). However, this fails to recognize the role of health agencies in surveillance, health education, outbreak investigation and assurance of timely and effective delivery of services. For example, workers frequently contact health agencies for information first, sometimes fearing employer reprisals if the contact results in investigation by L&I. Certain occupational problems result in overlapping responsibilities with the Department of Health; examples include the child who is exposed to lead dust brought home on work clothes, and residents exposed in their homes by pesticide drift from agricultural applications.

Occupational issues are complex, require decision-making under conditions of uncertainty, and impact the health and finances of the individual and the community. Addressing the public under these circumstances requires considerable expertise, and errors in communicating risk may unnecessarily heighten concern. Few public officials have had training in "risk communication."

Specific areas of concern include:

Fatal occupational injury: There are roughly 100 traumatic occupational fatalities every year in our state. Death on the job is tragic, but it is not inevitable, even in the high risk occupations and industries. The workplace is the most controlled environment possible in our open society, and while e may not be able to prevent all work-related injuries, we should prevent all fatal occupational injuries. Work in farming, forestry, fishing, and construction is particularly hazardous, though death involving a motor vehicle is the most common traumatic occupational fatality. While our state fatal occupational injury rate is comparable to the national rate, certain populations are at high risk, geographically and by industry type.

Worker injury and illness: Non-fatal occupational injuries and illnesses result in significant worker morbidity, time away from work, and disability. There are over 200,000 claims each year to Workers Compensation in our state for injuries alone. Such injuries adversely effect the personal lives of workers, as well as having significant societal costs in terms of lost productivity, permanent disability, and need for job retraining. Injuries to adolescents pose a special problem, especially in retail trade businesses such as restaurants and food stores, which employ higher proportions of adolescents than do other businesses.

Cumulative trauma disorders: Cumulative Trauma Disorders (CTDs) result from repetitive motion or pressure to joints, tendons and ligaments. There has been a trend of markedly increasing rates, nationally and in our state, over the past decade. CTD results in significant morbidity, lost productivity, and may require permanent job changes, many

times to lower paying jobs. Cumulative trauma disorders may be prevented by applying principles of ergonomics to job design, providing tools which allow joints to be in their anatomically neutral positions during motion, using equipment which dampens vibration, and avoiding activities which involve a great deal of repetition, force, or awkward postures.

Skin disorders: Skin disorders are among the most frequently reported occupational diseases, accounting in 1987 for 28% of all occupational illnesses. These illnesses are distressing to workers, result in lost productivity, can be permanently disabling, and may result in job dislocation because of skin sensitivity. Preventive measures such as chemical substitution, engineering controls, personal protective equipment, and worker education can be effective in reducing the incidence of occupational skin disorders.

Lead: Exposure to lead can produce a variety of adverse cardiovascular, reproductive, neurologic, and blood-related effects. The initial symptoms can be insidious and may result in irreversible disability or death. Workers, their children, and developing fetuses can be affected. Intervention strategies have been shown to be effective. The U.S. Public Health Service has set a goal of eliminating occupational exposures which result in blood lead concentrations greater than 25 mcg/dL by the year 2000.

The reduction of exposure to lead and other hazards depends first on obtaining adequate information about the problem, and then educating employers and employees on ways to control the exposure.

Local public health jurisdictions have a role to play in the prevention of occupational disease and injury, but to do this effectively, a statewide policy needs to be developed. L&I and the Department of Health need to enter into a formal memorandum of understanding that defines the role of health agencies in occupational health issues. The result can be an occupational health program including a defined role for state and local health agencies in collaboration with L&I. This program can include surveillance of general and specific health outcome indicators, knowledge of general occupational health and safety issues, outbreak investigations, and assurance of timely and effective delivery of public health functions.

Intervention strategies to reduce occupational exposure include:

- Identify high risk areas (including industries, occupations, and demographic groups) and target them for education, technical assistance, and hazard surveillance.
- Use workers compensation claim data to identify counties, and specific employers, with high injury and illness rates.
- Use Bureau of Labor Statistics data (Census of Fatal Occupational Injuries, Occupational Injury and Illness Survey) to identify racial/ethnic groups with high injury and illness rates.
- Develop a system to track progress toward the outcome objectives.
- Identify work-related injuries/diseases for which insufficient incidence/prevalence data exist, but where the potential and severity of resulting worker disability mandates the development of surveillance and intervention activities. (An example is occupational lung disease.)
- Investigate all fatal occupational injuries.
- Refine the method of counting occupational skin disorders, using the results from the NIOSH-funded Sentinel Event Notification System for Occupational Risk (SENSOR) surveillance project.

- Determine the source of lead exposure for all individuals with lead concentrations over 25 mcg/dL.
- Increase the number of lead-using employers who offer biological monitoring to lead-exposed employees.
- Recognize and define the role of local public health jurisdictions in prevention of occupational injury and disease. L&I and the Department of Health should plan to enter into a formal memorandum of understanding that defines the role of health agencies in occupational health issues.
- Develop economic incentives, such as industrial insurance pricing structures, to motivate employers to comply with prevention guidelines aimed at reducing exposure to occupational hazards.
- Periodically review existing child labor regulations, to revise prohibited duties based on research findings and knowledge about adolescent developmental capabilities.
- Plan the Washington State implementation of the federal School-to-Work Opportunities Act of 1994 to include health and safety training modules in the curricula.
- Develop relevant safety and security standards to protect employees at high risk of fatal injury.
- Develop prevention measures for respiratory illnesses, such as tuberculosis, for at-risk occupational groups.
- Provide effective risk communication training.
- Communicate effectively with the news media.
- Promote age-appropriate education and training programs on workplace health and safety issues to employers and schools, including hazard communication, injury prevention, use of personal protective equipment, and safe task performance and tool-handling.
- Educate employers and employees regarding likely sources of occupational injury risks (chemical, physical, mechanical, or vector).
- Provide periodic driver education with emphasis on seat belt usage.
- Provide employer and worker education to prevent CTDs.
- Educate employers and employees regarding likely sources of skin disorders (chemical, physical, mechanical, or vector).
- Provide information and technical assistance regarding risk reduction of lead exposure in the home and the workplace.
- Promote employee/employer education on risks associated with drug, alcohol and tobacco use in the workplace.
- Decrease exposure through chemical or process substitutes, engineering controls, personal protective equipment, and work practices.
- Use worksite inspections and enforcement of regulations where necessary to reduce current occupational hazards and deter future hazards.
- Promulgate relevant safety and security standards to protect employees at high risk of fatal injury.
- Apply principles of ergonomics in job design to prevent CTDs.
- Increase the proportion of primary care providers who routinely elicit occupational health exposures as a part of patient history and provide relevant counseling.
- Coordinate interagency efforts relating to occupational health.
- Design planned public health databases (including the Health Services Information System), and redesign existing public health databases, to incorporate occupational data fields including occupation, industry, and employer.
- Make certain occupational conditions "reportable" under a public health system separate from workers compensation.
- Ensure that all databases can be/are integrated into the overall Department of Health information system.

Occupational hazard exposure: Outcome standards

Fatal Occupational Injuries (rate per 100,000)

Census of fatal occupational injuries data

	Washington State				United States		
	Year(s)	Baseline Count	Rate	Year 2000 Target Rate	Year(s)	Baseline Rate	Year 2000 Target Rate
All Industries	1993	108	4.5	3.7	1987	6.0	4.0
Construction	1991-93	11	9.9	8.0	1987	25.0	17.0
Transportation	1991-93	17	1.4	11.0	1987	15.2	10.0
Agriculture	1991-93	6	9.6	7.5	1987	14.0	9.5
Logging	1991-93	5	58.3	2.9		NA	NA

*Technical notes: Washington data are from L&I/ BLS Census of Fatal Occupational Injuries (CFOI); US data from Bureau of Labor Statistics Annual Survey. Rates are calculated per 100,000 full-time equivalent (FTE) workers: self-employed and active duty military are included only in the "all industry" rate. Counts and rates for 1991-93 are annualized.

Non-fatal occupational injuries (rate per 100)

Bureau of Labor Statistics Annual Survey

	Washington State				United States		
	Year(s)	Baseline Count	Rate	Year 2000 Target Rate	Year(s)	Baseline Rate	Year 2000 Target Rate
All Industries	1992	149,100	10.8	9	1987	7.7	6
Construction	1992	19,400	21.3	17	1987	14.9	10
Health Care	1992	6,100	23.9	19	1987	12.7	9
Agriculture	1992	4,700	12.7	10	1987	12.4	8
Transportation	1992	12,100	12.9	10	1987	8.3	6
Logging	1992	2,100	29.9	22		NA	NA

*Technical notes: Data are from Bureau of Labor Statistics Annual Survey of private sector employers. Counts are estimates based on survey sampling. Rates are calculated per 100 full-time equivalent (FTE) workers.

Workers compensation data

	Washington State				United States		
	Year(s)	Baseline Count	Rate	Year 2000 Target Rate	Baseline Year(s)	Rate	Year 2000 Target Rate
All Industries, All Claims	1993	161,926	13.4	12.0		NA	NA
Construction	1993	28,380	30.2	24.0		NA	NA
Health Care	1993	8,280	11.2	10.0		NA	NA
Agriculture	1993	8,901	16.7	13.0		NA	NA
Transportation	1993	7,015	17.1	14.0		NA	NA
Logging	1993	1,582	41.8	33.0		NA	NA
All Industries, Time Loss Claims	1993	32,973	2.7	2.4		NA	NA
Construction	1993	6,655	7.1	5.8		NA	NA
Health Care	1993	1,974	2.7	2.4		NA	NA
Agriculture	1993	1,954	3.6	2.9		NA	NA
Transportation	1993	2,088	5.1	4.3		NA	NA
Logging	1993	573	15.1	12.		NA	NA

*Technical notes: Data are from L&I Workers' Compensation program, State Fund employers only Time loss is defined as more than three days; claims include only those for which medical benefit were paid. Rates are calculated per 100 full-time equivalent (FTE) workers. NA = not available.

Occupational injuries to adolescents aged 16-17 (rate per 100)
L&I workers compensation data

	Washington State				United States		
	Year(s)	Baseline Count	Rate	Year 2000 Target Rate	Baseline Year(s)	Rate	Year 2000 Target Rate
All Industries	1990	4,031	9.0	5		NA	NA
Construction	1990	159	21.1	10		NA	NA
Agriculture	1990	170	11.4	6		NA	NA
Restaurants	1990	1,640	11.0	6		NA	NA

*Technical notes: Data are from L&I Workers' Compensation program, State Fund and self-insured employers. Rates are calculated per 100 workers, full and part-time; denominators are from 1990 US Census data, not comparable Workers Compensation data.

All *cumulative trauma* disorders (*rate* per 100,000)
Bureau of labor statistics annual survey

	Washington State				United States		
	Year(s)	Baseline Count	Rate	Year 2000 Target Rate	Year(s)	Baseline Rate	Year 2000 Target Rate
All Industries	1992	8,206	594	440	1987	100	60
Manufacturing	1992	5,866	1831	1180	1987	355	150
Meat Products	1992	302	7446	5200	1987	3920	2000
Construction	1992	198	217	180		NA	NA

*Technical notes: Data are from Bureau of Labor Statistics Annual Survey of private sector employers. Cases are defined as "cumulative trauma disorder," which includes carpal tunnel syndrome and other disorders due to repeated injury such as bursitis, Raynaud's, and noise-induced hearing loss. Counts are estimates, based on survey sampling. Rates are calculated per 100,000 full-time equivalent (FTE) workers.

Cumulative trauma disorders (*rate* per 100,000)
L&I workers compensation data: Carpal tunnel syndrome

	Washington State				United States		
	Year(s)	Baseline Count	Rate	Year 2000 Target Rate	Year(s)	Baseline Rate	Year 2000 Target Rate
All Industries	1993	1,890	157	120		NA	NA
Manufacturing	1993					NA	NA
Meat Products	1993					NA	NA
Construction	1993	253	269	200		NA	NA

*Technical notes: Data are from L&I Workers' Compensation program, State Fund employers only Cases are defined as claims for Carpal Tunnel Syndrome. Rates are calculated per 100,000 full-time equivalent (FTE) workers.

Occupational skin disorders (*rate* per 100,000)
Bureau of labor statistics annual survey

	Washington State				United States		
	Year(s)	Baseline Count	Rate	Year 2000 Target Rate	Year(s)	Baseline Rate	Year 2000 Target Rate
All Industries	1992	1,377	100	90	1987	64	55
Agriculture	1992	122	224	190		NA	NA

*Technical notes: Data are from Bureau of Labor Statistics Annual Survey of private sector employers. Counts are estimates, based on survey sampling. Rates are calculated per 100,000 full-time equivalent (FTE) workers.

Occupational skin disorders (rate per 100,000)

L&I workers compensation data

	Washington State				United States		
	Year(s)	Baseline Count	Rate	Year 2000 Target Rate	Baseline Year(s)	Rate	Year 2000 Target Rate
All Claims, All Industries	1993	1,044	87	80		NA	NA
Agriculture	1993	114	214	184		NA	NA

*Technical notes: Data are from L&I Workers' Compensation program, State Fund employers only includes all claims for which medical benefits were paid. Rates are calculated per 100,000 full-time equivalent (FTE) workers.

Occupational lead exposure

L&I blood lead concentrations data

	Washington State			United States		
	Year(s)	Baseline Count	Year 2000 Target Count	Baseline Year(s)	Count	Year 2000 Target Count
Lead Registry Data	1994	324	0	1992	7842	0

*Technical notes: Data are from L&I Workers' Compensation program, State Fund employers only includes all claims for which medical benefits were paid. Rates are calculated per 100,000 full-time equivalent (FTE) workers.

Foodprotection

Foodborne organisms and contaminants cause serious illnesses among residents of our state. The causes may be bacteria, viruses, parasites, or chemical contamination of foods. It is estimated that Washington experiences 250,000 cases of foodborne disease annually. A conservative estimate of the cost of these diseases is $160,000,000. These figures do not include recent outbreaks of E.coli O157:H7. If these are included the total cost to the State of Washington would be significantly higher.

Foodborne illnesses can spread rapidly throughout the general population. Examples include the emergence of E.coli O157:H7, which can spread rapidly through food distribution channels, and intermittent exposures of the dining public to food handled by workers who transmit the Hepatitis A virus. These threats are particularly serious among susceptible groups such as infants, young children, the elderly, and people with compromised immunity. They also demonstrate the devastating consequences of foodborne disease, not only for people who get ill and their families, but also for those who work in the food service industry.

Because of the diverse cultural population of the state and improvements in transportation, there are a wide variety of foods available to the people of Washington. Many foods are prepared and eaten at home, but often foods are prepared by retail food establishments and eaten either at home or at or near the point of purchase. Typical food establishments of concern from an environmental health perspective include restaurants, grocery stores, delicatessens, mobile units, food booths at fairs and festivals, and institutions such as schools, hospitals, jails, day care facilities, and nursing homes. Some segments of the population are exposed to additional risk through the collection and consumption of wild plants and animals and the use of herbs and spices that are occasionally contaminated. Another significant area of food safety concern is the occurrence of botulism in foods that are prepared in the home. While there are only a few cases of Botulism poisoning every year, the personal and economic costs are frequently very high.

Prevention is the most critical element of protection against foodborne disease. Prevention requires intervention at many levels, including consumer education, food worker training, epidemiology, emergency response, and changes in agricultural and food industry practices. Since foods are often transported great distances from the farm through one or more processors and distribution centers before reaching the consumer, it is essential that contamination and adulteration be controlled at every step. If contamination is not controlled, foodborne disease often results. Also, potential hazards change as methods of food preparation and production change. Therefore, intervention strategies must be reviewed continually to assure they remain adequate. The role of environmental health practitioners in prevention is to educate the public and food workers and monitor the distribution system.

The prevention of illness is substantially less costly than treatment and curative measures. It is particularly desirable to practice prevention within the food handling process in order to avoid or minimize human suffering, lost productivity, costs of medical treatment, and litigation.

Factors which contribute to the spread of foodborne disease include:

- Improper temperature control by commercial and domestic food handlers during cooking, cooling, hot holding, and reheating of potentially hazardous foods.
- Lack of knowledge about proper food handling by food handlers in homes and food service establishments.
- Contamination of foods of animal origin with foodborne pathogens such as Salmonella spp, Campylobacter jejuni, and Vibrio parahaemolyticus.
- New or emerging pathogens which pose a threat to food safety.
- Inconsistent surveillance and enforcement of minimum food protection standard between communities.
- Processing of foods at the retail and wholesale levels without adequate regulatory oversight.
- Incomplete diagnosis, reporting and investigation of cases and outbreaks of foodborne disease.
- The high turnover rate among retail food workers and managers. (The federal Food and Drug Administration estimates 400% turnover per year among retail food workers and 100% among food service managers.)

Intervention strategies to prevent foodborne disease include:

- Provide regular, continuous, and widespread education to the general public concerning foodborne disease prevention and control.
- Provide more comprehensive education to food industry personnel about general and specific food handling and safety measures, including material tailored to the needs of those not fluent in English, the functionally illiterate, and the physically or mentally challenged.
- Educate infected food handlers and day care providers about specific actions they can take to avoid spreading disease to others, including food handling and contamination prevention techniques.
- Provide adequate numbers of well-trained health professionals and other resources necessary to prevent the introduction and spread of foodborne disease.
- Enhance local capacity to ensure epidemiologic investigations of all foodborne disease outbreaks.
- Develop food programs to address all new emerging diseases by initiating surveillance and education of food workers with targeted interventions directed at the food service industry.
- Standardize food safety regulations used throughout the state by federal, state and, local jurisdictions.
- Provide surveillance which is consistent and responsive at levels commensurate with the risk of spread of foodborne disease.
- Increase use of the hazard analysis, critical control points (HACCP) system to address foodborne disease hazards in a preventive manner.
- Strictly enforce food handling safety regulations at all levels of inspections, with predictable outcomes and consistency between communities.
- Develop field monitoring technologies to detect conditions which foster contamination of food.
- Encourage cooperation among food protection agencies to avoid gaps and overlaps in their activities.
- Develop programs and requirements for certification of all managers of food service establishments serving a complex menu or using complex food preparation methods.
- Encourage health care providers to culture patients when foodborne disease is suspected.
- Provide for prompt notification of the Department of Health and local health agencies in the event of a suspected disease outbreak.
- Develop computer networks for sharing local and national developments regarding food safety.

Food protection standards

	Washington State				United States		
	Baseline			Year 2000 Target	Baseline		Year 2000 Target
	Year(s)	Count	Rate	Rate	Year(s)	Rate	Rate
Foodborne disease cases*	1988-1992	705	14.1	10.2			
Salmonella spp cases**	1988-1992	656	13.1	8.9	1987	18	16
Campylobacter jejuni cases**	1988-1992	900	18.0	15.5	1987	50	25
E. coli 0157:H7 cases**	1988-1992	202	4.0	4.4	1987	8	4
Clostridium perfringens cases*	1988-1992	213	4.3	3.7			

Rates are reported cases per 100,000 population.

*Foodborne disease cases, including clostridium perfringens, are from outbreak reports. Single cases are not counted except for botulism and "chemical" etiologies.

**Enteric disease reporting includes single cases of campylobacter, E. coli 0157:H7, and salmonella spp. It is estimated that 90% of these diseases are foodborne.

Variable	Baseline	Outcome Standards
Risk factors related to the manufacture, processing and service of food	45% retail food establishment inspections result in scores with more than 35 critical violation points. (1993)	No more than 25% of food service establishment inspections result in scores with more than 35 critical violation points. (APEX-EH)

Shellfish growing areas

Washington State is one of the major producers of mollusca n shellfish (oysters, clams, and mussels) in the U.S. In addition, nearly half a million people harvest shellfish recreationally from Washington tidelands.

Organisms such as Hepatitis A virus, other enteric viruses, naturally occurring marine pathogens, and pollution-related pathogens have been identified in Washington State shellfish grown in contaminated waters. Natural biotoxins, such as paralytic shellfish poison (PSP) and domoic acid, are also found frequently in Washington's shellfish. These biotoxins produce both temporary and permanent neurological symptoms, and are potentially fatal. In 1991 over 20 cases of domoic acid poisoning were related to consumption of razor clams from the Washington Coast. A history of PSP toxins in shellfish has created periodic episodes involving varying degrees of severity of illness in consumers.

In the last 15 years, a substantial portion of Puget Sound's shellfish growing areas have been closed to harvest due to inadequate control of point and non-point water pollution sources. Closures limit the public's opportunity to harvest and consume shellfish, and cost the shellfish industry millions of dollars each year. If water quality standards are met for shellfish harvesting, water quality is satisfactory for all water recreation, including swimming, diving, and other water contact activities.

Factors leading to shellfish growing area closures or disease outbreaks include:

- Insufficient governmental resources to identify and correct non-point pollution sources such as on-site sewage systems, farm animal waste, and waste from boats and marinas.
- Insufficient education of recreational shellfish harvesters, especially limited English speaking immigrants.
- Inadequate resources to upgrade sewage treatment plants.
- Insufficient patrolling of closed areas to prevent contaminated shellfish from reaching markets.
- Insufficient monitoring of public recreational shellfish beaches.
- Insufficient education of near shore property owners on effects of land use activities.
- Insufficient support to promote increased enforcement of non-point water pollution regulations.
- Insufficient control of shoreline and watershed development resulting in water quality degradation.

Intervention strategies for shellfish protection include:

- Regularly monitor shellfish growing areas, including commercial areas and public beaches.
- Periodically evaluate local non-point pollution control programs.
- Conduct epidemiological investigations of foodborne illnesses associated with shellfish.
- Establish an educational program about safe shellfish harvesting and consuming practices, including the risks associated with eating raw shellfish.
- Expand the cultural outreach education targeting high shellfish consuming populations.
- Expand education about proper cooking of shellfish during the summer when the risk of Vibrio parahaemolyticus infections is highest.
- Regularly patrol areas closed to harvest.
- Locate and correct non-point pollution sources.
- Provide state technical assistance to local governments.
- Provide ongoing evaluation of point and non-point pollution control methods.
- Close implicated shellfish growing areas when there is a confirmed outbreak associated with shellfish.
- Assure the capacity for laboratory analysis capable of identifying levels of biotoxin and bacteriological parameters to assure safe shellfish.
- Adopt and implement development standards appropriate to critical shoreline conditions.
- Close shellfish areas failing to meet water quality standards.
- Provide surveillance of imported shellfish products to assure compliance with applicable standards.
- Increase use of the hazard analysis, critical control points (HACCP) systems in shellfish facilities to prevent shellfish borne disease.
- Routinely monitor commercial shellfish plants to assure compliance with sanitation standards.

Shellfish growing areas: Water quality standards

(Outcome standards are for the year 2000 unless otherwise noted.)

Variable	Baseline	Outcome Standards
Biotoxin Illnesses	From 1990-1993, 20 cases of biotoxin poisoning	Prevent biotoxin diseases yet allow harvest areas to remain open when biotoxins are not a threat.
Pollution Related Illnesses	From 1990-1993, two pollution related illness outbreaks resulting in approx. 60 cases. Causative agents not confirmed.	No more than one pollution related illness outbreak in any three year period.
Illnesses Related to Naturally Occurring Marine microbes	From 1990-1993 approximately 20 cases/year of Vibrio parahaemolyticus	Implement strategies to reduce cases of V. parahaemolyticus by 15% of baseline.
Water Quality in Shellfish Growing Areas	From 1980-1993 shellfish harvesting was restricted or prohibited in 20 areas due to water quality problems. Five of those areas had some of the restrictions lifted.	Establish community-based efforts to prevent shellfish growing area closures. Lift restrictions on one area per year.
Shellfish processing plant sanitation	5% of shellfish processing facilities have approved have approved HACCP plans (1994).	Increase percentage of shellfish processing plants with approved HACCP plans to 50%.
Classification of public shellfish beaches	50% of priority public shellfish beaches classified (1994).	90% of priority public shellfish beaches classified.

Recreational water

Natural bathing water have accounted for sporadic outbreaks infecting up to several hundred people in a single episode. Pseudomonas skin infections associated with use of spa facilities have continued to be an ongoing problem in both commercial and private facilities. Injuries and deaths are a major source of concern in relation to recreational waters. These are addressed in detail in the section of this report that deals specifically with Injury and Violence.

Factors leading to the need for recreational water protection include:

- Unsanitary conditions created by large numbers of bathers in natural bathing waters with poor dilution and mixing patterns.
- Contamination of natural waters from point and non-point sources.
- Inadequate maintenance and treatment of pools and spas.
- The number of drowning and near-drowning incidences and injuries occurring annually in Washington's recreational waters.

Intervention strategies for recreational water include:

- Develop regulations or standards for bathing beaches to address water quality and safety.
- Improve training opportunities for regulatory agencies and facility operators.
- Develop a monitoring and reporting network.
- Evaluate local health programs.
- Educate and inform the public regarding the occurrence and prevention of waterborne diseases, such as swimmer's itch.

Water quality standards: Recreational water

(Outcome standards are for the Year 2000 unless otherwise noted.)

Variable	Baseline	Outcome Standards
Pseudomonas	20 cases per year (1993)	No more than five cases per year.
Enteric (Gastrointestinal)	One outbreak - 100 cases (1993)	No more than one outbreak in any five year period.

Performance measures for the Department of Health: 1995-97 biennial budget

Goals:

1. Improve the general health status of the population.
2. Reduce infectious disease.
3. Reduce noninfectious disease.
4. Reduce violence and injury.
5. Improve family and individual health.
6. Reduce environmental threats to health.
7. Improve and assure the quality of health care delivery systems.

Objectives:

General health status:

1. Reduce the age-adjusted total death rate from all causes to 400/100,000.
2. Increase average life expectancy at birth to 80 years.
3. Reduce the percentage of the population ages 18 and over reporting only fair or poor health to 8%.
4. Increase the average umber of reported "good health days" to 27.

Infectious disease:

1. Confine AIDS incidence to a rate not exceeding 15.4/100,000.
2. Reduce the tuberculosis incidence rate to 2.0/100,000.

3. Increase the percentage of children aged 0-23 months who are appropriately immunized to 90%.
4. Increase the percentage of school-aged children who are appropriately immunized to 96%
5. Reduce the rate of primary and secondary syphilis incidence to 1.0/100,000.
6. Reduce the rate of gonorrhea incidence to 60/100,000.
7. Reduce the rate of chlamydia incidence to 170/100,000.

Non-infectious disease:

1. Reduce the age-adjusted coronary heart disease death rate to 74/100,000.
2. Reduce the age-adjusted stroke death rate to 19/100,000.
3. Reduce the age-adjusted overall cancer death rate to 120/100,000.
4. Slow the rise in lung cancer deaths to achieve an age-adjusted rate of no more than 40/100,000.
5. Reduce the percentage of persons age 18 and older who currently smoke cigarettes to 15%.
6. Reduce the age-adjusted female breast cancer death rate to 18.9/100,000.
7. Increase the percentage of women ages 50 and older who have received a mammogram in the last two years to 80%.
8. Reduce the age-adjusted cervical cancer death rate to 1.6/100,000 women.
9. Increase the percentage of women ages 18 and older who have had a Pap test in the last two years to 90%.
10. Increase the percentage of persons ages 18 and older who have ever had their cholesterol checked to 75%.
11. Increase the percentage of persons ages 18 and older who have had their blood pressure checked in the last 2 years to 99%.

Violence and injury:

1. Maintain the-adjusted homicide death rate at 5.4/100,000.
2. Reduce the rate of youth aged 10-17 arrested for violent crimes to 4.2/1,000.
3. Reduce suicide death rate for youth aged 15-19 to 11.2/100,000.
4. Reduce the age-adjusted motor vehicle death rate to 12.8/100,000.
5. Increase the percentage of drivers who use seat belts to 85%.
6. Reduce the age-adjusted fall-related death rate to 3.0/100,000.
7. Reduce the age-adjusted drowning death rate to 2.0/100,000.

Family and individual health:

1. Reduce infant mortality to 6.5/1,000 live births.
2. Increase the percentage of pregnant women who receive prenatal care in the first trimester to 90%.
3. Reduce the incidence of low birth weight to 4.2% of live births.
4. Reduce pregnancies among girls age 15-17 to 45/1000.
5. Reduce the percentage of women giving birth who smoke cigarettes during pregnancy to 10%.
6. Reduce the percentage of women giving birth who use alcohol during pregnancy to 6%.
7. Reduce regular use of cigarettes in grade 12 to 21.2%.
8. Reduce the percentage of people aged 18 and older who are overweight to 20%.

Environmental health:

1. Reduce the rate of foodborne illness cases to 10.2/100,000.
2. Investigate 100% of disease/illness clusters reported to be related to exposure to hazardous substances.
3. Increase the percentage of Group A public water systems which comply with operating permit requirements to 95%.
4. Increase the percentage of large on-site wastewater systems which comply with operating permit requirements to 95%.
5. Reduce the rate of noncompliance at x-ray facilities to 200/1,000 facilities inspected.
6. Reduce the number of recreational water-related pseudomonas skin infection cases to no more than five per year.

Health systems quality assurance

1. Conduct required inspections of 100% of licensed health care sites that require on-site inspections in the time frames prescribed by rule or law.
2. Monitor proficiency testing performance for 100% of medical test sites that must participate in a proficiency testing program.
3. Investigate 100% of valid complaints brought against health care facilities or professionals within the time frames prescribed by rule or law.
4. Reduce Emergency Medical Service response times for trauma calls by 5%.
5. Decrease the number of health care providers providing substandard health care by 10%.
6. Reduce the number of health care providers prohibited from the practice of their profession by 10%.

Appendix B

Guidelines for data development for key public health problems

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Preface

In February 1994, Bobbie Berkowitz, chair of the Steering Committee of the Public Health Improvement Plan (PHIP), convened a Data Advisory Panel (panel) whose short term task was to develop guidelines for the generation and presentation of data in the PHIP. A written summary of the guidelines was reviewed by panel members in May. The guidelines were revised and submitted to reviewers at the University of Washington and Centers for Disease Control and Prevention in July. The following report includes the guidelines for data generation and the rationale for these recommendations.

A summary of the guidelines, which does not include the rationale, is included as Attachment 1. Readers, who do not feel the necessity of understanding the complete rationale for the proposed guidelines, are strongly urged to read the introduction that follows, before turning to Attachment 1. The introduction provides the context for interpretation of data generated using the guidelines.

Introduction

"The art of epidemiologic reasoning is to draw sensible conclusions from imperfect data." (Anonymous) The recognition of the imprecision of epidemiologic measurement applies to data generation as well as data interpretation. This imprecision makes it impossible to prescribe approaches to data generation which are universally applicable. Therefore, the following recommendations are intended as guidelines for data related to Key Public Health Problems in the PHIP.

The primary purposes of the guidelines are to assure that data in the PHIP are 1) generated in a scientifically reasonable manner, 2) presented in a manner which is consistent with standard requirements for displaying scientific material, and 3) useful to Washington State Department of Health (DOH), Local Health Departments and others interested in using the PHIP. The guidelines are not intended to be used in a cookbook fashion. When using data for assessment and policy development, standardized approaches to data can not substitute for epidemiologic and programmatic experience.

The panel recommends the use of statistical procedures as an aid in the interpretation of data. The panel recognizes that the use of statistics with population data is controversial and that in many instances, there are violations of the underlying assumptions (e.g., independence) on which the statistical procedures are based. Therefore, in this context, statistical testing is not intended as formal hypothesis testing and does not substitute for thoughtful attention to the many factors which need to be considered when using data to make public health decisions.

Given this perspective on the use of statistical testing, the panel did not address the issue of multiple comparisons. However, those interpreting the data must be aware that with an alpha of 0.05 or a 95% confidence interval, five out of 100 times, one will see "statistically significant" differences by chance alone, i.e. when there is actually no difference between two data points. Additionally, when there are relatively few events, the statistical power to detect real differences is limited and the violation of assumptions becomes more critical.

Development of baselines, outcome standards and thresholds

The recommendations for the development of baselines, outcome standards and thresholds are applicable to the health and risk status indicators. However, the guidelines may also be used for other types of quantitative indicators. They are not applicable to "qualitative" indicators. The panel recommends that qualitative indicators be made quantitative whenever possible.

Baseline data

In Webster's New Riverside University Dictionary (New Riverside Publishing Co., 1988), baseline is defined as a "line serving as a base, as for measurement." A "base" is .."an observation .. from which a ... process is begun." While the term, baseline, has been adopted by researchers often to indicate the point where one is when a process begins, the original concept of a line focuses on the importance of looking at a number of points over time to determine where one is now.

General considerations

Use of Rates: For most indicators, the baseline should be expressed as a rate (i.e. number of events per population in a specified time period). Rates are not recommended when small numbers of events serve as sentinel indicators (red flag) of public health concern, e.g., cases of polio. The panel also recommends avoiding the calculation of rates when there are fewer than five events, whether or not the event is viewed as a sentinel indicator. Since estimates may vary due to using different denominators, to ensure consistency, it is recommended that rates be calculated with population denominators provided by the Washington State Center for Health Statistics.

Use of Point Estimates: The panel considered the relative merits of providing point estimates for the baseline statistic versus providing ranges by including confidence intervals (CIs) around the point estimate. The panel opted for the point estimate as a more straightforward manner of providing Washington State data to non-technical readers of the PHIP.

Age-adjustment: There are not hard and fast rules to determine when age-adjustment and use of stratum-specific (e.g., age-, race- and sex-specific) data are appropriate. However, the panel recommends:

- If there are comparable Healthy People 2000 (U.S. Public Health Service, DHHS Publication No. (PHS) 91-50212, 1991) baselines, rates should be generated in a similar manner relative to age-adjustment and group specificity.
- If adjustment is appropriate, data should be adjusted to the 1940 U.S. standard population, except for cancer data. Cancer incidence should be adjusted to the 1970 U.S. standard population. Cancer mortality should be adjusted to both the 1940 and 1970 standards. Although there is debate over whether these standards should continue to be used, these are the standards in Healthy People 2000 and in publications from the National Center for Health Statistics and the National Cancer Institute. For comparative purposes, it is important to be consistent with national standards.
- Standard methods for adjustment are presented in most introductory epidemiology texts. In most instances, direct age-adjustment will be used (i.e. age-specific rates in the population of interest will be applied to a standardized age distribution.) Methods of age-adjustment in Healthy People 2000 are presented in Appendix II of Health United States 1992 (DHHS Pub. No.(PHS)93-1232) and Health United States 1993 (DHHS Pub. No.(PHS)94-1232).
- For events which increase with age, age-adjustment to the relatively young 1940 and 1970 U.S. standard populations can obscure the magnitude of a problem. Therefore, the number of events should be reported in addition to the adjusted rates.

Calculation of baselines

Single year baselines

When possible, the single, most recent year of data should be used for the baseline statistic. It is generally possible to use a single year when historic data indicate an underlying trend without substantial annual fluctuation. The determination of whether there is substantial annual fluctuation is both a quantitative and qualitative process.

There are several quantitative approaches. The most standard quantitative approach is to conduct a statistical test for the difference between two rates (proportions). Formulas for these calculations can be found in standard biostatistics and epidemiology texts. If the test indicates a statistically significant difference (e.g., p<0.05) between the rates for two consecutive years, one would conclude that there is substantial year to year fluctuation. This approach is similar, although not identical, to setting CIs around point estimates for two adjacent years. If the CIs do not overlap, one would conclude that there is substantial fluctuation.

As indicated in the introduction, in the context of the PHIP, the panel views statistical tests as aids for interpreting data. Qualitative judgements are important for the final determination of whether a single year represents the true situation at baseline. These judgements must be based on a knowledge of what the statistic denotes and a knowledge of the program area to which the data pertain.

There are several factors which need to be remembered when interpreting the results of statistical tests.

- Because the result of a statistical test depends as much on the number of events as it does on the magnitude of the difference between two rates, there may be instances where the point estimates between adjacent years are not statistically significantly different, but a single year does not represent a stable baseline (i.e., when the number of events is small, there is low power to detect real differences). Therefore, one must be cautious in selecting a single year of data for the baseline when there are fewer than 100 events per year.
- When performing a statistical test many times, there is increasing likelihood of finding what appears to be a statistically significant difference, when in reality, there is no difference.
- The panel discourages the practice of using an alpha of less than or equal to 0.05 (i.e. p<=0.05) as a rigid cut point to determine statistical significance. If p<0.05, two points have a less than 5 in 100 probability of being that different by chance when they are really the same. A p=0.06 means that there is a 6 in 100 chance of the points being that different, when they are really the same. The panel believes that it is arbitrary to conclude that in the former case, chance is not operating and the points are different, but in the latter case, chance may be operating and so the points are the same.
- If the shape of the underlying distribution is not as assumed or if the rate for one year is not independent of the rate for an adjacent year, the statistical test can err in either direction (i.e., finding differences where none exist or failing to find differences where they do exist).

Qualitatively, because of annual fluctuation, the true situation at baseline falls within a range of values. If the point estimate for a given year is at the low or high end of the range, it may not be a good representation for the baseline. Additionally, knowledge of

changes in reporting methods, coding standards and other events needs to be brought to bear on the decision of whether the rate for a single year is an adequate baseline statistic.

Consider the following data for mortality from fires and burns.

Deaths from unintentional fire and burns

	Number	Rate/100,000	95% Poisson CIs
1989	55	1.18	0.89-1.53
1990	67	1.38	1.07-1.75
1991	44	0.88	0.64-1.18

Source: Department of Health, Annual Vital Statistics Reports for 1989-1991 ICD9 codes: E890-899, E929.4

All three years of data in this example show overlapping CIs and thus, it may be reasonable to conclude that the rate is stable enough to use the rate for 1991 as the baseline. The relatively small number of events, however, leads to low power to detect real differences. Qualitatively, unless something specifically influenced the rate for 1991, it seems that the rate may be speciously low and, therefore, not adequate as a baseline point estimate. In this example, additional years of data might help to resolve whether the rate for 1991 is a good indicator of where one is at baseline.

Judgement and experience must be brought to bear on the consideration of whether something has occurred which might influence a rate for a given year. For example, one large fire in which many people died could inflate the rate for a particular year. In this example, if there had been a statewide intervention to promote the use of smoke detectors toward the end of 1990, the 1991 rate may be an indication of the success of the program and a reliable indicator to use as a baseline statistic.

If a single year is not adequate for the baseline statistic, the panel recommends two methods of calculating a baseline. One can use moving (rolling) averages to see if stable data points can be generated or one can use a regression methodology. Because the averaging method is likely to be more understandable to non-technical readers of the PHIP, it is recommended that this method be tried first.

Moving-average baselines

Moving averages reduce variability between rates for adjacent time periods by incorporating a given point estimate in several adjacent periods. The panel recommends using three-year moving averages. Therefore, each annual data point contributes to three adjacent time periods. Two-year rolling averages may not be sufficient to smooth the data. If more years are used, it becomes more difficult to measure annual change. Even with three years, change for a subsequent year may be obscured since the new "data point" will be weighted toward the two previous years.

When three-year moving averages are used, adjacent data points contain two years of identical data. Given this extreme lack of independence, the statistical tests described for single years of data cannot be used to inform the decision of whether the most recent three year average is a relatively accurate representation of the situation at baseline. Those generating the data will need to make the decision, in a relatively subjective

manner, based primarily on the shape of the curve. If it is decided that there continues to be substantial fluctuation between adjacent data points, the panel recommends using the regression method described below.

Regression baselines

A regression line can be fitted to historic data and the regression point for the most recent year of historic data can be used as the baseline. The panel recommends fitting the historic data to several models in order to decide which model provides the best fit. This approach requires a sufficient number of annual data points and the panel does not recommend this approach if there are less than five years of data.

Calculation of outcome standards

The panel defined an outcome standard as an objective which one wishes to accomplish. In the PHIP, the outcome standards refer to goals or targets for the year 2000. Since an outcome standard is a goal, the panel recommends that unless a condition is biologically linked to a specific racial/ethnic group, there should not be separate outcome standards for different groups. This does not mean that one should not look at where different sub-groups are in relation to the goal and assess whether the sub-group has exceeded a threshold. (See section on thresholds.) It simply means that the goals for all groups should be the same even though it may not be possible for every group to meet the target in the same time frame. Groups who are already doing better than the target should at least try to maintain their current level.

The panel developed guidelines for calculating outcome standards when 1) baseline data and year 2000 targets are available at the national level and 2) there are no national goals.

When baseline data and year 2000 targets are available at the national level, the relationship of Washington baseline data to the national figures falls into one of three categories.

1. The Washington baseline represents a situation which is worse than the national baseline (*i.e.* it is higher than the national baseline for conditions or behaviors which one wants to decrease or it is lower than the national baseline for conditions or behaviors one wants to increase.) In this case, the average annual percent change from the national baseline to the national year 2000 target can be multiplied by the number of years from the Washington baseline to the year 2000. The resulting percentage can be applied to the Washington baseline to establish the minimum change from baseline to target (outcome). The maximum change from baseline to target is the national standard. The panel recommends that these points be viewed as endpoints of a range of possible targets from which one point is selected. (See Attachment 2, Example 1 and Attachment 5, Calculation of Outcome Standard)

   For example, for the national health objective "reduce suicides in youth aged 15-19," the Healthy People 2000 target is 8.2 per 100,000, from a baseline of 10.3 per 100,000 in 1987. This is a decrease of 20.4% [(10.3-8.2)/10.3]. The decrease occurs over 13 years, yielding an average annual decrease of 1.6% (20.4%/13 years). The Washington baseline rate for 1989 through 1991 is 14.0 per 100,000. With nine years remaining to 2000, a comparable decrease for the state is 14.4% (1.6% per year for nine years), yielding possible target of 12.0 per 100,000 [12.0 is 14.4% lower than the baseline rate, *i.e.*, 14.0 - (14.0*14.4%)]. This is the minimum change from baseline to target. The maximum change from baseline to target would be the U.S. target of 8.2 per 100,000. Thus, the endpoints for the range of possible targets are 8.2 to 12.0. The target of 11.2 per 100,000 chosen by the Technical Advisory Committee for the March PHIP Progress Report lies within this range and is, therefore, suitable.

2. The Washington baseline is better than the national baseline, but worse than the national year 2000 target. In these cases, it is recommended that the same method be applied as in situation 1, except that the derived point will now define the potential maximum change from baseline to target and the national year 2000 target will define the minimum change from baseline to target. Because it may not be biologically plausible or realistic for reasons other than biological plausibility to achieve the derived endpoint, it is characterized as a potential maximum change. If an outcome standard better than the national year 2000 target is selected, those who have chosen the standard must be able to document that their choice is realistic. One method of documentation would be to show that the rate has been achieved in other states, countries or sub-groups of the U.S. population. (See Attachment 2, Example 2)

   For example, for the national health objective "reduce deaths from work-related injuries," the Healthy People 2000 target is 4 per 100,000 from a baseline five-year average of 5.9 per 100,000 in 1983 through 1987. This is a decrease of 32.2% over 13 years, which becomes 2.5% per year. The Washington baseline in 1991 is 4.7 per 100,000. With nine years remaining to 2000, a comparable decrease for the state is 22.3%, yielding a possible target of 3.7 per 100,000. The minimum change from baseline to target would be the US target of 4.0 per 100,000. Thus the endpoints for the range of possible targets are 3.7 to 4.0.

3. The Washington baseline is better than the national baseline and better than the national year 2000 target. The approach recommended in situation 2 can be followed, except that the minimum change is to maintain the baseline rate. Documentation that the selection of a target is biologically plausible and/or realistic is necessary. (See Attachment 2, Example 3)

The methods described above result in specifying a faster rate of change than the nation as a whole when Washington is doing worse than the nation and a slower rate of change when Washington is doing better. The methods describe how to generate a range of possible target values. The selection of a single point within that range depends on scientific and policy considerations such as: 1) are the factors which are causing Washington's rate to be worse than the national rate amenable to change, 2) how much of a priority is there at the national, state, and/or local level for addressing this condition, 3) is the difference between Washington's baseline and the national baseline an artifact of differential reporting, etc?

One tool to help in the selection of a point within the range is to apply the method described below for when there are no national targets. Using this method, one would calculate where one would expect to be in 2000 if the rate of change continues as it has over the past 5 to 10 years. A second tool to help decide which point to choose relates changes in health status to changes in risk factors. If there is a clear relationship between a risk factor and health outcome and if one can predict how much change will occur in the risk factor by 2000, then, based on that change, the amount of disease related to the risk factor (attributable risk), and the lag time between changes in risk factors and outcomes, one can predict the expected change in health status.

When there are no national year 2000 goals, the committee recommends that the Washington year 2000 target be based on a projected rate of change from historical data. In most instances, this means fitting a regression line to the historical data and extrapolating to 2000. The point can then be adjusted (raised or lowered) depending on the preventability of the condition, the political will for improvement, etc.

When there are no baseline data, data cannot inform the process for selecting an outcome standard. In these instances, the panel recommends that data be collected so that a

baseline can be measured before targets are specified and before interventions are initiated. Generally, there is no harm in adopting a national target or a subjectively identified target even though the target may be unrealistic. However, beginning an intervention program before measuring a baseline, can make it impossible to assess whether the program is having the desired impact. Once a baseline is developed, one could use the methods described above to develop an outcome standard.

Thresholds

The fourth definition of threshold in Webster's II New Riverside University Dictionary (New Riverside Publishing Co., 1988) is "the intensity below which a ... stimulus ... can produce no response." Using this definition, a response is produced when a threshold is exceeded. The panel defined threshold standard as data which produce a response. The panel stresses that the initial response to exceeding a threshold is not intervention, but rather a closer look at the situation to determine what may be occurring. Additionally, a threshold is a way of measuring if one is progressing toward a goal at reasonable rate.

Given this latter way of looking at threshold standards, the first step toward measuring whether a threshold has been exceeded is to determine a reasonable rate of progression toward a goal. The most straightforward approach toward measuring expected progression is linear interpolation between the baseline data point and the outcome standard. Figure 2 in Attachment 5 illustrates where one would be expected to be each year to reach by 2000 the goal of 2918.6 hospitalizations for hip fractures per 100,000 women age 85 years and older.

The panel distinguishes between two types of thresholds. Thresholds may be trend based or group based. A trend based threshold compares data for a given year(s) to an expected or desired value for that year. The populations from which the two data points are derived are essentially the same. Group based thresholds compare data for similar time periods from a sub-group, such as a racial/ethnic group or a county, to a larger group.

Trend based thresholds

To ascertain whether a threshold has been exceeded for a given year, the panel recommends testing whether an actual data point differs from an expected data point. The expected data point is the point for that year on the interpolated line described above. The same statistical test described in the section on baselines can be used to determine whether the two points differ. If they do differ, one would conclude that a threshold had been exceeded and the situation needed to be studied more intensively from both data and programmatic perspectives to ascertain why the threshold was exceeded.

Non-overlapping 95% CIs around the actual and expected point estimates approximate the statistical test described above. While this approach is acceptable under any conditions, the panel recommends this approach, using Poisson CIs, when rates are less than 10 per 100 or when the number of events is less than 100, since there is difficulty in using a normal approximation to the binomial distribution under these conditions.

Group based thresholds

In some instances, one will want to know whether the rates for sub-groups exceed a threshold. Most often the sub-groups will be specific racial or ethnic groups or groups in relatively small geo-political areas, such as counties. This is conceptually the same as asking whether the rate for a particular group is significantly different from the rate of the population as a whole.

The same types of statistical tests that are used with trend based thresholds can be applied. However, with group based thresholds, the variance in the smaller group will be large compared to that of the total population. Therefore, as a short cut, it is possible to calculate a 95% CI only for the sub-group point estimate. If the rate from the larger group does not fall between the upper and lower 95% CI limits for the smaller group and the direction of the non-overlap indicates that the situation is worse in the smaller group, a threshold has been exceeded.

The panel cautions that one must be circumspect when comparing a sub-group to a population as a whole. Statistical inference is based on an assumption of independence of events. When a smaller group which is part of a larger group is compared to the larger group as a whole, the assumption of independence is violated. The larger the sub-population, the more the rate for the sub-population influences the overall rate and the less the independence. Those with data expertise must use their judgement to determine whether comparing a sub-group to a larger group is tenable.

As a general rule, if the sub-group comprises more than 20% of the larger group, the panel recommends not comparing the sub-group to the larger group. In these instances, one could calculate the rate for the larger group after subtracting the sub-group from both the denominator and numerator. The two groups would then be independent of one another and, therefore, they could be compared. Alternatively, a similar group from a different population could be sought for comparison purposes. For instance, it may be more informative to compare rates in King County to rates from other counties with relatively large urban centers rather than comparing King County to the rest of Washington.

If the sub-group is between 10% and 19% of the larger group, the data analyst could analyze the data both with the sub-group being part of the larger group and after subtracting the sub-group from the larger group. If there are differences in statistical inference using the two methods, the sub-group is too large to be included in the total group.

Additional considerations

As was discussed in the section on baselines, when there are a relatively small number of events, statistical procedures may not have the power to detect a real difference in rates. Conversely, statistics can show a difference between rates by chance, i.e. when there is no real difference. This latter situation is particularly likely when numerous statistical tests are performed. Therefore, the results of statistical testing and/or setting CIs must be interpreted with caution.

In most instances, the panel recommends that similar methods be used to calculate the baseline and threshold. Thus, if a three-year rolling average was used to calculate the baseline, a three-year average needs to be used to calculate the threshold. For group based thresholds, however, a single year could be compared to a three year average, if the single year was the mid-year of the average. For example, rates from a county based on data from 1990 to 1992 could reasonably be compared to 1991 Washington data. Judgement must be used to assure that the comparisons are tenable.

The methods described for ascertaining whether a threshold has been exceeded can only be used when a baseline and outcome standard have been developed. Additionally, these methods do not apply to items defined as sentinel events. With sentinel indicators, one event may be cause to investigate further.

Because this methodology relies on an evaluation of the variance of a given data point, it does not lend itself to setting one threshold standard against which the state can compare itself over time or against which communities or sub-populations can be evaluated. The panel discussed several procedures which could be used to specify threshold values for defined populations. The panel will work on refining these procedures for future versions of the PHIP.

Confidenceintervals

The panel recommends the use of 95% CIs to aid in the determination of when a single year of data can be used as a baseline and to ascertain whether a threshold has been exceeded. The following recommendations are included to aid with the development of 95% CIs in a standardized manner.

If there are 100 or fewer events (i.e., the numerator is <= 100) or if the rate is less than 10% (e.g., 10,000 per 100,000), it is recommended that 95% CIs be calculated based on the Poisson distribution. Since Poisson tables are copyrighted, the panel cannot distribute them. If they are not readily available, the panel recommends using the method of Ury and Wiggins For 30 or more events, the Ury-Wiggins formula equals the exact Poisson 95% CIs to three significant figures. For 6 to 29 events the accuracy is to two significant figures. Since the panel recommends not calculating rates when the number of events is less than 5, the use of Ury/Wiggins' formulas is satisfactory. The Ury/Wiggins formulas for 95% CIs are as follows:

n = the number of events

Lower limit: n - (1.96*$\sqrt{n}$) + 1.0
Upper limit: n + (1.96*$\sqrt{n}$) + 2.1 when 0 < n <= 50
Upper limit: n + (1.96*$\sqrt{n}$) + 2.0 when n > 50

These formulas specify the upper and lower CIs for the number of events. The number of events must be converted to a rate by dividing by the appropriate denominator and multiplying by the appropriate standard, e.g. 100,000 for rates expressed per 100,000. For example, if there were 20 events in a population of 40,000 the rate is 50.0 per 100,000 [(20/40,000)*100,000]. The lower and upper limits for 20 events are 12.23 [20 - (1.96*$\sqrt{20}$) + 1] and 30.87 [20 + (1.96*$\sqrt{20}$) + 2.1]. Conversion of these numbers to rates gives 30.6 [(12.23/40,000)*100,000] and 77.2 [(30.87/40,000)*100,000] as the lower and upper 95% CI limits around the rate of 50.0 per 100,000. Attachment 2 has been included to facilitate the process of finding the upper and lower number of events.

If the number of events (numerator) is greater than 100 and if the rate is greater than 10%, it is acceptable for 95% CIs to be calculated based on the normal approximation to the binomial distribution. The standard formula for 95% CIs based on the normal approximation to the binomial distribution is

$$p \pm 1.96*\sqrt{p(1-p)/n} \quad ,$$

where p = the proportion of the population or sub-group with the characteristic (i.e. the rate expressed as the number of events divided by the number of individuals in the relevant population) and n = the number of individuals in the population or sub-group (i.e. the denominator used in calculating the rate).

There may be times when the use of a single method of developing CIs is expeditious (e.g., one wants to build a formula for CIs into a spreadsheet). In these instances, the panel recommends using the Ury/Wiggins formula, since for large numbers, the Poisson distribution is similar to the binomial distribution. It is also possible to use a computer program to calculate exact CIs based on the binomial distribution, rather than using Poisson or normal approximations to the binomial distribution.

Guidelines for the presentation of data

To interpret Washington data, it is helpful to place that data into a larger perspective. Therefore, if possible, data tables (or text, if there are no tables) should include a baseline and target (outcome) for Washington and comparable baseline and target data for the United States. To avoid confusion, data tables need to clearly differentiate Washington and national year 2000 targets.

The panel recommends that the following information be presented in the data tables or in the text if there are no data tables. If the information does not fit conveniently into the table itself, it can be included as a footnote to the table. Generally, the comments in the tables or footnotes can be short, since more detailed information is presented as appendices to these guidelines.

1. If the baseline is not a single year or average, the method used to calculate the baseline should be noted. Generally, this means that it should be noted when the regression method has been used.

2. The table (or text) needs to note which years were used to generate the baseline and the year(s) to which the baseline data apply. When a single year or average is used, these two figures are the same.

3. Data sources and precise definitions for the number of events (i.e., the numerator if a rate is presented) need to be specified.

4. Data sources and precise definitions of the population to which the data refer (i.e., the denominator if a rate is presented) need to be specified.

5. To avoid ambiguity, the panel recommends that for children, age be presented in months, rather than years, e.g. does immunization status for those age two and under refer to those up to 24 months or those up to 36 months?

Attachment 4 contains a sample table. Attachment 5 contains an example for the calculation of baselines, outcomes and thresholds for hospitalization for hip fracture.

Attachment 1
Summary of the PHIP data guidelines

This is a summary version of the data guidelines prepared by the PHIP Data Advisory Panel. These are recommendations, not hard and fast rules. For more detail, see the full report of the panel.

Rates and numbers

For most quantitative health status and risk indicators, express the baseline, outcome standard, and threshold standard as rates (i.e. number of events per population).

Do not use rates when:

- There are fewer than five events, or;
- Small numbers of events serve as sentinel (red flag) indicators of public health concern (for example cases of polio).

Use population denominators provided by the Washington State Center for Health Statistics.

If there is a comparable age-adjusted national indicator, age-adjust Washington data in the same manner as the national indicator. If adjustment is appropriate, adjust to the 1940 U.S. standard population, except for cancer data. Adjust cancer incidence to the 1970 U.S. standard population. Adjust cancer mortality to both the 1940 and 1970 standards.

In addition to rates (either crude or adjusted), also present the number of events.

Baseline calculation

Use the single most recent year of data for the baseline statistic when:

- There are sufficient years of historic data (generally five or more) to permit the detection of a trend, and;
- The historic data indicate an underlying trend without substantial annual fluctuation. (The full report recommends both quantitative and qualitative ways of determining whether there is substantial annual fluctuation.)

If there is substantial annual fluctuation using single years, the first recommended alternate method is to construct three-year moving averages, or three-year simple averages when there are at least 15 years of historic data. If this method reduces the fluctuation between adjacent data points sufficiently, use the most recent three-year average as the baseline.

If substantial fluctuations between adjacent data points persist after application of the averaging method, the second recommended method is fitting a regression line to historic data and using the end point of that line as the baseline statistic.

Outcome standards

Outcome standards are generally targets for the year 2000.

When national baseline data and year 2000 targets are available, there are three possibilities:

1. Washington's baseline is worse than the national baseline. Determine the average annual percent change from the national baseline to the national year 2000 target, multiply it by the number of years from the Washington baseline to the year 2000, and apply this percentage to the Washington baseline. This becomes the minimum change from baseline to target. Set the state target somewhere between the minimum and a maximum of the national target. (See Attachment 3, Example 1 and Attachment 5, Calculation of Outcome Standard)

2. Washington's baseline is better than the national baseline, but worse than the national year 2000 target. Use the same method as above, but the derived point becomes the maximum change and the national target is the minimum change. (See Attachment 3, Example 2)

3. Washington's baseline is better than the both the national baseline and the national year 2000 target. Use the same method as above, except that the minimum change is to maintain the baseline rate. (See Attachment 3, Example 3)

If the selected target is more ambitious than the national year 2000 target, be prepared to document that the choice is realistic from a scientific, social, or political point of view.

When there are no national year 2000 goals, base the Washington year 2000 target on a projected rate of change from historical data. Fit a regression line to historic data, extrapolate to 2000, and adjust the point up or down based on such considerations as preventability of the condition and the political will for improvement. When there are no historic data from which to develop a baseline, data cannot inform the process for selecting outcome standards.

Do not establish separate outcome standards for different racial/ethnic groups unless a condition is biologically linked to a specific group.

Threshold standards

There are two types of thresholds: trend-based and group-based.

Trend-based thresholds (same population, different years).

> This type of threshold is a measure of progress toward a target, over time, for a given population. It compares data for a given year to an expected or desired value for that year. The most straightforward way to establish the expected or desired value is linear interpolation between the baseline data point and the outcome standard. This gives a series of expected data points for each intervening year. To determine if a threshold has been exceeded for a given year, test whether the actual data point differs from the expected data point.

Group-based thresholds (same year, different populations)

> This type of threshold measures how one group is doing compared to one or more other groups during the same time period. Usually it measures whether a rate for a sub-group is significantly different from the rate for the population as a whole. The sub-groups are often specific racial or ethnic groups. They may also be the entire populations of relatively small geo-political areas such as counties.

> In general, sub-groups comprising more than 20% of a larger group should not be compared to the larger group. Sub-groups comprising between 10% and 19% of the larger group may be analyzed both with the sub-group as part of the larger group and after subtracting the sub-group from the larger group. If there are differences in statistical inference using the two methods, the sub-group is too large to be included in the total group.

The full report has more detail on how to establish thresholds and determine whether they have been exceeded. There is also a detailed discussion of how to calculate and use confidence intervals.

Data presentation

Data tables (or text if there is no table) should include the following:

- Baseline and target (outcome standard) for Washington and comparable baseline and target for the United States.
- Year or years used to produce baseline data. If the regression method was used, indicate what years of historic data were used and for which year the baseline applies.
- Data sources and precise definitions for the number of events (numerator) and the population (denominator).
- Notes regarding such factors as whether rates are for incidence or prevalence and whether death rates are age-adjusted.

Present age for very young children in months to avoid confusion about whether a term such as "age two and under" means those up to 24 months or those up to 36 months.

See Attachment 4 for sample table.

Attachment 2
Poisson 95% confidence intervals

n	LL	UL	n	LL	UL	n	LL	UL
1	0.04	5.06	34	23.57	47.53	67	51.96	85.04
2	0.23	6.87	35	24.40	48.70	68	52.84	86.16
3	0.61	8.49	36	25.24	49.86	69	53.72	87.28
4	1.08	10.02	37	26.08	51.02	70	54.60	88.40
5	1.62	11.48	38	26.92	52.18	71	55.48	89.52
6	2.20	12.90	39	27.76	53.34	72	56.37	90.63
7	2.81	14.29	40	28.60	54.50	73	57.25	91.75
8	3.46	15.64	41	29.45	55.65	74	58.14	92.86
9	4.12	16.98	42	30.30	56.80	75	59.03	93.97
10	4.80	18.30	43	31.15	57.95	76	59.91	95.09
11	5.50	19.60	44	32.00	59.10	77	60.80	96.20
12	6.21	20.89	45	32.85	60.25	78	61.69	97.31
13	6.93	22.17	46	33.71	61.39	79	62.58	98.42
14	7.67	23.43	47	34.56	62.54	80	63.47	99.53
15	8.41	24.69	48	35.42	63.68	81	64.36	100.64
16	9.16	25.94	49	36.28	64.82	82	65.25	101.75
17	9.92	27.18	50	37.14	65.96	83	66.14	102.86
18	10.68	28.42	51	38.00	67.00	84	67.04	103.96
19	11.46	29.64	52	38.87	68.13	85	67.93	105.07
20	12.23	30.87	53	39.73	69.27	86	68.82	106.18
21	13.02	32.08	54	40.60	70.40	87	69.72	107.28
22	13.81	33.29	55	41.46	71.54	88	70.61	108.39
23	14.60	34.50	56	42.33	72.67	89	71.51	109.49
24	15.40	35.70	57	43.20	73.80	90	72.41	110.59
25	16.20	36.90	58	44.07	74.93	91	73.30	111.70
26	17.01	38.09	59	44.94	76.06	92	74.20	112.80
27	17.82	39.28	60	45.82	77.18	93	75.10	113.90
28	18.63	40.47	61	46.69	78.31	94	76.00	115.00
29	19.45	41.65	62	47.57	79.43	95	76.90	116.10
30	20.26	42.84	63	48.44	80.56	96	77.80	117.20
31	21.09	44.01	64	49.32	81.68	97	78.70	118.30
32	21.91	45.19	65	50.20	82.80	98	79.60	119.40
33	22.74	46.36	66	51.08	83.92	99	80.50	120.50
						100	81.40	121.60

To calculate a rate: use the number of events (n) as the numerator, the population of the area as the denominator. Rates are usually expressed in units of "per 100,000," so multiply the result by 100,000 to obtain the rate.

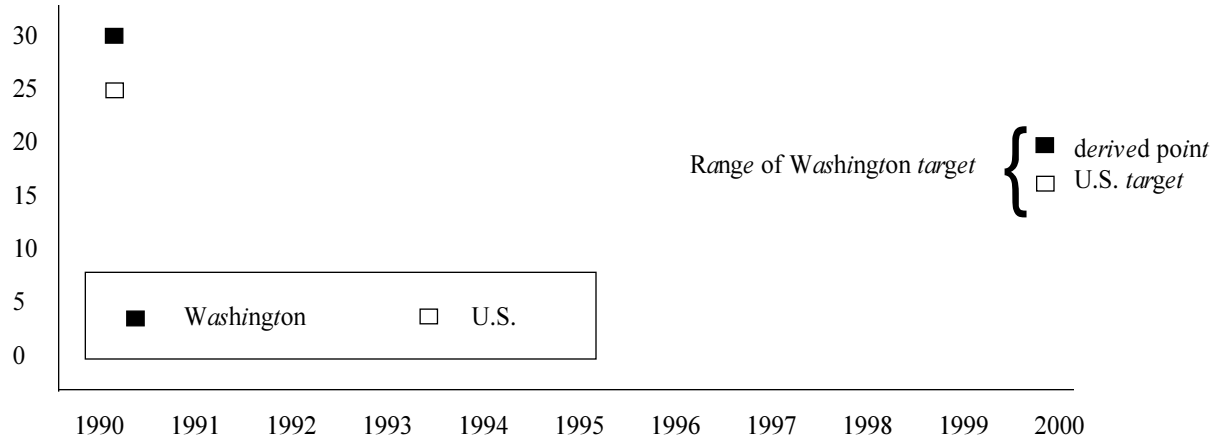
To calculate 95% Confidence Interval: repeat the rate calculation using the lower limit (LL) and the upper limit (UL).

C.I. Method: Ury HK, Wiggins AD. Am J Epidemiol 1985; 122(1):197-8

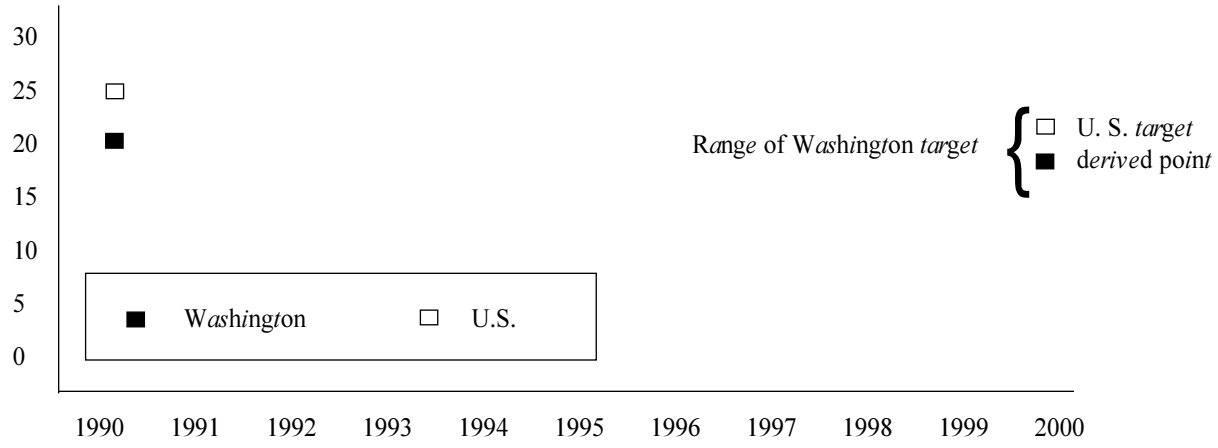
Attachment 3

Ranges for outcome standards

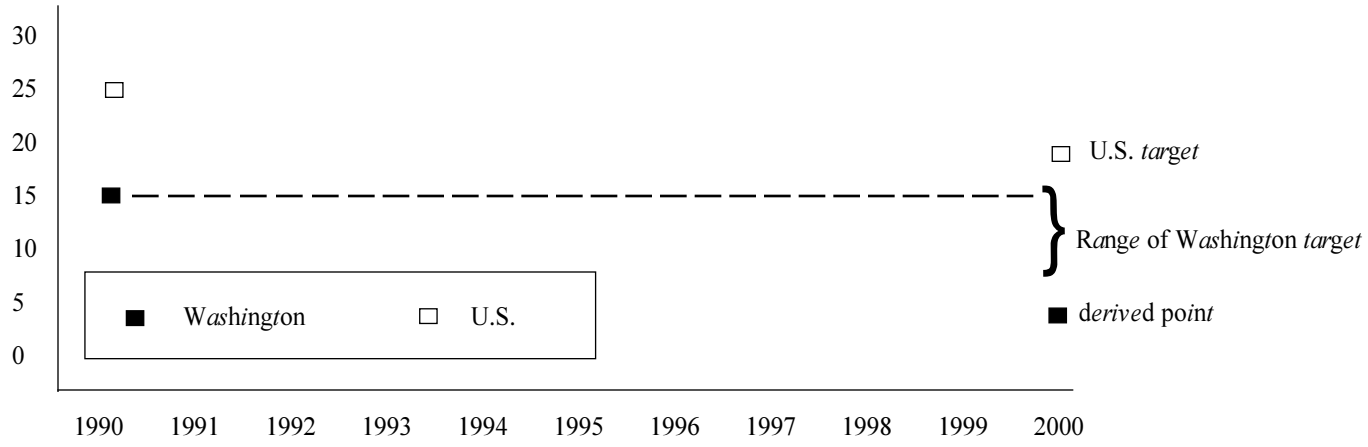
Example 1



Example 2



Example 3



Attachment 4
Sample table

Standards for Falls and Fall-Related Injuries

	Washington State				United States		
	Baseline			Year 2000	Baseline		Year 2000
	Year(s)	Count	Rate	Target Rate	Year(s)	Rate	Target Rate
Fall Deaths							
Total Population	1992	302	3.3	3.0	1987	2.7	2.3
Age 65-84	1990-92	296	18.7	16.5	1987	18.0	14.4
Age 85+	1990-92	304	174.6	153.6	1987	131.2	105.0
Hospitalization for Hip Fracture							
Age 65+	1990-92	12,297	700.6	630.6	1988	714.0	607.0
Women Age 85+*	1990-92	3812	3074.7	2224.9	1988	2721.0	2177.0

Data Source(s):

Deaths - Vital Statistics

Hospitalizations - CHARS

Population statistics - Dept. of Health, Center for Health Statistics, 7/5/94

Case Definition(s):

Falls and fall-related injuries include all ddeaths coded to E880-E888.

Hip fracture includes all resident hospitalizations with a principal diagnosis of N820.

Additional Notes:

Rates are per 100,000 resident population.

Death rates for the total population are age-adjusted.

* U.S. baseline and target are for white women 85 and older.

Attachment 5
Annotated example using hospitalization for hip fracture

The Violence and Injury sub-section of the Key Priority Public Health Problems Section of the Public Health Improvement Plan includes standards for falls and fall-related injuries. One of the measures in this sub-section is hospitalizations for hip fracture. Data for hospitalizations for hip fracture are available through the Comprehensive Hospital Abstract Reporting System (CHARS). The Washington State Injury Prevention Program (WSIPP) uses an enhanced CHARS data set which begins with 1989 data. At the time data were requested for the PHIP, WSIPP had CHARS data for 1989 through 1992.

Since Healthy People 2000 (U.S. Public Health Service, DHHS Publication No. (PHS) 91-50212, 1991) includes standards for hospitalization for hip fracture, data for this indicator in the PHIP are developed so that they are comparable to the data in Healthy People 2000. Specifically,

1. a case is defined as a Washington resident with a hospital discharge International Classification of Diseases, 9th Revision, Clinical Modification (ICD9-CM) code of 820 as the primary diagnosis;
2. hospital discharges, not people, are counted (i.e., a person hospitalized twice for the same event is counted twice); and
3. the same age and sex groupings are used as in Healthy People 2000.

For women aged 85 years and older, Healthy People 2000 specifies white women only. Because CHARS does not include race, the Washington data for this age group are not strictly comparable to the data in Healthy People 2000. In Washington, less than 3.0% of women ages 85 years and older are non-white. While this is a relatively small percentage, this difference in data development must be borne in mind when comparing Washington data for this indicator to the national data.

Calculation of baseline

Tables 1 provides the number of events, the population, rates and 95% Poisson confidence intervals (CIs) on which the analysis is based. For men and women ages 65 years and older, the 1989 rate of hospital discharge is 680 per 100,000 (3783/556077*100000). Because the rates in this example are less than 10%, 95% Poisson CIs are calculated. The upper and lower 95% Poisson CI are calculated from Ury and Wiggins (AJE 122:197-198,1995) formulas for the lower and upper limits, n-(1.96*$\bar{\text{s}}$n)+1 and n+(1.96*$\bar{\text{s}}$n)+2, where n is the number of events. Thus, for the lower limit, n-(1.96*$\bar{\text{s}}$n)+1 = 3783-(1.96*61.5)+1 = 3663 events. The number of events converts to a rate of 659 per 100,000 (3663/556077*100000).

Table 1: Hospital discharges for hip fracture (ICD9-CM 820)

	Men and Women Ages 65+				Women age 85+			
Year	Number	Population	Rate	95% CIs	Number	Population	Rate	95% CIs
1989	3783	556077	680	659-702	1153	38070	3029	2856-3209
1990	3855	571404	675	654-696	1190	39560	3008	2840-3184
1991	4125	585717	704	683-726	1297	41316	3139	2971-3315
1992	4317	598102	722	700-744	1325	43102	3074	2911-3244
1990-92	12297	1755223	701		3812	123978	3075	

Figures 1 and 2 provide the rates and 95% CIs graphically. Both figures show wide overlapping CIs for adjacent years, indicating that rates may be stable enough to use the most recent year as the baseline. However, with only four years of data, it is difficult to determine whether the trend of increasing hospitalizations shown in Figure 1 is real and the 1992 rate is a good representation of where we are at baseline. Given this difficulty, the staff of WSIPP decided to use a three year average for the baseline rate for hip fracture hospitalization for people ages 65 years and older.

Figure 1
Hospitalizations for Hip Fractures
Men and Women, Ages 65 Years and Older

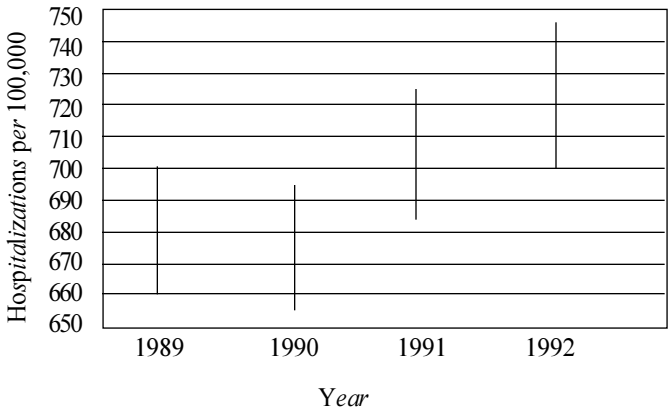
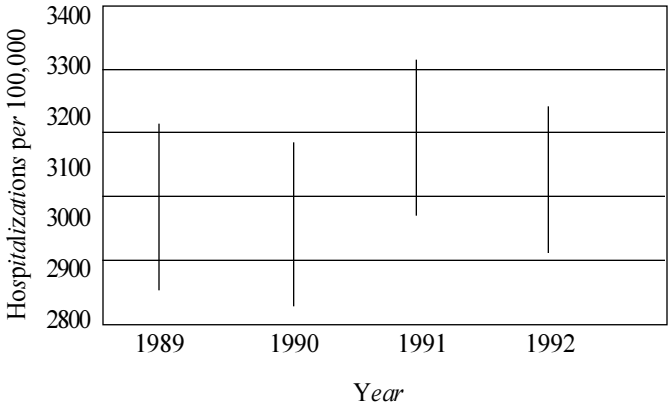


Figure 2
Hospitalizations for Hip Fractures
Women, Ages 65 Years and Older



For hip fracture hospitalization in women ages 85 years and older, the 1992 rate is very similar to the three-year average rate from 1990 to 1992, indicating that 1992 may be a reasonably accurate representation of where we are at baseline. However, for consistency with the baseline for ages 65 years and older, WSIPP staff decided to use a three-year average for this baseline also.

The three-year average is derived by adding the number of hospital discharges for 1990, 1991 and 1992 and dividing by the number of person-years for the same period. The number of person-years is calculated by adding the population for 1990, 1991 and 1992.

Calculation of outcome standard

Since there are national year 2000 targets for these indicators, WSIPP assessed the expected change in the indicators from baseline to target at the national level. Table 2 provides the data necessary for these analyses.

Table 2: Data for calculation of Washington targets

	Healthy People 2000				Washington	
Group	Baseline		Target		Baseline	
	Year	Rate	Year	Rate	Year	Rate
Ages 65+	1988	714	2000	607	1990-1992	701
White Women, Ages 85+	1988	2721	2000	2177	1990-1992	3075

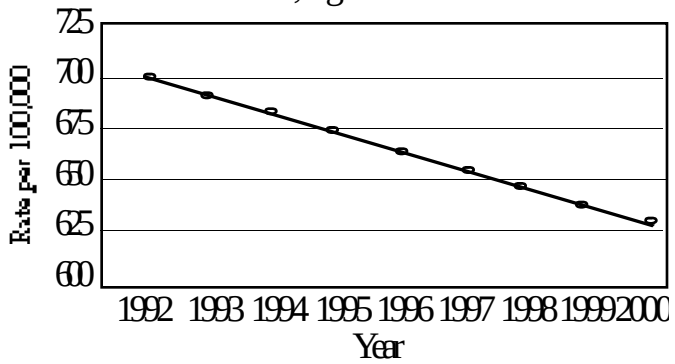
For ages 65 years and older, the percent change from the national baseline to target is approximately 15% [(714-607)/607*100]. Since the baseline was calculated in 1988 and the goal is for 2000, there are 12 years in which to achieve the 15% decrease, becoming an average annual decrease of 1.25% (15%/12). Washington's baseline covers a three year period from 1990 to 1992, leaving eight years until 2000. A decrease of 1.25% per year for eight years is a total decrease of approximately 10% (1.25%*8). This decrease is applied to the baseline (700.6 per 100,000) to arrive at a potential target of 631 per 100,000 [701-(10%*701)]. In this example, the calculated target represents the minimum change from baseline to target. The maximum change is to use the national target. Given that historical data indicates that rates may be increasing and the expectation that the level of funding for health promotion programs for the elderly will remain stable at best, WSIPP staff selected the calculated value (i.e., the minimum change) for the year 2000 target.

For women ages 85 years and older, the percent change from baseline to target is approximately 20% [(2721-2177)/2721*100] over a 12 year period. This is an average annual decrease of 1.67% (20%/12). A decrease of 1.67% per year for eight years is a total decrease of 13.3% (1.67%*8) which becomes a potential target of 2665 per 100,000 [3075-(13.3%*3075)]. Again, this figure represents the minimum change from baseline to target, with the national baseline representing the maximum change. In deciding which point within this range to use as the year 2000 target, WSIPP staff considered that 1) at current levels of funding and intervention, the rate of hospital discharge in this group seems to be stable; 2) the levels of funding and intervention are likely to remain stable, at best; and 3) since the national data refer to white women and the Washington data include all women, the national target may be artifactually low for Washington. The WSIPP staff selected the minimum change as the target value.

Threshold calculation

Figure 3 illustrates the anticipated progress toward the year 2000 target for hospital discharges for hip fracture in men and women ages 65 years and older. If we are progressing toward our goal as expected, by 1993, we expected the rate of hospital discharges for hip fracture to be 692 per 100,000. Since the data for 1993 are not available, let us assume that in 1993 there are 4500 hospital discharges for hip fracture among 600,000 people ages 65 years and older, yielding a rate of 750 per 100,000. Have we exceeded a threshold?

Figure 3
Targets for Hospitalization for Hip Fracture, Ages 65 Years and Older



Since the baseline was based on only four years of data, the three-year average can be perceived as a simple or moving average. However, since the data guidelines specify creating simple averages only when there are approximately 15 years of historical, it may be best to conceive of this as a moving average. If this is the case, the rate for 1993 should be created as the next point in that moving average. Thus, the number of hospital discharges for 1991 to 1993 are divided by the number of person-years for the same time period and multiplied by 100,000, yielding a rate of 726 per 100,000 (12942/1783819*100000). The 95% lower Poisson CI is 713 per 100,000 [((12942-(1.96*$\sqrt{12942}$)+1)/1783819*100000], which is higher than the interim target of 692 per 100,000. This indicates that we may not be progressing toward the target as expected. The next step is to determine why we do not seem to be progressing as planned and based on that determination decide whether increased efforts are necessary and possible.

Appendix C
Centennial Accord

1. Preamble and guiding principles

This Accord dated August 4, 1989, is executed between the federally recognized Indian tribes of Washington signatory to this Accord and the State of Washington, through its governor, in order to better achieve mutual goals through an improved relationship between their sovereign governments. This Accord provides a framework for that government-to-government relationship and implementation procedures to assure execution of that relationship.

Each Party to this Accord respects the sovereignty of the other. The respective sovereignty of the state and each federally recognized tribe provide paramount authority for that party to exist and to govern. The parties share in their relationship particular respect for the values and culture represented by the tribal governments. Further, the parties share a desire for a complete accord between the State of Washington and the federally recognized tribes in Washington reflecting a full government-to-government relationship and will work with all elements of state and tribal governments to achieve such an accord.

II. Parties

There are twenty-six federally recognized Indian tribes in the State of Washington. Each sovereign tribe has an independent relationship with each other and the state. This Accord, provides the framework for that relationship between the State of Washington, through its governor, and the signatory tribes.

The parties recognize that the State of Washington is governed in part by independent state officials. Therefore, although, this Accord has been initiated by the signatory tribes and the governor, it welcomes the participation of, inclusion in and execution by chief representatives of all elements of state government so that the government-to-government relationship described herein is completely and broadly implemented between the state and the tribes.

III. Purposes and objectives

This Accord illustrates the commitment by the parties to implementation of the government-to-government relationship, a relationship reaffirmed as state policy by gubernatorial proclamation January 3, 1989. This relationship respects the sovereign status of the parties, enhances and improves communications between them, and facilitates the resolution of issues.

This Accord is intended to build confidence among the parties in the government-to-government relationship by outlining the process for implementing the policy. Not only is this process intended to implement the relationship, but also it is intended to institutionalize it within the organizations represented by the parties. The parties will continue to strive for complete institutionalization of the government-to-government relationship by seeking an accord among all the tribes and all elements of state government.

This Accord also commits the parties to the initial tasks that will translate the government-to-government relationship into more efficient, improved and beneficial services to Indian and non-Indian people. This Accord encourages and provides the foundation and framework for specific agreements among the parties outlining specific tasks to address or resolve specific issues.

The parties recognize that implementation of the Accord will require a comprehensive educational effort to promote understanding of the government-to-government relationship within their own governmental organizations and with the public.

IV. Implementation process and responsibilities

While this Accord addresses the relationship between the parties, its ultimate purpose is to improve the services delivered to people by the parties. Immediately and periodically, the parties shall establish goals for improved services and identify the obstacles to the achievements of those goals. At an annual meeting, the parties will develop joint strategies and specific agreements to outline tasks, overcome obstacles and achieve specific goals.

The parties recognize that a key principle of their relationship is a requirement that individuals working to resolve issues of mutual concern are accountable to act in a manner consistent with this Accord.

The State of Washington is organized in a variety of large but separate departments under its governor, other independently elected officials and a variety of boards and commissions. Each tribe, on the other hand is a unique government organization with different management and decision-making structures.

The chief of staff of the governor of the State of Washington is accountable to the governor for implementation of this Accord. State agency directors are accountable to the governor through the chief of staff for the related activities of their agencies. Each director will initiate a procedure within his/her agency by which the government-to-government policy will be implemented. Among other things, these procedures will require persons responsible for dealing with issues of mutual concern to respect the government-to-government relationship within which the issue must be addressed. Each agency will establish a documented plan of accountability and may establish more detailed implementation procedures in subsequent agreements between tribes and the particular agency.

The parties recognize that their relationship will successfully address issues of mutual concern when communication is clear, direct and between persons responsible for addressing the concern. The parties recognize that in state government, accountability is best achieved when this responsibility rests solely within each state agency. Therefore, it is the objective of the state that each particular agency be directly accountable for implementation of the government-to-government relationship in

dealing with issues of concern to the parties. Each agency will facilitate this objective by identifying individuals directly responsible for issues of mutual concern.

Each tribe also recognizes that a system of accountability within its organization is critical to successful implementation of the relationship. Therefore, tribal officials will direct their staff to communicate within the spirit of this Accord with the particular agency which, under the organization of state government, has the authority and responsibility to deal with the particular issue of concern to the tribe.

In order to accomplish these objectives, each tribe must ensure that its current tribal organization, decision-making process and relevant tribal personnel is known to each state agency with which the tribe is addressing an issue of mutual concern. Further, each tribe may establish a more detailed organizational structure, decision-making process, system of accountability, and other procedures for implementing the government-to-government relationship in subsequent agreements with various state agencies. Finally, each tribe will establish a documented system of accountability.

As a component of the system of accountability within state and tribal governments, the parties will review and evaluate at the annual meeting the implementation of the government-to-government relationship. A management report will be issued summarizing this evaluation and will include joint strategies and specific agreements to outline tasks, overcome obstacles, and achieve specific goals.

The chief of staff also will use his/her organizational discretion to help implement the government-to-government relationship. The Office of Indian Affairs will assist the chief of staff in implementing the government-to-government relationship by providing state agency directors information with which to educate employees and constituent groups as defined in the accountability plan about the requirement of the government-to-government relationship. The Office of Indian Affairs shall also perform other duties as defied by the chief of staff.

V. Sovereignty and disclaimers

Each of the parties respects the sovereignty of each other party. In executing this Accord, no party waives any rights, including treaty rights, immunities, including sovereign immunities, or jurisdiction. Neither does this Accord diminish any rights or protections afforded other Indian persons or entities under state or federal law. Through this Accord parties strengthen their collective ability to successfully resolve issues of mutual concern.

While the relationship described by this Accord provides increase ability to solve problems, it likely will not result in a resolution of all issues. Therefore, inherent in their relationship is the right of each of the parties to elevate an issue of importance to any decision-making authority of another party, including where appropriate, that party's executive office.

Signatory parties have executed this Accord on the date of August 4, 1989, and agreed to be duly bound by it commitments.

Appendix D

Urgent Needs funds

Public health activities supported in the first year

In communities across Washington, 180 special public health projects are underway because of funds provided in the 1993 Legislative Session. Termed "Urgent Needs" funds, this $10 million appropriation represented a markedly different approach to providing state funds for public health. Instead of being tied to specific categories of services or public health problems, these funds were distributed to local health departments and districts (LHDs) on a per capita basis to use in whatever manner local health officials believed would best address unmet public health needs of their community.

The name "Urgent Needs" comes from a 1993 opinion survey in which local health officials were asked to name the most pressing local public health needs and estimate the cost of meeting them. Survey results suggested it would take $112 million per year to address the high priority problems identified.

The following pages provide specific examples of programs funded by Urgent Needs funds and list the type of activities selected by LHDs.

Use of urgent needs funds by category*
July 1, 1993 - June 30, 1994

	Budget Amount	% of Total
Infectious Disease	$1,059,890	23%
Environmental Health	$1,029,761	22%
Family & Individual Health	$885,072	19%
Violence & Injury	$733,611	16%
Public Health System Capacity	$648,243	14%
Non-Infectious Disease	$253,032	6%
Total - Year One	$4,609,609	100%

* Amounts shown are budgeted for the first year of the 1993-1995 biennium, July 1, 1993 - June 30, 1994. The total shown is less than the $5 million available for the year because some projects will incur greater costs in the second year.

Use of urgent needs funding
July 1, 1993 - June 30, 1994

	LHDs	Budget Amount
Infectious Disease		$1,059,890
Sexually Transmitted Disease	8	455,971
Tuberculosis	13	396,174
Immunization	10	207,745
Environmental Health		$1,058,141
Groundwater	7	361,578
Food Safety	15	334,828
Drinking Water	14	333,355
Family & Individual Health		$885,072
Access to Health Services	13	408,445
Oral Health	8	142,998
Other	2	120,009
Reproductive Health	4	119,126
Substance Abuse	2	94,494
Violence & Injury		$733,611
Violence Prevention	11	456,147
Injury Prevention	10	277,464
Public Health System Capacity		$648,243
Community Assessment	12	477,164
Administration	4	161,079
Laboratory	1	10,000
Non-infectious Disease		$253,032
Tobacco Use Prevention	6	248,032
Heart Disease	1	5,000
First Year Total		$4,609,609

Infectious disease prevention

Twenty-two LHDs initiated or expanded infectious disease prevention efforts with Urgent Needs funds, accounting for 23% of all budgeted funds. The majority of efforts were in tuberculosis, immunizations, and sexually transmitted disease (STD).

Sexually transmitted disease

Eight LHDs expanded programs in control and prevention of sexually transmitted disease, including HIV/AIDS.

Bremerton-Kitsap: A community education program was initiated after substantial planning efforts to bring together various community groups; special emphasis was placed on working with school administrators and board members to develop a long term commitment to target transmission of STDs among school-aged youth. Parents were provided with information packets that help make discussion of STDs easier to approach, peer educators were recruited and trained, and a community coalition began.

Seattle-King: A multi-faceted effort was undertaken including increased laboratory capability, plus outreach and education for local providers. In one portion of the program alone, administrators observed that the addition of a single full time employee will allow for 1012 patient visits, 116 HIV counseling and testing sessions, and 38 Hepatitis b vaccinations.

Activities in other LHDs included:

- expanded clinical time for diagnosis and treatment
- outreach and education for local providers
- outreach to high-risk client groups
- partner notification
- integration of HIV counseling and testing in other STD clinics
- education on using condoms
- a survey about drug paraphernalia use and risk behavior
- comprehensive community education programs

Tuberculosis

Thirteen counties expanded efforts at tuberculosis (TB) control. Most participating counties reported newly identified cases of TB, with clients in treatment as a result of these efforts.

Adams: Improved tracking program lead to faster notification of 22 patients; they started treatment sooner and the LHD was able to monitor treatment completion more effectively.

Snohomish: Directly Observed Therapy (DOT) was administered through more than 900 home visits plus use of pharmacies or other health care providers for DOT (150 visits). Transportation was provided for clients in need and medication was delivered to alternate sites for DOT. Clinic days for a TB/refugee clinic were expanded four additional days per week. An interesting note: The number of active TB cases being followed by the LHD was reduced from 21 during January-June in 1993 to seven during the same time period in 1994.

Activities in other LHDs included:

- initiating screening of jail inmates
- screening and outreach to high risk groups
- education to local providers about the re-emergence of tuberculosis and how to screen and treat it
- improved tracking of clients on treatment
- increased capability to provide Directly Observed Therapy
- training LHD staff and other health providers in DOT
- distribution of educational materials adapted for the public, for health care providers and for high-risk clients
- translation of educational materials into languages such as Spanish, Russian, Vietnamese and others
- creation of a comprehensive county-wide TB strategy
- training for law enforcement and fire safety personnel

Immunization

Ten counties participated in expanded immunization efforts.

Benton-Franklin: This program began as an outreach effort to daycare sites to reach the target population of young children who should be fully immunized by age two. Of more than 1800 immunization records reviewed for children aged 0-5, only 61% were fully immunized at age two. Staff added vision, hearing, dental and TB screening. Results: Many more children are immunized, six kids now wear glasses, 12 were treated for hearing problems, six people began TB medication and 163 were referred for dental treatment. There is strong support to continue this effort from providers and parents.

Grant: Immunization records for more than 2000 children were entered into the data/recall system, including records from private providers. With this system in place, LHD administrators note: "A greater number than the quarterly birth cohort were adequately immunized... if this trend continues, we will meet and surpass the year 2000 Objectives, preventing illness, disability, and possible death from vaccine preventable illness."

Activities in other LHDs included:

- implementing computer-based tracking and re-call programs
- adding private providers to the tracking system in some counties
- increased clinical staff time to make immunizations more available
- holding special clinics around the community to provide easy access to immunizations
- outreach to geographically isolated areas
- advertising the immunization schedule (with T-Shirts as an incentive to complete on time)

Environmental health

Twenty-three LHDs expanded environmental health activities, most by increasing capacity to provide education, services and monitoring in the areas of drinking water and food safety, representing 22% of the year one budget.

Food safety

Fifteen LHDs have initiated programs to provide increased protection from foodborne illness, with a number of them commenting that Urgent Needs funds allowed them to double the capacity of their programs.

Northeast Tri-County: Inspection of food establishments was doubled with the use of Urgent Needs funds. Special emphasis was given to inspection of temporary food establishments, from 30% last year to 65% this year. This action requires special staff time and effort because the events are of short duration, but they also provide for excellent prevention opportunities and quick resolution of problems.

Southwest Washington: Multiple strategies were employed in this effort, including developing a system for targeting "low-score" restaurants for both training and inspections, development of food service worker educational materials in Spanish and Chinese, development and promotion of a special program for food service managers, and participation in the food service manager certification program.

Activities in other LHDs included:

- greatly increased numbers of restaurant inspections
- increased training for food service workers
- offering classes in remote locations
- faster response to complaints and consumer inquiries

- education dissemination to recreational areas where food storage mistakes commonly lead to illness
- formation of community food establishment advisory committees
- special training sessions on E. coli:0157:H7
- distribution of refrigerator magnets with proper food temperatures listed for hot and cold foods
- targeted inspection programs to restaurants evaluated to be at greatest risk for food handling problems
- translation of food handling materials into Chinese, Vietnamese and Spanish
- special training courses offered for managers so that food handling information can be continuously reinforced for workers
- upgraded teaching materials and newsletters.

Safe drinking water

Seventeen health departments pursued programs to assure safe drinking water. Fourteen LHDs expanded efforts related to water systems; seven LHDs developed programs for protection of ground and surface water.

Thurston: Developed and implemented a database to identify systems not in compliance with water sample reporting. Contacted 412 systems, surveyed 114 systems and provided technical assistance to 162 systems.

Lewis: Nitrate levels are a general indicator of overall water quality and may indicate presence of other contaminants; nitrate elevation can present a significant risk to infants when the water is used for mixing infant formula. Combining grant funds and Urgent Needs funds, nitrate levels in groundwater were mapped using samples and information from various databases. The map is available for regular consultation by water program staff so that areas of concern are quickly identified. Further sampling and mapping are planned.

Activities in other LHDs included:

- increased water system operator training
- increased surveys of water systems (generally focusing on follow up for non-compliant systems)
- consultation to developers and owners on filtration, disinfection and quantity
- monitoring of areas around wells for nitrate levels
- well-decommissioning plans
- development and implementation of data bases for water systems — including linked data bases where needed to determine compliance and guide follow-up efforts
- intervention to stop failing septic systems
- convening a groundwater advisory committee
- analysis of data needs regarding storage of hazardous materials in aquifer-sensitive areas
- surveys of lake water quality with education provided to homeowners regarding septic systems and potential for pollution

Violence and injury

Eighteen LHDs initiated efforts in prevention of violence and unintentional injuries, with budgeted expenditures representing 16% of the funds in year one.

Violence prevention

Eleven LHDs initiated activities designed to reduce or prevent violence.

Southwest Washington: A task force was initiated to develop community-wide strategies for curtailing youth violence. Community leaders and media were involved. Youth members and staff attended a variety of special training sessions both in and away from the county to bring home information about emerging strategies and successful interventions.

Yakima: The number of high-risk families receiving public health nursing interventions was increased by 50%. Special emphasis was placed on developing bilingual and bicultural intervention capacity and weekly parenting classes were provided.

Five LHDs provided parenting classes as a preventive strategy aimed at abuse and neglect. These were generally coupled with other activities including:

- increased home visits to families at-risk
- a focus on domestic violence and creation of community campaigns to increase awareness of the problem and how to seek help
- a program to identify at-risk youth involved in street-fighting (through emergency rooms and youth service centers) so that those youth can be referred for additional assistance — i.e. substance abuse, case management support
- development of intervention capacity for non-English speaking families

Injury prevention

Ten LHDs created or expanded programs to address injury prevention among children in child care centers and schools. Two counties reported four situations in which children were involved in severe car crashes while in car seats provided by the program — and survived without serious injury.

Kittitas: Monthly meetings were held with child care providers, on-site classes were offered on pedestrian safety for 2-4-year-olds, CPR certification provided for child care workers, buckle-up education and bike helmet use. A phone triage system was set up to help workers with difficult topics like evaluating concerns about child abuse and neglect, safe restraint for violent children, and communicable disease questions. The program distributed 20 smoke alarms, five car seats, and 54 bike helmets.

Spokane: The health district took the lead in negotiating a donation of 10,000 bike helmets which could be provided for a shipping and handling fee of $5.50 each.

Five LHDs targeted safety among young children in child care settings. While the focus was injury prevention, these efforts often included teaching about communicable disease control and provided additional education to workers. The programs involved:

- advice and technical assistance on possible hazards in the facility and playground
- distribution of safety equipment
- surveys to obtain baseline data on safety needs
- establishing network meetings about safety among child care providers
- newsletters

Six LHDs developed injury prevention programs for children outside of child care settings. These included:

- increased school inspections
- classes on safety for children and staff
- distribution of bike helmets and car seats
- rewards for wearing helmets (like certificates for ice cream)
- development of community coalitions
- data analysis to pinpoint safety hazards in the community

Family and individual health

Fifteen LHDs used Urgent Needs funds to increase capacity to provide health services for individuals and families, primarily in the areas of health and support services, health education, and oral health. There were four expanded reproductive health programs. There were two programs addressing substance abuse intervention and one regarding needs of older adults.

Access to health services for individuals and families

Thirteen LHDs developed programs to improve access to needed health services or to directly provide education and services.

Okanogan: Breastfeeding is associated with a number of positive outcomes for infants health, including fewer ear infections, somewhat higher IQs and closer bonding with mothers. A program was established to encourage breastfeeding including lactation management education for all public health nurses on staff, contacts and referrals from hospitals, purchase of supplies and educational materials. This county did not have any similar service available to residents.

Spokane: A program is being piloted at two schools (with two control schools) to determine whether training school staff in doing child health risk assessment will lead to earlier intervention for children at risk. If so, this work will demonstrate the need to focus more training about child risk assessment for school staff — teachers, nurses, aides and counselors.

Activities in other LHDs included:

- public health nursing visits for pregnant women with high-risk behavior
- conducting growth clinics
- increasing coordination with local providers regarding children with special health care needs
- making contact with mothers of newborns to discuss immunization, breastfeeding, parenting support, community resources and well child exams
- translation of educational materials into languages used by community residents and development of materials appropriate in low-literacy households
- expanded clinical services for adults and teens (often family planning, STDs and other services combined)
- screening exams for children
- nutrition counseling

Oral Health

Eight LHDs developed or expanded oral health services, frequently cited by public health professionals as an unmet need for children of low-income families.

Island: More than 750 children received dental screenings with referral information provided to parents as needed. Data were collected in conjunction with the screening program and an epidemiologist consulted to analyze results. This program paved the way for a new two-chair dental operatory being built in the community to serve low-income children and families.

Activities in other LHDs included:

- applying sealants to teeth of school children
- a screening program and needs assessment
- fluoride treatments and oral health education
- a referral phone line to assist with access to dental care
- a program to increase knowledge about HIV among dentists and their staff
- limited treatment for dental caries.

Public health capacity building

Thirteen LHDs used some Urgent Needs funds to improve basic agency capacity with a total of 14% of the year one budget among them. Nearly all of this effort was related to increasing community assessment capability. Two of these LHDs also hired additional administrative staff and one expanded laboratory clinician time.

Community assessment

Adams: While many LHDs are heavily reliant on computer technology, this small health district did not have needed equipment. Urgent Needs funds allowed for purchase of a computer and software for basic tracking, data analysis, and information sharing.

Bremerton-Kitsap: A comprehensive multi-step community process has been started (APEX-Part II). In the coming year, this community will assemble local data, analyze findings, identify and prioritize health problems, inventory local resources and develop a specific Community Health Plan for Kitsap County.

Activities in other LHDs included:

- purchases and upgrades of computer equipment to allow use of software to support epidemiology
- increased staff time to conduct community assessments (including public health nurses, demographers, and epidemiologists)
- involvement of community partners such as schools and hospitals in assessment and planning work
- carrying out behavioral risk factor surveys
- added ability to maintain surveillance and communicate observations to local providers
- use of a community coalition to develop specific benchmarks for measuring progress toward community health goals
- training staff in basic health statistical and assessment skills
- initiation of Geographical Information System use for mapping health statistics

Non-infectious disease

Seven LHDs developed or expanded programs related to non-infectious disease: All but one targeted tobacco use. The remaining program focused on cardiovascular risk reduction among hard-to-reach population groups. Together, these programs represented 6% of the budget for year-one.

Tobacco use prevention

The six LHD's with tobacco prevention programs targeted their efforts toward youth and toward reducing smoking during pregnancy.

Island: The Island County Tobacco Free Coalition was formed to reduce tobacco use by facilitating and supporting community projects for education, cessation and prevention. They published a directory of smoke-free restaurants, provided ongoing retailer education, and conducted a survey on youth access to tobacco. The results indicated that for many young people, it was "too late" for prevention efforts—they really needed help to quit smoking. A middle school smoking cessation class helped eight 11–13-year-olds become tobacco-free.

Skagit: The Skagit Health Department helped form a community coalition to develop strategies, published a directory of smoke-free restaurants, continued work with the Liquor Control Board on compliance efforts, provided youth education about the harmful effects of tobacco use, and conducted surveys on tobacco use and cessation programs.

Activities in other LHDs included:

- forming community coalitions
- publication of smoke-free restaurant directories
- organizing reference materials for easy access by teachers and health providers
- surveys of youth
- counter-advertising campaigns involving local business support
- liaison with the Liquor Control Board on compliance efforts
- youth education and demonstrations about harmful effects
- training of school counselors
- out-of-school cessation classes
- surveys and training of health providers to increase communication about tobacco use
- "sting" operations to curtail sales to minors

Local health department programs using Urgent Needs funds

The following list shows the types of programs that were developed using urgent needs funds, and which local health departments used their funds for those programs.

Infectious disease

Sexually transmitted disease
Adams, Bremerton-Kitsap, Mason, Seattle-King, Snohomish, Southwest Washington, Spokane and Whatcom.

Tuberculosis control
Adams, Chelan-Douglas, Columbia, Garfield, Island, Jefferson, Seattle-King, Snohomish, Southwest Washington, Thurston, Walla Walla, Whatcom and Whitman.

Immunizations
Asotin, Benton-Franklin, Chelan-Douglas, Cowlitz, Grant, Grays Harbor, Lewis, Mason, Snohomish and Spokane.

Environmental health

Groundwater
Bremerton-Kitsap, Chelan-Douglas, Seattle-King, Spokane, Tacoma-Pierce, Walla Walla and Whatcom

Food safety
Adams, Benton-Franklin, Bremerton-Kitsap, Chelan-Douglas, Grays Harbor, Jefferson, Lincoln, Northeast Tri-County, Seattle-King, Skagit, Snohomish, Southwest Washington, Spokane, Thurston and Yakima

Drinking water
Benton-Franklin, Bremerton-Kitsap, Clallam, Cowlitz, Grays Harbor, Lewis, Mason, San Juan, Seattle-King, Snohomish, Thurston, Walla Walla, Whatcom and Yakima

Family and individual health

Access to health services
Chelan-Douglas, Cowlitz, Grays Harbor, Lewis, Okanogan, San Juan, Seattle-King, Snohomish, Spokane, Tacoma-Pierce, Walla Walla, Whitman and Yakima

Oral health
Chelan-Douglas, Island, Lewis, Mason, Seattle-King, Snohomish, Spokane and Whitman

Reproductive health
Seattle-King, Snohomish, Tacoma-Pierce and Whitman

Substance abuse
Seattle-King and Spokane

Violence and injury

Violence prevention
Asotin, Bremerton-Kitsap, Clallam, Grant, Kittitas, Northeast Tri-County, Pacific, Seattle-King, Southwest Washington, Tacoma-Pierce and Yakima

Injury prevention
Chelan-Douglas, Grant, Island, Jefferson, Okanogan, Pacific, Seattle-King, Skagit, Snohomish and Spokane

Public health system capacity

Community health assessment
Adams, Asotin, Bremerton-Kitsap, Mason, San Juan, Seattle-King, Snohomish, Southwest Washington, Spokane, Wahkiakum, Whatcom and Yakima

Administration
Seattle-King, Snohomish, Spokane and Whitman

Laboratory
Spokane

Non-infectious Disease

Tobacco use prevention
Garfield, Island, Seattle-King, Skagit, Snohomish and Southwest Washington

Heart disease
Spokane

Appendix E:

Public Health Improvement Plan Steering Committee biographies

Robert George Atwood

Yakima, representing the Washington State Medical Association. Bob has been Health Officer and Director of Yakima Health District since 1974, and of both the Grant and Adams County Health Districts since 1991. He is also a Clinical Associate Professor, University of Washington School of Public Health and Community Medicine. Previously, he headed the Local Health Services Section of the Health Services Division in the State Department of Social and Health Services. He has also served as a Public Health Advisor in Guam, and as a Medical Officer for U.S. Public Health Service, Division of Indian Health, Rosebud, South Dakota. His memberships include National Association of County Health Officials, U.S. Conference of City Health Officers, Washington Association of Local Public Health Officials, and Washington State Medical Association. He has also served on several boards and commissions. Bob received a Doctor of Medicine and Bachelor of Science from University of Wisconsin, and a Master of Public Health from University of Hawaii.

John A. Beare

Spokane, representing the Washington State Public Health Association. John has served as Health Officer for Spokane County Health District for four years. Over the 25 previous years, he held various administrative positions in the Health Division of the State Department of Social and Health Services and the former State Department of Health, including Director and Assistant Secretary, and Acting and Deputy Assistant Secretary. Since 1974 he has been Clinical Professor of Health Services, University of Washington School of Public Health and Community Medicine. Memberships and public service include American Public Health Association, Washington State Public Health Association, Spokane County Medical Society, Washington State Medical Association, Washington State Association of Local Public Health Officials, State Board of Health, Washington Traffic Safety Commission, National Drinking Water Advisory Committee, Executive Committee of Association of State and Territorial Health Officials and AIDSNET Director's Council. He holds a Doctor of Medicine, a Master of Public Health and a Bachelor of Science.

Bobbie Berkowitz

Olympia, representing the Washington State Department of Health as chair of the PHIP Steering Committee. Bobbie was appointed Deputy Secretary for the Department of Health in May, 1993. Prior to that she served as the Chief of Nursing Services for the Seattle-King County Department of Public Health, and Director of Nursing for the Whatcom County Health Department. She holds Clinical Assistant Professor appointments with the University of Washington Schools of Nursing and Public Health, and with Seattle University School of Nursing. Bobbie served on the State Board of Health from 1988 to 1992 and the Washington Health Care Commission where she chaired the Health

Services Committee. Bobbie is on the Board of the Hanford Environmental Health Foundation. She is a Fellow in the American Academy of Nursing and is active with the American Public Health Association. Bobbie holds a Doctor of Philosophy in Nursing Science from Case Western Reserve University, and Master of Nursing and Bachelor of Science-Nursing from the University of Washington.

Dennis Braddock

Seattle, representing the Washington State Association of Community Clinics. Dennis is Executive Director of Washington State Association of Community Clinics, Executive Officer of Community Health Plan of Washington as well as principal and owner of a land use planning consulting firm. From 1983 to 1993, he served in the State House of Representatives where, as Health Care Committee Chair, he worked to develop House positions on a wide range of health care issues and worked for health system reform. Legislation he sponsored included Statewide Trauma System Reform, Omnibus AIDS Bill, Pre-natal Care Legislation, Long Term Care Reform Bill, Health Care Reform Legislation and creation of the Health Care Commission. He was Vice Chair of the Ways and Means Committee and Chair of the Capital Budget Committee. Dennis received a Bachelor of Arts in Political Science from Washington State University.

Margaret M. Casey

Olympia, representing public health consumers. For over 16 years, Margaret has successfully lobbied the Washington State Legislature on family issues, long term care issues, labor, housing, human and civil rights, education, juvenile and adult corrections, and sentencing reform. She has also lobbied for selected issues at the Congressional level. Much of Margaret's work has been for organizations that support public health, such as the Anti-hunger and Nutrition Coalition, the Children's Alliance, Washington School Food Service Association, Washington State Association for Adult Day Centers and Washington Chore and Home Care Coalition. Margaret has also worked as a teacher and principal. She received a Master of Arts in Educational Administration and a Bachelor of Arts from Seattle University.

Dorothy Elaine Conley

Marysville, representing the Public Health Nursing Directors. Elaine has been Director of Community Health for the Snohomish Health District since 1989, and adjunct faculty of School of Nursing, University of Washington since 1989. Her 25 years in health care have included clinical and public health nursing, instructor of nursing, and administration. Among her affiliations are Chair of the Public Health Nursing Directors of Washington, Executive Committee of Washington Association of Local Public Health Officials and Washington Core Public Health Function Committee. Previously, Elaine served as president of Arizona Public Health Association. She has been recognized for developing a Patient Acuity and Workload Analysis System for public health nursing. Elaine received a Master of Public Health from University of Washington and a Bachelor of Science-Nursing from California State University.

Tim Douglas

Bellingham, representing the Association of Washington Cities. Tim is currently Mayor of the City of Bellingham, a position he has held for the past ten years. He has a long-standing involvement with public health issues. He served on the Whatcom County Board of Health and is a member of the Association of Washington Cities Health Care Advisory Committee. As a member of the Executive Board of the Association of Washington Cities, he has taken a leadership role in maintaining environmental quality of the Puget Sound area. He was appointed by Governor Gardner to the Puget Sound Water Quality Authority. He also chairs the Coalition for Clean Water, a statewide association

of cities, counties and sewer districts committed to preserving water quality. He served on the Department of Ecology's Hazardous Waste Advisory Committee, which drafted a state plan for the reduction, reuse, recycling and disposal of hazardous wastes. Prior to his position with the City of Bellingham, Tim held a variety of administrative positions at Western Washington University from 1967 to 1983. He was Dean of Students at that institution from 1980 to 1983. He holds a Bachelor of Arts in Spanish and Russian from Washington State University and Master of Science in Higher Education Administration and Industrial Psychology from Indiana University.

Mimi L Fields

Olympia, representing the Washington State Department of Health. Mimi is the State Health Officer/Deputy Secretary for the Department of Health. She has also served as Assistant Secretary for HIV/AIDs and Infectious Diseases, and as the first Director of the state Office on HIV/AIDS. As State Health Officer, Mimi is lead physician for all public policy decisions on health and illness care in Washington. One of her primary responsibilities is development of local/state partnerships. Along with her roles for the Department of Health, Mimi is Assistant Dean for Public Health Practice at University of Washington School of Public Health and Community Medicine. She also has experience teaching, lecturing and writing, and has had numerous academic appointments. She lectures frequently to professional and community groups, and has presented papers both nationally and internationally. Mimi received a Doctor of Medicine from University of Missouri, Columbia, a Master of Public Health from Harvard University, and a Bachelor of Arts and Bachelor of Science from Luther College. Mimi is board- certified in General Preventive Medicine and Public Health, and is board-eligible in Occupational Medicine and General Preventive Medicine.

Stan Flemming

Steilacoom, representing State House of Representatives, 28th District. Stan is serving his first term as a state legislator. He is Vice Chair of the Environmental Affairs Committee, and member of the Health Care and Higher Education Committees. He is board-certified in family practice, and a previous Associate Professor of Family Medicine. Gubernatorial appointments have included the State Licensing Board and the Governor's Committee on Emergency Medical Services Cost Reimbursement. He has also served on a Higher Education Coordinating Board subcommittee on professional recruitment and retention. He received a Doctor of Osteopath medical degree from College of Osteopathic Medicine of the Pacific, a Master of Social/Psychology from Pacific Lutheran University, and a Bachelor of Science-Zoology from University of Washington.

James L Gale

Seattle, representing the University of Washington, School of Public Health. Jim is Professor of Epidemiology, Adjunct Professor of Health Services, and Director of Center for Public Health Practice in the School of Public Health and Community Medicine at the University of Washington. He has been a faculty member since 1969. In addition, he is the Health Officer for the Kittitas County Health Department. Among his research interests are infectious disease epidemiology, vaccines and their adverse effects, and the uses of surveillance information by state and local health departments. He has served as a reviewer of various National Institutes of Health Review Committees. Jim is a member of Washington State Association of Local Public Health Officials, and national organizations including American Public Health Association, American Epidemiological Society and Infectious Disease Society of America. He is a past president of the Society for Epidemiological Research. He received a Bachelor of Arts degree from Harvard University, a Doctor of Medicine from Columbia University, and a Master of Science in Preventive Medicine (Epidemiology) from the University of Washington.

Robert P. Gronczack

Seattle, representing environmental health concerns. Bob has been the Superintendent of Water for the City of Seattle since 1987. Prior to that, he served as Director of Public Works and Construction at the Naval Air Station on Whidbey Island. He held several positions with the Navy including Director of Facilities Planning and Development, Deputy Public Works Director and Regional Civil Engineer. He is a registered civil engineer in the states of Washington and Pennsylvania. In 1987, Bob received the Excellence in Management Award from the Seattle Management Association. He is a member of the Board of the Association of Metropolitan Water Agencies. He holds a Master of Science and Bachelor of Science in Civil Engineering from University of Michigan, and a Bachelor of Science in Engineering from U.S. Naval Academy.

Tom Hilyard

Tacoma, representing the Washington Health Services Commission. Tom has served as a commissioner since September 1993. Prior to his work with the Health Services Commission, Tom served as Executive Director of Human Services for Pierce County. From 1985 to 1987, he served as the Director of three agencies under the Human Services Department. From 1981 to 1985, his time and talents were devoted to anti-poverty programs while employed as Manager of the Pierce County Community Action Agency. Among his other positions he was a program development specialist for Tacoma's Human Development Department. He served as chair of the Washington Basic Health Plan Advisory Council, and for five years was a key advisor in the development of this innovative health plan for the working poor. He also chaired the Health Policy Committee of Governor Gardner's 1984 Transition Team and served as one of three co-chairs of Governor Lowry's Transition Team's Health Policy Committee. Tom also chaired the Pierce County Facilities Review Committee for six years. He was recognized as an Outstanding Young Man of America in 1983, and named in Who's Who Among Black Americans, 1980-1985. Tom earned a Bachelor of Arts Degree in Sociology and Anthropology from Western Washington University.

M. Ward Hinds

Mukilteo, representing the State Board of Health. Since 1986, Ward has been Health Officer of Snohomish Health District and since 1988, Director of Region 3 AIDS Service Network. Previously, he was Director of Epidemiology and State Epidemiologist for Kentucky Department of Health Services, and Associate Director of Epidemiology for Cancer Center of Hawaii. Ward is also currently a Clinical Professor in both the Epidemiology and Health Services departments, University of Washington School of Public Health and Community Medicine. His numerous memberships have included State Board of Health, American Public Health Association, Society for Epidemiologic Research, Washington Association of Local Public Health Officials, Washington State Public Health Association, All Kids Count, Tobacco Free Washington, Governor's AIDS Advisory Committee and Community Health Center of Snohomish County Board. Ward received a Doctor of Medicine and a Bachelor of Arts-Chemistry from Vanderbilt University, and a Master of Public Health-Epidemiology from University of Washington.

Susan M. Johnson

Seattle, representing labor issues. Since 1979, Susan has served as Director of Government Relations for Service Employees International Union. This statewide council represents 20,000 professionals and skilled workers in health care, K-12, higher education, business and law enforcement. Susan provides leadership to coalitions of divergent groups to reach consensus on issues of concern to members, and lobbies the Washington State Legislature on those issues. She has spearheaded numerous legislative issue campaigns, including the Livable Income Campaign coalition which accomplished

landmark minimum wage reform. Governor Lowry appointed Susan co-chair of the Citizen Task Force on Government Efficiency and Effectiveness, and to the Governor's Citizens' Cabinet. She has served on many other state and regional boards, commissions and councils. Susan holds a Bachelor of Arts from Middlebury College, Vermont.

Charles Frederick Kleeberg

Tacoma, representing environmental health concerns. For eight years, Chuck served as Director of the Environmental health Division, Seattle-King County Department of Public Health. For 13 years, Chuck served in several capacities with the U. S. Environmental Protection Agency (EPA), including advising City of Seattle on environmental issues, overseeing Washington Department of Ecology's (WDOE) air and waste programs, and leading Superfund studies and projects. Most recently, he has served as the Director of the King County Building Department and Director of Seattle's Sewer Utility. Among his affiliations are Washington State Bar Association, Washington State Public Health Association, Washington State Environmental Health Association and National Environmental Health Association. Chuck received a Juris Doctorate from University of Puget Sound School of Law, and a Bachelor of Science-Mechanical Engineering from North Carolina State University.

Nancy Leer

Seattle, representing the Washington State Nurses Association. Nancy was recently appointed Executive Director of Washington State Nurses Association. Her background in health care operations, administration and management includes Associate Executive Director of Planned Parenthood of Alameda and San Francisco counties, 12 years at Chinese Hospital in San Francisco, progressing from Director of Patient Care Services to Acting Hospital Administrator. She was also Director of Staff Development and Associate Director of Nursing at Marshal Hale Hospital, San Francisco. She has consulted on Nursing Management in England, France, Spain and Canada. Nancy holds a Master of Public Administration in Health Services from the College of Notre Dame, Belmont, and a Bachelor of Science in Nursing and Public Health, from the University of Ottawa.

Thomas L. Milne

Vancouver, representing the Washington State Association of Local Public Health Officials. Tom has served as Executive Director of Southwest Washington Health District since 1983, and serves on a number of regional committees and task forces addressing AIDS, the homeless, access to medical care, substance abuse and other topics. He chairs the Washington State AIDSNet Council, is past president of Washington State Association of Local Public Health Officials, and serves on the Basic Health Plan Advisory Council. He is also on the Advisory Council of American Public Health Association, and the Policy Committee of National Association of County Health Officials. Tom is a member of the Editorial Board of "The Journal of Public Health Policy." He was a founding scholar in the first annual National Public Health Leadership Institute and currently serves on its Governing Council. He holds a Bachelor of Science in Pharmacy from Oregon State University.

Bruce A. Miyahara

Seattle, representing the Washington State Department of Health. Bruce was appointed Secretary of the Department of Health in February, 1993 by Governor Lowry. He came from Seattle-King County Department of Health where he had served as Deputy Director and Chief Administrative Officer since 1986 and Acting Director in 1991. Previous posts included Director of Regional Health Services, Administrator of Jail Health Services, and Consultant for Primary Care Programs. In the early 1970s, Bruce worked with the group who started Seattle's free health clinics for the poor, which grew into the present community health center network. He has served as Treasurer of Washington State Public Health Association, Council Member of Pacific Medical Center, and is active in civic and community organizations. Bruce holds a Master of Health Administration and a Bachelor of Arts from University of Washington.

Anita Monoian

Yakima, representing the Washington State Association of Community Clinics. Anita has served for 15 years as Executive Director of Yakima Neighborhood Health Services. Other activities include service on the Boards of Directors of Washington Association of Community Health Centers, Community Health Plan of Washington, National Association of Community Health Centers and Northwest Regional Primary Care Association of which she is President. She is also on the Board and the Health Policy and HIV-AIDS - Substance Abuse Committees of the National Association of Community Health Centers. She is a member of Washington Rural Health Association. Also interested in environmental health issues, Anita has served on the Washington State High Level Nuclear Waste Advisory Committee and the State Department of Ecology Solid Waste Advisory Committee.

Genoveva P. Morales

Sunnyside, representing public health consumers. As Migrant Head Start Director for the Washington State Migrant Council, Genoveva administers a comprehensive service delivery program for 1,962 migrant children in 25 communities around the state. She has been with the Washington State Migrant Council since 1987. Her previous work included counselling positions at higher education institutions. Genoveva has been an active participant on several committees concerning children's needs. These include the state's Child Care Coordinating Committee, National Migrant Head Start Directors Association, Seasonal Day Care Providers Association and Interagency Agricultural Task Force. She received a Master of Social Work from Eastern Washington University and a Bachelor of Arts in Social Welfare from University of Washington.

Ronald J. Schurra

Spokane, representing the Washington State Hospital Association. Before assuming his current position with Dominican Network/Holy Family Hospital in January of 1989, Ron served as the Executive Vice-President/Chief Operating Officer of St. Joseph's Mercy Hospital in Pontiac, Michigan, for 2 1/2 years. From 1984 to 1986, Ron served as Senior Vice-President and Chief Operating Officer for Venice Hospital in Venice, Florida. From 1975 to 1984, Ron worked as the Administrator of St. Francis Hospital in Escanaba, Michigan. From 1969 to 1975, Ron served as Assistant Director of Somerset Hospital in Somerset, New Jersey. Ron began his career in health care in 1968 as an assistant to the Health Care Commissioner in the State of New York. Ron received his bachelor's degree from St. Louis University in 1965 and his master's degree from the University of Michigan in 1969 and is currently a fellow in the American College of Health Care Executives.

Ron Sims

Seattle, representing the Washington State Association of Counties. Elected King County Council member in 1985, Ron is the first African American to be elected as a county official in Washington State. Previously, he had served as Leadership Coordinator for the 37th District State Senator George Fleming. Ron chairs the King County Board of Health, and the County Council's Fiscal Management and Human Services Committee. He also serves on the METRO Council which deals with transit and water quality issues for King County. Ron is recognized for his legislative, policy and budget efforts, and his civic and volunteer support of children/youth and seniors. He is president of the Rainier District Youth Athletic Association, coaches youth teams, and has served as a lay minister for Operation Nightwatch. He holds a Bachelor of Arts in Psychology from Central Washington University.

Mark G. Sollek

Seattle, representing the Health Care Purchasers Association. Mark recently accepted the Associate Medical Director position at King County Medical Blue Shield. Prior to that, he consulted with businesses, insurance companies, Valley Medical Center and Hanford Environmental Health in the area of health benefits and workers compensation. He was Medical Director of U.S. West Communications from 1987 through 1992. Prior to that, from 1975 through 1987, he practiced Internal Medicine and Nephrology. He has been a Clinical Associate Professor in Internal Medicine, University of Washington School of Medicine. Mark has consulted with U.S. West Communications, Pacific Northwest Ballet and Pepsico regarding AIDS education and policies, and was a member of the Strategic Planning Committee for the Northwest AIDS Foundation. He was a physician in Vietnam for one year with the U.S. Army. Memberships include King County and Washington State Medical Associations, American College of Occupational and Environmental Medicine, American Public Health Association, American College of Physician Executives and National Association of Managed Care Physicians. Mark received his Doctor of Medicine from Duke University Medical School and Bachelor of Science degree from the University of Cincinnati.

Phil Talmadge

Seattle, representing the Washington State Senate, 34th District. Phil has served in the State Senate since 1979. Currently, he chairs the Health and Human Services Committee and is a member of the Ecology and Parks, Ways and Means and Statute Law Committees. He also serves on the Governor's Growth Strategies Commission, Judicial Council and Joint Select Committee on Juvenile Issues. He has been the prime sponsor of more than 150 bills, and a leader in children's issues, mental health, court reform, consumer protection, environmental quality, anti-crime, growth management, education reform and comprehensive health care reform. Phil has been an attorney since 1975 with a concentration on appellate practice. He is active in many business, sport, cultural and professional organizations. Phil received a Juris Doctorate from University of Washington and a Bachelor of Arts-Political Science from Yale University.

John George Thayer

Mount Vernon, representing the Washington State Environmental Health Directors. John has served as Director of Environmental Health for Skagit County Health Department since 1979. Prior posts with the department include Food Program Supervisor and General Sanitarian. He has served on the State Board of Health, and is a member of Washington State Public Health Association and Washington State Environmental Health Association, and has held several offices including Chair for Washington State Environmental Health Directors. His activities in these organizations have included work related to food programs, farmworker housing issues, and legislation. John received a Bachelor of Science in Environmental Health from University of Washington.

Mel Tonasket

Nespelem, representing Indian health issues. Mel serves as Service Unit Director at the Colville Indian Health Center, Indian Health Service. His prior posts were Director of Indian Policy and Support Services for the State Department of Social and Health Services, and Public Affairs Specialist for the Indian Health Service, Portland office. His experience also includes 19 years on the Tribal Council of the Colville Confederated Tribes, the offices of President and first Vice President on the National Congress of American Indians, and two years on the American Indian Policy Review (Congressional) Commission. He is on the boards of Northwest Renewable Resources Center, United Indian of All Tribes Foundation, Governor's Indian Advisory Council and Paschal Sherman Indian School. Mel is an advisory board member to the Indian Education Program at Eastern Washington University, and the Graduate School of Public Administration and the Environmental Studies Program at University of Washington.

Appendix F

Technical advisory committee members

Capacity standards technical advisory committee

Pat Libbey	Thurston County Health Department
Jack Thompson	Seattle-King County Department of Public Health
Verne Gibbs	Department of Health - Community & Family Health
Bob Collins	University of Washington
Jan Dahl	Whatcom County Health Department
Jon Counts	Department of Health - Public Health Laboratory
Sherm Cox	Department of Health - Health Systems Quality Assurance
Maria Gardipee	Department of Health - Health Systems Quality Assurance
Janet Griffith	Department of Health - Health Systems Quality Assurance
Elizabeth Ward	Department of Health - Epidemiology and Health Statistics
Lou Dooley	Pierce County Public Works
Tim McDonald	Island County Health Department
Gregg Grunenfelder	Thurston County Health Department
Linc Weaver	Department of Health - Community and Family Health
Rita Schmidt	Department of Health - Community and Family Health
Elaine Conley	Snohomish County Health District
Lori Taylor	Sacred Heart Medical Center
Glenn Briskin	Department of Health - Community and Family Health
Gary Goldbaum	AIDS Prevention Project, Seattle-King County Department of Public Health
David Brenna	Department of Social Health Services - Division of Alcohol and Substance Abuse

Activity standards technical advisory committee

Infectious disease

John Peppert	Department of Health - Community and Family Health
Kay Koontz	Southwest Washington Health District
Dave Peterson	Snohomish County Health District
Nancy Campbell	Northwest AIDS Foundation
Donna Osmond	Department of Health - Public Health Laboratory

Christine Charbonneau	Planned Parenthood of Seattle King County
Pat Macier	Department of Health - Community and Family Health

Non-infectious diseases

Carl Osaki	Seattle-King County Department of Public Health
Kristin Karns	Kittitas County Health Department
Jo Wadsworth	Department of Health - Community and Family Health
Joe Castorina	Department of Health - Community and Family Health
Nancy Cherry	Seattle-King County Department of Public Health
Jan Norman	Department of Health - Community and Family Health

Violence and injury

Eric Slagle	Department of Health - Environmental Health
Elaine Blair	Spokane County Health Department
Sharon Stewart-Johnson	Seattle-King County Department of Public Health
John Britt	Harborview Injury Center
Rowland Bradley	Seattle-King County Department of Public Health
Denise Bohanna	Tacoma-Pierce County Health Department
Steve Bowman	Department of Health - Community and Family Health
Michelle Boyd	Department of Community Development
Robin Downey	Department of Community Development
Bev Emory	Department of Community Development
Janet Lenart	Department of Health - Community and Family Health
Dick Nuse	Washington Traffic Safety Commission
Kathy Williams	Department of Health - Health Systems Quality Assurance

Family and individual health

John Liu	Odessa Brown Children's Clinic
Joyce Gardner	Department of Health - Community and Family Health
Ron Williams	Benton/Franklin Health District
MaryAnne Lindeblad	Department of Social Health Services - Medical Assistance
Roberta Leonardy	Bremerton-Kitsap Health District
Christi Bristow	Department of Health - Community and Family Health
Beth Hines	Department of Health - Community and Family Health
Janet Lenart	Department of Health - Community and Family Health
Kathy Chapman	Department of Health - Community and Family Health
Sharon McAllister	Department of Health - Community and Family Health
Mark Wirschem	King County, Division of Alcohol and Substance Abuse
Lowell Sever	Battelle Research Center

Environmental health

Jim Matsuyama	Northeast Tri-County Health District
June Strickland	Fred Hutchinson Cancer Research Center
Joye Bonvouloir	Island County Health Department
Ben Leifer	Seattle-King County Department of Public Health
George Hilton	Department of Health - Public Health Laboratory
Ruth Sechena	U.S. Navy - Occupational Medicine

Finance and governance technical advisory committee

Mary Selecky	Chair, Northeast Tri-County Health District
Ruth King	Office of Financial Management
Charles Vaught	Okanogan County Health District
Rick Mockler	Snohomish County Health District
Sue Kelln	Spokane County Health District
Elise Chayet	Seattle-King County Department of Public Health
David Lurie	Seattle-King County Department of Public Health
Federico Cruz-Uribe	Tacoma-Pierce County Health Department
Bill Beery	Group Health Cooperative
Frank Hickey	Department of Health - Management Services
Bill Hagens	House Health Care Committee
Don Sloma	Senate Health and Human Services Committee
Linda Topel	Yakima Health District
David Specter	Jefferson County Health Department
Sam Granato	Former Mayor, Bainbridge Island

Personal health transition workgroup

Mimi L Fields	Chair, Department of Health
Sharon Stewart Johnson	Seattle-King County Department of Public Health
Sandy Ciske	Seattle-King County Department of Public Health
Dorothy McBride	Northeast Tri-County Health District
Jan Dahl	Whatcom County Health Department
M. Ward Hinds	Snohomish Health District
Gwen Chaplin	Planned Parenthood of Central Washington
MaryAnne Lindeblad	Department of Social and Health Services
Pat Russell	Healthy Baby Project
H. Berry Myers	Health Care Authority
Carla Epps	Health Services Commission
Rogelio Riojas	SeaMar Community Health Center
Diane Earl	Group Health Cooperative of Puget Sound
Mel Belding	Kitsap Physicians Service
Mike Glass	Department of Health - Public Health Laboratory
Maxine Hayes	Department of Health - Community and Family Health

Appendix G

Statutory authority for the Public Health Improvement Plan

RCW 43.70.520 Public health services improvement plan.

(1) The Legislature finds that the public health functions of community assessment, policy development, and assurance of service delivery are essential elements in achieving the objectives of health reform in Washington State. The legislature further finds that the population-based services provided by state and local health departments are cost-effective and are a critical strategy for the long-term containment of health care costs. The legislature further finds that the public health system in the state lacks the capacity to fulfill these functions consistent with the needs of a reformed health care system.

(2) The department of health shall develop, in consultation with local health departments and districts, the state board of health, the health services commission, area Indian health service, and other state agencies, health services providers, and citizens concerned about public health, a public health services improvement plan. The plan shall provide a detailed accounting of deficits in the core functions of assessment, policy development, assurance of the current public health system, how additional public health funding would be used, and describe the benefits expected from expanded expenditures.

(3) The plan shall include:

(a) Definition of minimum standards for public health protection through assessment, policy development, and assurance:

(i) Enumeration of communities not meeting those standards;

(ii) A budget and staffing plan for bringing all communities up to minimum standards;

(iii) An analysis of the costs and benefits expected from adopting minimum public health standards for assessment, policy development, and assurance;

(b) Recommended strategies and a schedule for improving public health programs throughout the state, including:

(i) Strategies for transferring personal health care services from the public health system, into the uniform benefits package where feasible; and

(ii) Timing of increased funding for public health services linked to specific objectives for improving public health; and

(c) A recommended level of dedicated funding for public health services to be expressed in terms of a percentage of total health service expenditures in the state or a set per person amount; such funding does not supplant existing federal, state, and local funds received by local health departments, and methods of distributing funds among local health departments.

(4) The department shall coordinate this planning process with the study activities required in section 258, chapter 492, Laws of 1993.

(5) By March 1, 1994, the department shall provide initial recommendations of the public health services improvement plan to the legislature regarding minimum public health standards, and public health programs needed to address urgent needs, such as those cited in subsection (7) of this section.

(6) By December 1, 1994, the department shall present the public health services improvement plan to the legislature, with specific recommendations for each element of the plan to be implemented over the period from 1995 through 1997.

(7) Thereafter, the department shall update the public health services improvement plan for presentation to the legislature prior to the beginning of a new biennium.

(8) Among the specific population-based public health activities to be considered in the public health services improvement plan are: Health data assessment an chronic and infectious disease surveillance; rapid response to outbreaks of communicable disease; efforts to prevent and control specific communicable diseases, such as tuberculosis and acquired immune deficiency syndrome; health education to promote healthy behaviors and to reduce the prevalence of chronic disease, such as those linked to the use of tobacco; access to primary care in coordination with existing community and migrant health clinics and other not for profit health care organizations; programs to ensure children are born as healthy as possible and they receive immunization and adequate nutrition; efforts to prevent intentional and unintentional injury; programs to ensure the safety of drinking water and food supplies; poison control; trauma services; and other activities that have the potential to improve the health of the population or special populations and reduce the need for or cost of health services. [1993 c 492 467.]

NOTES:

Findings—Intent—1993 c 492: See notes following RCW 43.72.005.

Short title—Severability—Savings—Captions not law—Reservation of legislative power—Effective dates—1993 c 492: See RCW 43.72.910 through 43.72.915.

Appendix H
Glossary

APEX/PH Assessment Protocol for Excellence in Public Health. Developed by a consortium of national public health organizations, this is a tool for assessing the organizational capacity of public health agencies (Part I) and the health of communities (Part II). The Washington Department of Health and most local health jurisdictions in Washington participated in an APEX/PH process beginning in 1991. There is also in Washington State an "Environmental Health Addendum" to APEX/PH Part II, containing an expanded set of environmental health indicators.

assessment The regular collection, analysis and sharing of information about health conditions, risks, and resources in a community. The assessment function is needed to identify trends in illness, injury, and death, the factors which may cause these events, available health resources and their application, unmet needs, and community perceptions about health issues.

assurance Doing something or making sure someone else does it and does it well. A public health jurisdiction responsibility, within available resources and consistent with community and public health problem priorities, to provide leadership in the community, collaborate with other organizations, or —as a last resort — provide a service itself. The specific function or service may, in different communities or at different times, be the responsibility of the public health jurisdiction or other entities in the community. Assure does not imply an entitlement or guarantee; it does, however, imply that a process has been developed to identify problems which the community wants to address.

capacity The ability to perform the core public health functions of assessment, policy development, and assurance on a continuous, consistent basis, made possible by maintenance of the basic infrastructure of the public health system, including human, capital, and technology resources.

capacity standards Statements of what public health agencies must do as a part of ongoing, daily operations to adequately protect and promote health, and prevent disease, injury, and premature death. In the Public Health Improvement Plan these responsibilities are stated as capacity standards and separated into five categories: assessment, policy development, prevention, access and quality, and administration.

certified health plan A managed health care plan, certified by the Office of the Insurance Commissioner to provide to state residents no less than the health services covered by the uniform benefits package.

clinical personal health services Health services generally provided one-on-one in a clinical setting.

Community Public Health and Safety Networks Local prevention planning entity created by the Legislature as part of the Washington Violence Reduction Programs Act (ESHB 2319) in 1994. These networks will create a comprehensive violence prevention plan and lead community efforts in resource development and service coordination. Each network is affiliated with a public agency, such as a school district or health department, for fiscal purposes. Networks are made up of 23 members — 13 citizen representatives and 10 individuals from local government and agencies core functions of public health.

care functions The three basic functions of the public health system as set forth in the 1988 report, The Future of Public Health, by the Institute of Medicine, are assessment, policy development, and assurance. In the Public Health Improvement Plan the responsibilities of state and local public health agencies are stated as capacity standards and separated into five categories: assessment, policy development, prevention, access and quality, and administration. Public health agencies perform the core functions by engaging in the activities described in the 88 PHIP capacity standards.

environmental health An organized community effort to minimize the public's exposure to environmental hazards by identifying the disease or injury agent, preventing the agent's transmission through the environment, and protecting people from the exposure to contaminated and hazardous environments.

epidemiology The study of the distribution and determinants of diseases and injuries in human populations. Epidemiology is concerned with the frequencies and types of illnesses and injuries in groups of people and with the factors that influence their distribution.

Family Policy Council The ten member body which has primary responsibility for implementing the youth violence prevention programs of the Washington Violence Reduction Programs Act (ESHB 2319). Members include: Superintendent of Public Instruction, Commissioner of the Employment Security Department, Secretary of the Department of Social and Health Services, Secretary of the Department of Health, Director of the Department of Community, Trade and Economic Development, two members from the House of Representatives, two members from the Senate, and one representative from the Governor's Office.

finance The sources, timing, and channels of public health funds, and the authority to raise and distribute those funds.

foodborne illness Illness caused by the transfer of disease organisms or toxins from food to humans.

governance The legal authority and responsibility for the public health system.

Health Personnel Resource Plan A process enacted by the Legislature in 1991 to identify health professions personnel shortages and to design and implement activities to alleviate those shortages. It became part of Washington State health reform with the passage of the Health Services Act of 1993. The initial 1993-1995 plan was submitted to the Legislature in December 1992. The 1995-1997 plan has been approved by the Governor's Office for submission to the legislature on January 1, 1995. Biennial updates will be prepared in even-numbered years. The plan is prepared under the direction of the Statutory committee, a six-agency committee comprised of representatives from the Department of Health, the Higher Education Coordinating Board, the Department of Social and Health Services, the State Board for Community and Technical Colleges, the Superintendent of Public Instruction, and the Health Services Commission.

Health Services Act of 1993 A Washington State law signed in May 1993 that sets forth early implementation measures and a process for overall reform of the health system in Washington. The goals of the act are to stabilize health services costs, reduce the demand for unneeded services, assure access to essential services for all residents, improve health status, and ensure that health system costs do not undermine the financial viability of nonhealth care businesses. In the act, the Department of Health is charged with developing and submitting the initial Public Health Improvement Plan to the Legislature by December 1, 1994.

Health Services Information System A state-wide health data system which will track health care costs, quality, utilization, and outcomes. The development, implementation, and custody of the system is the responsibility of the Department of Health, with policy direction and oversight provided by the Washington Health Services Commission.

Healthy People 2000 A prevention initiative that presents a national strategy for significantly improving the health of Americans in the 1990's. It recognizes that lifestyle and environmental factors are major determinants in disease prevention and health promotion and provides strategies to significantly reduce preventable death and disability, enhance quality of life, and reduce disparities in health status between various population groups within our society. The official Healthy People 2000 statement/document includes over 300 specific objectives that set priorities for public health during the 1990's.

incidence The number of cases of disease having their onset during a prescribed period of time. It is often expressed as a rate. Incidence is a measure of morbidity or other events that occur within a specified period of time. See related prevalence.

Indian Health Service The agency within the U.S. Department of Health and Human Services created in 1955 to provide health care services to American Indians.

infectious Capable of causing infection or disease by entrance of organisms (e.g. bacteria, viruses, protozoans, fungi) into the body, which then grow and multiply. Often used synonymously with "communicable."

interventions Recommended strategies and activities for communities to employ in their efforts to achieve the improved levels of health status set forth in the outcome standards.

local board of health Local boards of health are governing bodies of at least three persons who oversee matters pertaining to the preservation of the life and health of the people within their jurisdiction. Membership is made up of local elected officials. Each local board of health enforces public health statutes and rules, supervises the maintenance of all health and sanitary measures, enacts local rules and regulations, and provides for the control and prevention of any dangerous, contagious, or infectious disease.

managed care An integrated system of insurance, financing, and health service delivery which focuses on the appropriate and cost-effective use of health services delivered through defined networks of providers and proper allocation of financial risk.

morbidity A measure of disease incidence or prevalence in a given population, location, or other grouping of interest.

mortality A measure of deaths in a given population, location, or other grouping of interest.

Motor Vehicle Excise Tax (MVET) A percentage of the excise tax imposed for the privleges of using a motor vehicle in the State of Washington. A portion of the MVET is a source of funds for the public health system identified in the Health Services Act of 1993. Under the act, cities are required to pay counties 2.95% of their MVET collections to be used solely to support public health activities. This provision does not take affect until July 1, 1995 and could be changed in the 1995 legislative session.

non-infectious Not spread by infectious agents. Often used synonymously with "noncommunicable."

occupational health Activities undertaken to protect and promote the health and safety of employees in the workplace, including minimizing exposure to hazardous substances, evaluating work practices and environments to reduce injury, and reducing or eliminating other health threats.

outcome standards Long-term objectives that define optimal, measurable future levels of health status, maximum acceptable levels of disease, injury, or dysfunction, or prevalence of risk factors.

policy development The process whereby public health agencies evaluate and determine health needs and the best ways to address them, including the identification of appropriate resources and funding mechanisms.

population-based Pertaining to the entire population in a particular area.

prevalence The number of cases of a disease, infected persons, or persons with some other attribute present during a particular interval of time. It is often expressed as a rate.

See related incidence.

prevention Actions taken to reduce susceptibility or exposure to health problems (primary prevention), detect and treat disease in early stages (secondary prevention), or alleviate the effects of disease and injury (tertiary prevention).

promotion Health education and the fostering of healthy living conditions and lifestyles.

protection Elimination or reduction of exposure to injuries and occupational or environmental hazards.

protective factor An aspect of life which reduces the likelihood of negative outcomes, either directly or by reducing the impact of risk factors.

public health Activities that society does collectively to assure the conditions in which people can be healthy. This includes organized community efforts to prevent, identify, preempt, and counter threats to the public's health.

public health department/district Local (county, combined city-county, or multi-county) health agency, operated by local government, with oversight and direction from a local board of health, which provides public health services throughout a defined geographic area.

quality assurance Monitoring and maintaining the quality of public health services through licensing and discipline of health professionals, licensing of health facilities, and the enforcement of standards and regulations.

risk assessment Identifying and measuring the presence of direct causes and risk factors which, based on scientific evidence or theory, are thought to directly influence the level of a specific health problem.

risk communication The production and dissemination of information regarding health risks and methods of avoiding them.

risk factor Personal qualities or societal conditions which lead to the increased probability of a problem or problems developing.

Safe Drinking Water Act The federal Safe Drinking Water Act (SDWA) was passed in 1974, and amended in 1986. It includes water quality standards, and sampling, treatment, and public notification requirements. The State Department of Health has been granted responsibility for carrying out the provisions of the federal law. This is called "primacy."

Self-determination Act of 1975 (Public Law 93-638) Federal law which strengthened tribal governmental control over federally funded programs for Indians. The U.S. Secretary of Health and Human Services was authorized to contract with Indian tribes, under which the tribes themselves assumed responsibility for administering the federal programs.

standards Accepted measures of comparison having quantitative or qualitative value.

State Board of Health The State Board of Health has ten members, nine of whom are appointed by the Governor. The tenth member is the Secretary of the State Department of Health, or designee. The membership includes people who are experienced in matters of health and sanitation, elected officials, local health officers, and citizen consumers of health care. The board provides a forum for the development of public health policy and has rulemaking authority to protect public health, improve health status, and promote and assess the quality, cost, and accessibility of health care throughout the state.

threshold standards Rate or level of illness or injury in a community or population which, if exceeded, call for closer attention and may signal alarms for renewed or redoubled action.

Tri-Association The Association of Washington Cities, the Washington State Association of Counties, and the Washington Association of County Officials are, collectively, the Tri-Association. Responsibilities of the Tri-Association under the Health Services Act of 1993 include analyzing the membership of local public health

department/district governing bodies and developing recommendations regarding the appropriateness of Motor Vehicle Excise Tax financing of local public health.

uniform benefits package (UBP) The subset of the "uniform set of health services" (see below) that is guaranteed to all Washington State residents, funded through insurance mechanisms, and delivered through certified health plans. The initial package design will be proposed to the legislature by the Washington Health Services Commission for the 1995 legislative session.

Uniform Crime Reporting System The reporting and collection of crime and arrest statistics by law enforcement agencies in a manner consistent with the FBI's Uniform Crime Reporting program guidelines. The data include counts of crimes known to the police and of arrests made for specific types of crimes. The arrest data are broken down by the age, sex, race and ethnicity of the arrestee.

uniform set of health services A broad range of health services which includes three overlapping components: (1) personal health services, (2) core public health functions, and (3) health system support. Conceptually the uniform set is composed of the full scope and range of appropriate and effective health services and health system support services. Initially, however, it will be confined to a smaller set of services, those to which access can be ensured.

universal access The right and ability of all Washington residents to receive a comprehensive, uniform, and affordable set of confidential, appropriate, and effective health services.

urgent needs funds Allocation of $10 million by the 1993 State Legislature to local public health jurisdictions to be distributed on a per capita basis to enable them to respond to urgent public health problems and unmet needs existing in their respective communities.

Violence Reduction Programs Act (ESHB 2319) Legislation enacted during the 1994 session, commonly referred to as the youth violence legislation, which establishes an innovative, community-based strategy for reducing the unacceptably high levels of violent behavior in Washington. The act creates a decentralized prevention effort through the formation of local community networks called Community Public Health and Safety Networks. The act specifically recognizes that violent behavior among youth often occurs along with other problems — called risk factors — such as early pregnancy, dropping out of school, drug and alcohol abuse, suicide attempts, child abuse and domestic violence. Conversely, it also recognizes protective factors which serve to reduce the likelihood of such behaviors, even among those exposed to multiple risk factors.

WIC Women, Infants, and Children program. Governmental program which funds and delivers health screening and assessment, nutrition counseling and education, and vouchers for specific food items, for women, infants, and children at risk for poor prenatal/perinatal health or poor growth and development.

Washington Health Services Commission A Governor-appointed state commission created by the Health Services Act of 1993. The commission has five voting members, plus the Insurance Commissioner as a non-voting member. Responsibilities include developing recommendations to the legislature on the design of the uniform benefits package, standards for certified health plans, and systems of accountability for state health system reform.

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