4. HOSPITAL BED NEED FORECASTING METHOD

a. INTRODUCTION

This document is a revision of the "Guide to the Use of the Washington State Hospital Bed Projection Methodology," prepared in 1979. The former version of the Guide was adopted by the State Health Coordinating Council (SHCC) in its entirety as part of the 1980 State Health Plan (SHP). It later was incorporated by reference in the 1982 SHP.

This version differs from the original in three ways:

1) It contains several substantive policy changes, including trend-adjustment of the hospital utilization rate used in forecasting.

2) It is different in format and includes some editorial improvements. For example, the order of presentation has been changed and the formerly separate psychiatric bed need forecasts have been brought into the same document with less duplication.

3) Certain step-by-step calculation methods and examples which were part of the 1979 Guide will be made available in comparable detail but will not be part of the State Health Plan in order to permit timely minor revisions (e.g., improved data sources).

b. SUMMARY

This plan consolidates two earlier hospital forecasting documents, maintaining a similar general framework and method but changing a number of particulars. The general hospital bed need forecasting method and related principles were initially adopted by the SHCC in 1979 in the "Guide to the Washington State Hospital Bed Projection Methodology." This was printed in the 1980 SHP and incorporated by reference in the 1982 SHP. A separate document, the "Short-Term Hospital Psychiatric Bed Projection Method," was adopted by the SHCC in 1981 and included in the 1982 SHP. While consistent in general principles with the overall forecasting method, this method contained elements specific to psychiatric services.

The hospital bed need forecasting method is the primary quantitative basis for review of hospital projects which fall under the Certificate of Need law. Review is required for all new hospital beds and for some changes in use of existing beds (depending on what new services are proposed and how large a capital expenditure is entailed). Forecasts clearly address the issue of total bed need for each geographic area. However some specific services (uses of beds) are reviewable, but not specifically forecast as a subtotal of bed need. In such cases, other methods, not formally adopted in the SHP, must be used as part of the assessment of public need for the beds.

The methods in this plan produce two forecasts, one for short-stay psychiatric bed needs in nongovernmental hospitals and one for non-psychiatric bed needs in all hospitals within the state. The non-psychiatric forecasts are prepared for the entire state, the health planning regions and for each of the geographic hospital planning areas. The psychiatric forecasts are prepared for the entire state, each health planning region and each county (or multi-county) mental health planning area.

It is possible for hospitals, as corporate entities, to establish services which fall outside the scope of the forecasts - for example, a hospital can open a long-term care wing which is counted and licensed as a nursing home - but in general, any "bedded service" of a hospital is within this scope unless clearly defined to the contrary in the State Health Plan. To give a few examples, obstetric beds, adult rehabilitation service beds, alcoholism treatment beds and rural hospital swing beds all are part of the nonpsychiatric bed need total.

The nonpsychiatric forecast method starts with information on the use of hospital services in a "base year." Hospital use rates are calculated for the residents of each hospital planning area. These rates are stated in patient-days per 1,000 population for two age groups: 0-64 and 65 or older. Long-term trends in the hospital use rate (currently downward) are assumed to continue; therefore, each hospital planning area's use rates are adjusted in proportion to the rate of change in use rates over the past ten years. The statewide or health planning region trend is used, whichever shows the slower change. (An alternate adjustment is used in a few HPAs where increasing reliance on health maintenance organizations complicates trend anlaysis.)

The trend-adjusted hospital use rates are applied to the projected future ("target year") population of each hospital planning area. This calculation produces a forecast of the number of patient-days of hospital care which the residents of each hospital planning area will use in the target year. However, these days of care will occur in a variety of hospitals, not only those hospitals located in the HPA where the individuals live. Expected patient-days of hospital care are redistributed to the planning areas where services are likely to be provided. In general, it is assumed that the same patterns of patient movement occurring in the base year will remain stable through the target year.

Finally, for each planning area where services will be provided, the forecasted number of patient days is converted to a forecasted need for hospital beds. Patient-days are divided by an occupancy standard calculated for each HPA based on the mixture of different hospital sizes in the area.

The psychiatric method really involves combining two different forecasts. The statewide forecast of short-stay psychiatric bed need is determined by applying a desired bed-to-population ratio to the expected population in the target year. This ratio, 13 beds per 100,000 residents, is a

normative standard, chosen by the SHCC in consultation with the state
Mental Health Division. The selection of this ratio is related to a
policy decision to encourage development of residential (nonhospital)
short-stay psychiatric programs.

The other component of the psychiatric bed method is a demand projection
for each health service area and county. It is derived using a method
analogous to the nonpsychiatric forecast method, except that there is
no attempt to adjust use rates in relation to trends. The results of
the demand projection are adjusted to match the statewide (target-
ratio) forecast. This way the statewide total of beds will observe the
desired ratio, while the distribution of beds throughout the state will
agree with observed patterns of service use and patient movement.

Both the psychiatric and nonpsychiatric methods result in baseline
forecasts of needed beds in a future target year. These baseline
figures can be adjusted subject to guidelines in the forecasting method
document.

The hospital bed need forecasting method, in its entirety, addresses
many detailed issues which cannot be adequately summarized here. A
glance at the detailed contents will help the reader to identify areas
of special interest.

This plan includes a considerable volume of changes in the hospital
forecasting methods guide. Many of the changes are editorial and
organizational. Some of the more important substantive changes are:

- Trend-adjustment of the hospital use rates used in nonpsychiatric
  forecasts (previously, use rates were assumed to remain constant
  from the base year to the target year);
- Use of a normative bed-to-population ratio in psychiatric forecasts
  (previously, the base year use rate was applied to target year
  population);

- Definite separation of the psychiatric forecast (previously
  unclear), and clarification of the relationship between overall
  forecasts and service- or age-specific forecasts (previously
  unstated and ambiguous);
- Statewide use of the same occupancy standards, related to hospital
  size (previously, no standards were stated for use in rural
  areas);
- Age-specific use rates for at least two age groups, 0-64 and 65+
  (previously, a single use rate was computed for residents of all
  ages and a separate adjustment was carried out in forecasting to
  estimate, based on national data, the effect of changes in the
  proportions of residents over and under 65).

c. CRITERIA AND STANDARDS FOR EVALUATION AND USE
OF METHOD

(1) Definitions

Should: The use of the term "should" in this document implies that there is an expectation and a probability that the particular criterion or standard will be carried out.

Shall connotes an absolute directive and an expectation that a standard definitely will be carried out.

Base year: The most recent year about which data is collected as the basis for a set of forecasts.

Target year: The future year for which patient days, populations and bed needs are forecasted.

Future bed capacity: Beds which will or could be available in the target year. See Hospital Forecasting Criterion 12.

Net bed need or unmet bed need: Forecasted bed need minus future bed capacity, for some target year.

Note: Additional relevant definitions are found in the Glossary to this plan.

(2) General Principles:

1. Forecasting involves both interpretation of trends and the application of judgment concerning the continuation or alteration of trends. All forecasts include such judgments.

2. Forecasting of need for services is not necessarily identical to forecasting of demand. Any need forecast which is not based on predicted demand must be based upon explicit normative statements about the appropriate level of a resource, which have been formally adopted by the health planning system.

(Explanation: The forecasting method for short-stay psychiatric hospital bed need incorporates elements of normative need. This principle establishes a policy base.)

3. In forecasting future use of hospital services, a clear distinction has to be made between what is, what will be, and what should be. Forecasts of what will be can be changed to reflect what should be only if there is an implementation strategy which realistically can accomplish that change.

4. Forecasts are not in themselves methods for eliminating shortages or surpluses of hospital services and facilities. Forecasts are evidence which can help in deciding whether shortages or surpluses

may develop. Given some evidence about the future, the health planning system has to decide whether it makes sense to try to change a potential surplus or shortage, has to decide whether it has the ability through some implementation strategy (e.g., the Certificate of Need process) to do so, and has to decide what type and degree of change it wants to accomplish.

5. The health planning system in the State of Washington does not have the ability to eliminate existing surpluses of capacity.

6. Hospitals within the state are encouraged to use this methodology. Of course, any hospital or other group within the state may challenge the methodology adopted by the planning system or the results of applying that methodology. Objections to forecasts or the forecasting methods should be stated as early in the planning process as possible, during the adjustment process at the latest.

7. Hospitals and the health planning system should jointly conduct the planning of hospital services in consultation with the Washington State Hospital Commission.

8. Hospitals are responsible for implementing specific services.

9. Starting in 1986 (using 1985 base year data)*, bed need forecasts should be prepared and adjusted at least every three years. The SHCC should decide annually if it is necessary to develop new forecasts in less than three years. This should be done only if it is determined that changes have occurred which would have a significant statewide impact on the forecasts.

   As part of its decision on the need for new forecasts, the SHCC should consider the percent deviation (plus or minus) from the old forecast which would result from using more recent data on population, use rates, etc. The new data must be for a full year (same quarters as used in computing the original forecast) - i.e., less than a year of data should be considered insufficient to justify a new forecast.

   If a new forecast is developed under this provision less than three years after the last full forecast/adjustment cycle, no changes should be made in the negotiated adjustment assumptions from the last full cycle.

---

*A baseline bed need forecast, which will not go through the adjustment process except for continuation of previously negotiated adjustment assumptions, will be prepared in 1985 or early 1986 using 1983 base year data. A 30-day period will be allowed after distribution of the baseline numbers for correction of any errors.

(3) Criteria and Standards

1. CRITERION: Planning for People

Hospital services and beds should be planned according to the needs of specific groups of people.

STANDARDS:

a. It is not appropriate to assume that the people within the areas use or should use the hospitals within the area, nor should they assume that hospitals in the area serve only the people in the area.

b. Hospital planning should be based on sound evidence about the actual patterns of use by the public. Since the public is free to choose physicians and hospitals regardless of location, plans for hospital services cannot assume that the people within a planning area use or should use only the hospitals within the area, nor should they assume that the hospitals in the area serve only the people in their area.

c. It is not necessary to assume that patterns of use, especially improper patterns of use, or lack of use, will continue. However, plans based on a change in forecasted use patterns should thoroughly document either why the patterns are expected to change or how the patterns will be made to change. In a case where a change in use patterns is assumed, both patient admission rates and lengths of stay should be examined.

d. To the degree that is practical, specific groups of people which use particular or special services not covered by service-specific or age-specific forecasts should have their need for beds calculated as a separate subset within overall forecasts (see Criterion 9).

e. Medical care organizations which serve a separate group of people, such as a Health Maintenance Organization or the Veterans Administration, should not assume that all of the needs of their people have to be met by separate services and facilities owned or controlled by those organizations.

2. CRITERION: Need for Multiple Criteria

Hospital bed need forecasts are only one aspect of planning hospital services for specific groups of people. Bed need forecasts by themselves should not be the only criterion used to decide whether a specific group of people or a specific institution should develop additional beds, services, or facilities. Even where the total bed supply serving a group of people or a planning area is adequate, it may be appropriate to allow an individual institution to expand.

STANDARDS:

a. The fact that a particular hospital has served a particular group of people in the past does not mean that the hospital will or should serve those people in the future. For a variety of reasons (e.g., the desire to develop a Health Maintenance Organization), the people may want to change the pattern of use.

b. Under certain conditions, institutions may be allowed to expand even though the bed need forecasts indicate that there are underutilized facilities in the area. The conditions might include the following:

- the proposed development would significantly improve the accessibility or acceptability of services for under-served groups; or

  the proposed development would allow expansion or maintenance of an institution which has staff who have greater training or skill, or which has a wider range of important services, or whose programs have evidence of better results than do neighboring and comparable institutions; or

- the proposed development would allow expansion of a crowded institution which has good cost, efficiency, or productivity measures of its performance while underutilized services are located in neighboring and comparable institutions with higher costs, less efficient operations or lower productivity.

In such cases, the benefits of expansion are judged to outweigh the potential costs of possible additional surplus.

c. Under certain conditions, existing institutions may be denied approval to expand facilities, beds, and inpatient services even though all facilities in an area are fully utilized. Some of these conditions might include the following:

- facilities in the area are not making maximum use of techniques and services which can increase the efficiency of the facilities; or

- project is not financially feasible, or

  it is determined that it is in the community's interest to develop an alternative type of service or facility rather than expand existing institutions; or

- use rates in the area are judged excessive.

In such cases, the benefits of denying development are judged to outweigh potential costs of possible service shortage.

d. The mere fact that a group of people has an unmet need for services or facilities does not mean that any particular hospital has a right to try to meet those needs. Hospitals, DSHS and State Health Coordinating Council should develop criteria, standards, and plans to guide decisions about which hospitals should serve unmet needs.

(Explanation: It is recognized that hospital bed need forecasting should not be the only criterion against which a project is evaluated. The financial feasibility, the proposed staffing, and the potential for cost containment of the project as well as those conditions listed above should all be taken into consideration.

In planning to meet the needs a group of people may have for services or facilities, consideration should be given to not only allopathic services, but to the special needs and circumstances of osteopathic hospitals and non-allopathic services. forms of health care should be discriminated against during the development of plans for needed services.)

3. CRITERION: Age/Sex Categories

For the group of people being considered, patient day forecasts should, to the extent to which it is practical and to which data is available, be calculated separately for those age and sex groups which have significantly different use rates.

STANDARD:

a. To the extent possible, patient day forecasts should be calculated separately or adjusted for the following:

. people age 0 through 14
. people age 15 through 64 (or people age 15 through 44 and 45 through 64).
. people age 65 or more
. women of childbearing age (age 15 through 44)
. for psychiatric services, ages 0-17, 18-64 and 65 or more.

(Explanation: Currently the age groups 0-64 are used in all forecasting. Additionally, the age groups 0-17 and 18-64 are differentiated in short-stay psychiatric forecasting, because psychiatric treatment programs for children and adolescents very often are separate from programs serving adults.)

4. CRITERION: Target Date

Because medical terminology and standards of practice change rapidly, because medical facilities and equipment become obsolete quickly, because communities and their goals change, and because, in general, long-range forecasts are unreliable, forecasts should go only as far into the future as needed to answer the type of policy question being asked.

STANDARDS:

a. For most purposes, bed projections should not be made for more than seven years into the future. Each time forecasts are revised, a forecast target date should be agreed upon by the health planning system.

   (Explanation: In the 1985 forecasting cycle, the target year is 1990.)

b. For major policy questions, such as whether a community should have a hospital or additional hospitals, long-range forecasts should be prepared. For long-range forecasts, the health planning system may determine that a different method is preferable to the one used for short-term purposes. Any alternative method should be reviewed publicly and be adopted by the SHCC.

5. CRITERION: Population Forecasts

The most accurate population forecasts available at the time of forecasting should be used.

STANDARDS:

a. Where future growth or decline of population may change significantly, ranges of projected population should be used. The health planning system should specify the most probable population estimate and should use it as the basis for bed forecasts.

b. Population forecasts prepared by the Office of Financial Management (OFM) of the State of Washington, including age and sex-specific forecasts, should be the basic forecasts used. Other local forecasts may be used to deal with small areas, provided that totals equal the OFM forecast at the statewide and county levels.

c. Hospitals may employ other more local forecasts (e.g., those produced by the councils of governments), if accurate, for specific service areas and negotiate with SHCC/DSHS in the development of forecasts for use in developing the hospitals' own plans. Use of population forecasts should be resolved during the adjustment process.

d. If OFM issues updated county-specific population forecasts between hospital forecasting cycles, and the health planning system determines that these forecasts differ significantly from the baseline population forecasts used in the most recent bed need forecasts, revised hospital forecasts should be produced using the new population figures even if a new baseline forecast would not be necessary under General Principle 9. All other hospital forecasting data and assumptions (e.g., patient origin, market share, use rates) shall be unchanged. The revised population figures (only) shall be subject to adjustment.

6. CRITERION: Hospital Utilization Rates

The health planning system should determine the most appropriate future utilization rates* for use in bed need forecasting. A range of rates may be identified, if appropriate, so long as there is no ambiguity about what rates will be used.

STANDARDS:

a. Use rates should be forecasted for each of the major services (adult medical/surgical, pediatrics, and obstetrics) and for other specific services as identified in Hospital Forecasting Criterion 10. It is assumed that the base year's utilization rate will be projected forward to the target date, subject to adjustment for age (all services), changes in fertility rates and obstetric use patterns (obstetrics), and to anticipated changes in policy.

However, a service's use rates may be forecasted to be higher or lower than in the base year if a specific analysis of past trends in admission and lengths of stay is conducted and the health planning system or hospital documents reasons for anticipated continuation in or change to such past trends.

b. Based on analysis of annual data, for trends in patient days, admissions and lengths of stay, the forecasted use rates for the target year shall be determined by adjusting the base year non-psychiatric use rate upward or downward to reflect the slope of the ten-year use rate trend line. The trend for statewide or regional changes in use rate shall be used, whichever trend is

---

*The utilization rate is the number of hospital patient days per 1000 population.

The adult medical/surgical utilization rate is the number of medical/surgical patient days per 1000 population age 15 and older.

The pediatric utilization rate is the number of pediatric patient days per 1000 population ages 0 through 14.

The obstetric utilization rate is the number of obstetric patient days per 1,000 female population ages 15 through 44.

less pronounced (that is, whichever trend would result in the least change from the base-year use rates). This adjustment shall be carried out only if it is judged that the use rate trend will continue in the same direction.

(Explanation: A different procedure is used in certain hospital planning areas with high HMO enrollment and HMO-owned/operated hospital facilities. See step-by-step method for overall (non-psychiatric) forecasts, in this Guide.)

STANDARD

c. No planning area's utilization rate for non-psychiatric (medical/surgical/obstetric/pediatric) services shall be forecast lower than the statewide age-adjusted use rate for HMO enrollees, unless that area's actual base-year use rate was that low.

> (Explanation: The procedures for the latest forecasting cycle specify that no hospital planning area shall have a forecasted 1990 use rate less than its actual 1983 use rate or the 1983 statewide hospital use rate for HMO enrollees, whichever is lower. This check is applied on an age-specific basis.)

> Note: It has been shown that there is some substitution effect between hospital and nursing home beds. Impacts should be carefully monitored in planning areas where the supply of one or both types of beds is being effectively constrained by the policies in this Plan.

7 CRITERION: Use of Planning Areas

Planning areas are tools for dividing the population of a large area into convenient geographic units practical for planning.

STANDARDS:

a. Planning area boundaries should be defined by the health planning system and reviewed by provider and consumer groups.

b. Planning areas should not, to the extent practical, divide communities which share a common set of interests. However, there are groups of people who make use of special health care services for whom it is sometimes not possible to create separate exclusive small geographic planning areas, such as Health Maintenance Organization enrollees, veterans, members of the armed forces, etc.

c. Planning area boundaries should be drawn so that it is possible to make reasonable population estimates and projections. This means that the boundaries should follow census tract, county, and state boundaries.

d. Planning areas may contain a number of hospitals, or no hospitals at all. A planning area which does contain one or more hospitals may not have available within its boundaries many of the services which its population needs and/or uses.

e. There will often be considerable overlap between the market or service areas of the hospitals and the planning areas in which those hospitals are located. Despite any overlap, planning areas for groups of people should be distinguished from market or service areas of hospitals and specific services.

f Planning areas for specific services should, if possible, be coterminous with the basic hospital planning areas. Planning areas for more specialized services (e.g., psychiatric units, burn centers, neonatal intensive care units, etc.) which SHCC, DSHS and hospitals have determined should be offered over a larger area or regionalized, should be composed of groups of the basic hospital planning areas.

8. **CRITERION**: Planning Area Hospital Bed Needs

The availability of hospital resources and the determination of resource requirements should be evaluated through an analysis of planning area bed needs.

STANDARDS:

a. DSHS should develop baseline patient day and bed need forecasts for each planning area, using the given hospital bed need forecasting method upon which appropriate adjustments for planning area bed needs can be made.

b. When necessary SHCC and DSHS in cooperation with area hospital councils, the Washington State Hospital Association, and hospitals within each planning area, should adjust the planning area baseline estimates using the given bed forecasting method to take into account mutually agreed upon or negotiated changes in population, use rates, market shares, out-of-area use, and/or upward revisions of the appropriate occupancy standards (as permitted in Hospital Standard 11.e). This adjustment process should ensure opportunity for participation and comment by the Hospital Commission, insurors, purchasers, labor and other interested parties.

c. Upon receipt of a new set of baseline forecasts (regular three year cycle), hospitals should present their recommended adjustments to the SHCC and DSHS and negotiate any differences in bed forecasts.

d. Separate planning area hospital bed need forecasts should be made in each planning area which contains both hospitals providing basic community-oriented services and hospitals providing region-

wide tertiary care services. The health planning system in consultation with affected hospitals should determine when and where these separate projections should be made.

(Explanation: Hospital patient day and bed need forecasts should be made for planning areas as a whole. These total forecasts would be made for planning areas not only with one facility, but also those with two, three, or more facilities. The baseline forecasts provide a common starting point for the analysis of planning area bed needs by the community, including consumers, planners, and providers.

Determining bed needs by planning area will foster an increasing shift toward thinking about the care needs of people within a community. It will also provide one starting point for long range and joint planning among the consumer, provider, and planning groups. While the SHCC and DSHS will provide the baseline patient day and bed need forecasts for each planning area, local councils and provider groups will have the opportunity to verify or suggest modification of these forecasts using the forecasting methodology. Where made, these changes might be the result of well-documented modifications to population estimates, use rates, market share, physician practice patterns, or out-of-area use.

Bed need forecasts for hospitals providing regional tertiary care services may need to be made separately from the forecasts for other hospitals in the planning area. These hospitals serve a relatively widespread clientele with a large proportion of their patients being drawn from outside of the planning area.)

9. **CRITERION:** Framework for Overall Forecasts and for Service Specific/Age Specific Forecasts

There is a distinction in bed need forecasting between services where the forecast is based at least in part on normative judgments about need, and those where the forecast is based exclusively on demand patterns and population changes. There also is a distinction between overall forecasts and sub-forecasts which are parts of an overall total.

STANDARDS:

a. The need for hospital services shall be forecast in two distinct parts: need for short-stay inpatient psychiatric services (partially based on normative need) and need for non-psychiatric hospital services.

b. Bed needs for non-psychiatric services, which are forecast on the basis of demand (utilization patterns) and population, shall be forecast as an aggregate. Specific service forecasts within this aggregate shall be treated as subsets of the total.

c. Unless otherwise explicitly stated in a service specific fore-
    casting method, all forecasts for specific hospital services are
    subsets of the total forecast for non-psychiatric services (i.e.,
    medical/surgical/obstetric/pediatric services).

    A finding of net need for a specific service does not by itself
    provide justification for adding beds to meet this need. Conver-
    sion of the use of beds in one or more hospitals within the
    planning area must be considered. Beds shall not ordinarily be
    added to meet a specific service need unless they also are needed
    to address a general unmet need for non-psychiatric hospital beds
    in the area.

d. Specific services which are not individually forecast shall be
    considered part of the total forecast for non-psychiatric services.
    If an applicant to develop such services proposes to construct new
    hospital beds, there must be net unmet need for these beds within
    the area's total forecast of medical/surgical/obstetric/pediatric
    bed need.

e. If age-specific service needs are separately forecast (e.g., need
    for short-stay psychiatric inpatient services for children and
    adolescents), these forecasts shall be interpreted as subsets of
    the total forecast for all ages. A finding of net need for a
    particular age group does not by itself provide sufficient
    justification for adding beds to meet the need.

f. In the event of conflicting evidence about bed needs from
    overall bed need forecasts and service specific (or age
    specific) sub-forecasts, the overall forecasts ordinarily
    shall be considered binding. The sub-forecasts should be
    reduced in the adjustment process, if necessary, to avoid an
    excessive shift of an area's hospital capacity from general
    medical/surgical/obstetric/pediatric use to specialized units.

        Explanation: It is theoretically possible for service
        specific and age specific sub-forecasts to add up to more
        than the total bed need for an area (overall forecast).
        This is true because occupancy standards have a different
        effect applied service-by-service than they have when
        applied overall at the planning area level. The overall
        occupancy standards used in forecasting (see Hospital
        Forecasting Standards 11.b. and 11.f) were chosen to
        allow sufficient leeway for hospitals to meet a variety
        of needs. Forecast need for a specific service therefore
        may overstate the number of beds which it is sensible to
        shift from general medical/surgical/obstetric/pediatric
        use to more specialized uses. The overall balance of
        general and specialized beds within an area is an appro-
        priate topic for adjustments (so long as total area bed
        need forecasts are not exceeded) and for selective growth/

selective use planning. Regionalization plans developed by
the health planning system for specific services also should
influence this balance in certain instances.

10. CRITERION: Service Specific Resource Requirements

Forecasts of hospital resource requirements should recogize that all
beds within a nospital or hospitals are not capable of providing nor
are they intended to provide similar services.

STANDARD

a.   The State Health Coordinating Council shall prepare service-
     specific baseline forecasts of patient days and bed needs for
     short-stay psychiatric hospital services. These forecasts are
     needed as guidance for review of Certificate of Need applications
     for addition, expansion or replacement of specific service units
     in hospitals.

     Except for psychiatric services, service-specific forecasts shall
     be subsets of the overall forecast for non-psychiatric (medical/
     surgical/obstetric/pediatric) services. As such, they shall not
     affect the calculation of the total non-psychiatric patient days
     and beds forecast for each planning area.

     (Explanation: Note that need for a specific service does
     not by itself address the question of whether beds should (or
     may) be added to meet this need. See Hospital Forecasting
     Criterion 9.

     Hospital resource requirements should be determined on a service/
     specific (e.g., medical/surgical, obstetric, psychiatric) basis.
     Many planning and certificate of need decisions require the
     knowledge of both service-specific capacity and future requirements.

     All decisions should recognize that beds, even those within a
     particular facility, and medical staffs may not be inter-changeable
     in the short term. For example, a patient in a medical/surgical
     unit probably could not be placed in an obstetric bed.

     Service specific forecasts could assist hospitals in developing
     long range plans. They may provide some guidance to a facility
     on the resources which may be required in the future. Because
     different services have different resource and personnel require-
     ments, an accurate assessment of future need is essential in
     planning for the development of an area's resources).

11. **CRITERION:** Occupancy Standards for Use in Forecasting

Hospital bed capacity should be utilized efficiently without compromising necessary access to service. Bed need forecasting methods should use occupancy standards chosen to achieve this dual goal.

STANDARD: Statewide occupancy expectations

a. Average annual occupancy rates for hospitals and specific services should not be less than:

- 75% statewide
- 75% for adult medical/surgical services statewide
- 55% for obstetric services statewide
- 55% for pediatric services statewide

STANDARD: Occupancy standards for individual facilities for use in forecasting

b. In developing baseline forecasts of future bed needs, the occupancy standards for existing hospitals in planning areas shall not be less than:

- 50% for hospitals with 1 through 49 beds.
- 65% for hospitals with 50 through 99 beds.
- 70% for hospitals with 100 through 199 beds.
- 75% for hospitals with 200 through 299 beds.
- 80% for hospitals with 300 beds or more.

(Explanation: These standards are for use in forecasting.)

STANDARD: Occupany standards for use in forecasting specific services

c. In developing baseline forecasts of future need for specific hospital services, the occupancy standards for specific services already existing in hospitals shall not be less than:

- 55% for services with 1 through 49 beds.
- 70% for services with 50 through 99 beds.
- 75% for services with 100 through 199 beds.
- 75% for services with 200 through 299 beds.
- 80% for services with 300 beds or more.

The minimum occupancy standards for some specific services may be higher. These are explictly stated as part of the service-specific forecasting methods (e.g., for short-stay psychiatric hospital services).

If forecasts are developed for alcoholism/substance abuse service bed needs, the same occupancy standards should be used as in short-stay psychiatric forecasts.

(Explanation: These minimum occupancy standards have not been changed since 1979. However, as of this plan edition, they are being applied to all planning areas, rather than only those in urban areas. Since the health planning system has responsibility to plan for specific services whether in urban or rural areas, occupancy standards must exist for forecasting use in all areas.)

STANDARD: Occupancy standards for use in resource forecasts

d. In evaluating the appropriate size (beds) for a proposed new facility or service, special facility-specific forecasts sometimes are needed. In these instances, forecasted volume (Average Daily Census, or ADC) is given and an appropriate bed complement must be determined. The following occupancy standards shall be used in these special resource forecasts.

    d.1. New facilities: For the purposes of making resource forecasts, occupancy rates for proposed new hospitals shall not be less than:

        . 50% for hospitals with an average daily census (ADC) of 25 or less.
        . 65% for hospitals with an ADC between 26 and 65.
        . 70% for hospitals with an ADC between 66 and 140.
        . 75% for hospitals with an ADC between 141 and 225.
        . 80% for hospitals with an ADC of 226 or more.

    d.2. New services in hospitals: For the purpose of making resource forecasts, occupancy rates for proposed new specific services should not be less than:

        . 55% for services with an ADC of 25 or less.
        . 70% for services with an ADC between 26 and 65.
        . 75% for services with an ADC between 66 and 140, and
        . 75% for services with an ADC between 141 and 225.
        . 80% for services with an ADC of 226 or more.

    For services which have higher occupancy standards (see Standard 11.c above), the higher occupancy standards shall be used, but shall be applied to ADC rather than to beds.

STANDARD:

e. SHCC and DSHS may negotiate appropriate occupancy standards for individual hospitals which are higher than the minimums presented in Standards 11.a, b, c and d above. Once developed, these shall be used in future baseline forecasts, as applicable.

STANDARD:

f. The occupancy standard applied to each planning area or service within each planning area shall be based, for forecasting purposes, on the current weighted average of the appropriate occupancy standards for each facility in the planning area. This is calculated as the sum, across all hospitals in the planning area, of each hospital's occupancy rate times that hospital's percentage of total beds in the area. Where a specific service is concerned, the weighted average for all applicable service units is determined (weighted by unit size).

(Explanation: There is no change in this method since 1979).

12. **CRITERION:** Bed Capacity

In determining the future bed capacity which will serve a community, the count should include all beds which will be available or could be available for patient use. The count should not include beds which physically could not be used, and beds which will be eliminated within the span of the forecasts.

STANDARDS:

a. The count of future bed capacity should separately identify:

beds which are currently licensed and physically could be set up without significant capital expenditure requiring new state approval;

(2) beds which do not physically exist but are authorized unless for some reason it seems certain those beds will never be built;

beds which are in the current license but physically could not be set up (e.g., beds which have been converted to other uses with no realistic chance they could be converted back to beds);

beds which will be eliminated;

b. Occupancy standards for forecasting are computed based on beds which are licensed and physically could be set up, plus beds which do not physically exist, but which are authorized.

c. SHCC and DSHS consulting with individual hospitals should decide what beds should be counted in what part of current and future bed counts (see 12.a(1) through 12.a.(4) above).

(Explanation: The count of future bed capacity should be used in conjunction with the hospital bed projections to determine future need. This count assists in the identification of areas with potential deficits or surpluses in the availability of resources.)

STANDARD

d. For specific service categories, future beds are those which
    could be set up in an existing service unit, plus those author-
    ized plus or minus any changes in service-specific capacity which
    do not require approval but which will occur prior to the target
    year. Definitions used in counting available beds are included
    in each service specific forecasting method.

    (Explanation: This definition is necessary because not all changes
    in specific service capacity are subject to review. Forecasted
    net need for beds in a service should incorporate the best estimate
    of future capacity in all units within the planning area.)

13. CRITERION: Allocations to Individual Hospitals

The allocation of utilization to individual hospitals should
be by a process which is reasonable, fair, and realistic.

STANDARD:

a. Calculations of the current "market penetration" by hospitals
    of one planning area into another planning area should be
    based on patient origin and destination data. Baseline
    forecasts of future utilization and bed needs generally should
    assume continuation of current market share patterns, subject
    to change if necessary during the formal adjustment process.

d. SPECIFIC METHODS

This section presents the detailed methods used to forecast hospital
bed needs.

(1) Determination of Forecasting Policies and Availability of
     Methods Detail.

     Policy decisions about how to forecast need for hospital resources
     are made by the State Health Coordinating Council, and adopted as
     part of the State Health Plan. However, there exists a level of
     technical detail which is administratively developed by SHCC staff,
     within the State Health Plan's policy framework.

     Detailed explanations of how each calculation is carried out,
     including identification of data sources, shall be available
     from SHCC staff (DSHS).

Changes in procedure may be made at the technical (staff) level only to improve technical methods within policies adopted by the SHCC, or to improve clarity, or to add information previously unavailable. Any change which is not consistent with SHCC-adopted policy requires formal SHCC action (an amendment to the State Health Plan).

(2) Method for Overall Baseline Forecast of Non-Psychiatric (Medical/ Surgical/Obstetric/Pediatric) Hospital Bed Needs.

Following is a step-by-step description of the method for forecasting the overall (aggregate) need for medical/surgical/ obstetric/pediatric hospital beds. Many elements are elaborated in the Hospital Bed Forecasting Standards.

1. Develop trend information on hospital utilization

STEP 1: Compile state historical utilization data (i.e., patient days within major service categories) for at least ten years preceding the base year.

STEP 2: Subtract psychiatric patients days from each year's historical data.

STEP 3: For each year, compute the statewide and HSA average use rates.

STEP 4: Using the ten-year history of use rates, compute the use rate trend line, and its slope, for each HSA and for the state as a whole.

2. Calculate baseline non-psychiatric bed need forecasts

STEP 5: Using the latest statewide patient origin study, allocate non-psychiatric patient days reported in hospitals back to the hospital planning areas where the patients live. (The psychiatric patient day data are used separately in the short-stay psychiatric hospital bed need forecasts.)

STEP 6: Compute each hospital planning area's use rate (excluding psychiatric services) for each of the age groups considered (at a minimum, ages 0-64 and 65+).

STEP 7A: Forecast each hospital planning area's use rates for the target year by "trend-adjusting" each age-specific use rate. The use rates are adjusted upward or downward in proportion to the slope of either the statewide ten-year use rate trend or the appropriate health planning region's ten year use rate trend, whichever trend would result in the smaller adjustment.

Each hospital planning area's trend-adjusted use rate for
every age group is tested against the statewide hospital
use rate for HMO enrollees in the same age group. The
trend-adjusted use rate is used in forecasting if it equals
or exceeds the statewide HMO enrollees' hospital use rate.
If not, forecasting will be done using the applicable
statewide HMO enrollees' use rate or the hospital planning
area's actual base-year use rate, whichever is lower.

STEP 7B: Alternate Adjustment: In lieu of Step 7A,
in those hospital planning areas where:

1. HMO enrollees make up a significant and increasing
    portion of the population;
2. HMO enrollees are expected to use HMO-owned and
    operated hospitals;
3. base year HMO enrollment and hospital use (i.e.,
    patient days) can be identified; and,
4. forecasts of the HMO future enrollment are made by
    or deemed reasonable by health planning system,

the following adjustment will be made instead of the
hospital use rate trend adjustment, provided, the
resultant hospital bed need forecast for the planning
area is less than the use rate trend-adjusted hospital
bed need forecast.

Step 7B.1: Subtract the forecasted HMO enrollment from
            the target year population.
Step 7B.2: Adjust the market shares of the hospital
            planning areas to exclude HMO hospitals.
Step 7B.3: Set the target year use rate equal to the
            hospital planning area's base year non-HMO use
            rate. The non-HMO use rate equals total patient
            days minus HMO patient days, divided by total
            population minus HMO enrollment.

(Explanation: The effect of HMOs' increasing market penetra-
tion and low hospital use rates in individual hospital
planning areas is difficult to separate from other factors
in the historical trends of declining area-wide use rates.
In those planning areas where this effect is likely to
continue, separate forecasting of HMO/non-HMO patient days
and beds is a more appropriate approach than the trend
adjustment used for other areas. Therefore, until data
become available which would allow a more exact analysis of
the trend components, the above special adjustment will be
used for those specific hospital planning areas. For the
1985 forecast cycle, the following hospital planning
areas meet the conditions of this adjustment: Southwest
Snohomish and North, East, Central, Southwest and Southeast
King).

STEP 8: Forecast non-psychiatric patient days for each hospital planning area by multiplying the area's trend-adjusted use rates for the age groups by the area's fore-casted population (in thousands) in each age group at the target year. Add patient days in each age group to determine total forecasted patient days.

STEP 9: Allocate the forecasted non-psychiatric patient days to the planning areas where services are expected to be provided in accordance with (a) the hospital market shares and (b) the percent of out-of-state use of Washington hospitals, both derived from the latest statewide patient origin study.

STEP 10: Applying weighted average occupancy standards, determine each planning area's non-psychiatric bed need. Calculate the weighted average occupancy standard as described in Hospital Forecasting Standard 11.f. This should be based on the total number of beds in each hospital (Standard 11.b), including any short-stay psychiatric beds in general acute-care hospitals. Psychiatric hospitals with no other services should be excluded from the occupancy calculation.

Explanation: Psychiatric beds in general acute-care hospitals are included in occupancy calculations. The occupancy standards in Standard 11.b were selected to allow sufficient leeway for hospitals to meet a variety of needs, including psychiatric, and these assumptions have been applied in the past to hospitals having psychiatric services as well as to those which do not.

3. Determine total baseline hospital bed need forecasts

STEP 11: To obtain a bed need forecast for all hospital services, including psychiatric, add the non-psychiatric bed need from step 10 above to the psychiatric inpatient bed need from step 11 of the short-stay psychiatric hospital bed need forecasting method.

Make Adjustments

STEP 12: Determine and carry out any necessary adjustments in population, use rates, market shares, out-of-area use and occupancy rates, following the guidelines in section IV of this Guide.

(Explanation: In applying this method in the 1985 and 1986 forecasting cycles, the age groups used throughout are 0-64 and 65+, except for the psychiatric bed need forecasts which consider ages 0-17, 18-64 and 65+.

The forecasting method assumes that out-of-state residents will continue to use the same percentage of each area's hospital services (patient days) as they did in the base year. Similarly, it assumes that Washington State residents will continue to seek care in areas outside the state to the same extent as in the base year. In some hospital planning areas these out-of-area use assumptions are quite significant and warrant careful consideration during the adjustment process).

Methods for Service-Specific Forecasts Within the Overall Non-Psychiatric Forecast

At present there are no formally approved statewide methods for forecasting service-specific components of the non-psychiatric forecast. It is anticipated that such methods will be developed in the future.

Short-Stay Psychiatric Bed Forecasting Method

(a)   INTRODUCTION

This section of the hospital forecasting guide provides a description of the Washington State Short-Stay Psychiatric Hospital Bed Need Forecasting Method. It is part of the adopted Hospital Bed Need Forecasting Method, while recognizing factors which are unique to psychiatric bed needs in hospitals.

The short-stay psychiatric hospital bed need forecasts are developed independent of other hospital bed need forecasts presented in the Washington State Hospital Bed Need Forecasting Method.

(b)   THE BED NEED FORECASTING PROCESS

There are three phases to the short-stay psychiatric bed need forecasting process. These three phases will allow a consistent forecasting method to be used across the state as well as allowing adjustments for local conditions and plans which could not be used statewide. The process also includes the development of selective growth policies within each health service area.

i.   The baseline forecasting phase - The state agency develops a set of baseline bed need forecasts. The forecasts are developed using a uniform data base and assumptions and are consistent with the adopted psychiatric method.

ii.   The adjustment and selective growth policy phase - The
      SHCC and the Mental Health Division work with interested
      parties including consumers and providers, and county
      governments, as appropriate, to note any adjustments (which
      must follow the adjustment guidelines of this plan). The
      adjustments should reflect local conditions and plans.

iii. The finalized forecasts phase - Once all Health Systems
      Agency adjustments have been reviewed and found to conform
      with the adjustment guidelines and selective growth policies
      developed, the state agency releases a finalized set of
      forecasts which are to be used in reviews, in developing
      future plans and for inclusion in the State Health Plan.

Each of these phases has a number of underlying assumptions and
guidelines which are described in criteria and standards. Some
of the criteria and standards apply to the methodology as a
whole, some to individual phases, and others to specific steps
within the projection method. Except where noted herein, criteria
and standards contained in the Washington State Hospital Bed Need
Forecasting Method are applicable to the psychiatric bed forecasts.

(c)   DESCRIPTION OF THE STEP-BY-STEP METHOD

The method presented here shall be used to determine baseline
short-stay psychiatric hospital bed needs. This method should be
used in the context of the assumptions and guidance outlined in
the criteria and standards. The forecasts should then proceed
through the adjustments phase of the forecasting process.
Any adjustments considered must be applicable to particular steps
within this method. The adjustments phase is further described
in Section IV.B of this hospital forecasting guide.

Summary of method: Forecasts for short-stay psychiatric hospital
bed need are calculated so that the total short-stay beds avail-
able for state residents would equal a desired statewide normative
bed-to-population ratio of 13 beds per 100,000 persons. It is
assumed that federal hospital use will continue current demand
patterns (use rate, patient origin), while needs for short stay
psychiatric inpatient services in community and state hospitals
are adjusted from base year use rates to achieve the desired
overall bed target.

Hospital psychiatric bed need is forecasted for each mental
health planning area (counties, with the exception of dual-county
areas: Chelan/Douglas, Benton/Franklin and Thurston/Mason). The
underlying demand forecasts (before adjustment to the target bed

ratio) are based upon age-specific use rates (for ages 0-17, 18-64 and 65+) and county market shares from the base-year patient origin study. The patient origin data base includes all discharges from community hospitals with a psychiatric primary diagnosis; all stays of 30 days or less in state mental hospitals (excluding criminal and sexual psychopath commitments); and all psychiatric discharges from federal (VA and military) hospitals with length of stay of 30 days or less. Group Health enrollees are included.

Forecast Based on Current Demand Patterns

Step 1: Using the latest patient origin data and Division of Mental Health-provided state mental hospital discharge data, allocate patient days (PDs) generated in each county's hospitals back to the county where the patient lives.

Step 2: Compute each county's age specific use rates (ages 0-17, 18-64 and 65+) by dividing the PDs generated by each age group by that age group's base year population.

Step 3: Assuming that each county's residents' demand for short stay psychiatric hospital services remains constant, calculate the number of PDs that would be generated by the residents of each county in the target year by multiplying each county's age specific use rates by its projected population in each age group. Total PDs equal the sum of PDs for the three age groups.

Step 4: Using the same patient origin data used in Step 1, and using the projected PDs from Step 3:

a. Calculate the number of PDs which would be generated in each county's hospitals, in the target year, based upon the market shares for hospitals in that county;

b. Calculate the number of PDs which would be generated in the state hospitals, in the target year, based upon those hospitals' market shares; and

c. Calculate the number of PDs which would be generated in the federal hospitals, in the target year, based upon those hospitals' market shares.

Step 5: Calculate the projected average daily census (ADC) for each county's non-governmental hospitals and for the state and federal hospitals by dividing the number of PDs which would be generated in each county and each government hospital (from Step 4) by 365.

Step 6: Calculate the counties' and the state and federal hospitals' demand for beds in the target year by dividing their ADCs (from Step 5) by an appropriate occupancy standard:

a. For counties or state/federal hospitals with a short stay psychiatric ADC of 10 or less, the occupancy standard is 70 percent;

b. For counties or state/federal hospitals with a short stay psychiatric ADC of 11 or more, the occupancy standard is 85 percent.

> Note: These demand projections do not include demand by out-of-state residents. This is corrected in Step 10

Adjustment of Demand Forecast to Desired Target Bed-to-Population Ratio

Step 7: Calculate the statewide short stay psychiatric hospital bed supply needed in order to achieve the desired normative bed-to-population ratio of 13 beds per 100,000 persons in the target year by multiplyng the projected statewide population in the target year by 13 and dividing the product by 100,000.

Step 8: Subtract from the statewide normative bed need (calculated in Step 7) those beds projected as needed in federal hospitals (calculated in Step 6). The remainder is statewide normative need for short stay psychiatric beds in non-federal hospitals.

Step 9: Calculate a factor to adjust statewide demand for non-federal beds to match the statewide normative need for such beds. This adjustment factor equals the remainder from Step 8 (statewide normative bed need for non-federal hospital beds) divided by the projected demand for beds in non-governmental hospitals and state hospitals (from Step 6).

Step 10: Using patient origin data, adjust each county's projected demand for non-governmental beds (Step 6) to account for patient flow into that county from out-of-state. It is assumed that the percentage of out-of-state use (PDs) in the hospitals in each mental health planning area will remain constant.

Step 11: Calculate each county's normative adjusted need for non-governmental hospital beds for short stay psychiatric services by multiplying the county's unadjusted demand for non-governmental beds (Step 10) by the normative adjustment factor calculated in Step 9.

> Note: This forecast method assumes that federal hospitals and state mental hospitals will maintain sufficient short-stay psychiatric capacity to meet their share of total short-stay need. Federal hospitals are assumed to maintain their base year use rate and patient origin patterns. The state mental hospitals' short-stay use rates are assumed to decline slightly (by the same percentage as community hospital use rates are assumed to decline; see Steps 9 and

11), as a result of expanded short stay residential programs
The ability of federal and state hospitals to provide these
service levels (ADCs) will be verified as part of the
forecast adjustment process.

Step 12: Each county's net need for non-governmental short-
stay psychiatric hospital beds is equal to the county's
adjusted non-governmental bed need (from Step 11) minus the
county's future non-governmental bed supply (as defined in
Hospital Forecasting Criterion 12.d). Non-governmental
short-stay psychiatric beds are those identified in Short
Stay Psychiatric Services section of this plan.

(d) CRITERIA AND STANDARDS

The primary policy guidance for this forecasting method is Short Stay
Psychiatric Services Section of the Plan. Other applicable standards
are found in the general criteria and standards for hospital bed need
forecasting, in the Guidelines for Adjusting Psychiatric Bed Need
Forecasts and below.

General Criteria and Standards for Psychiatric Forecasting

The following criteria (and related standards) have broad signi-
ficance beyond any single phase of the psychiatric forecasting
method.

1. Planning Services for the Population

    Short-stay inpatient psychiatric services should be planned
    on the basis of the needs of the population.

    a. Standard. The need for short-stay psychiatric in-
        patient/residential resources is specified in Planning
        and Review Policy 3.3.2.4 of the State Health Plan.

    b. Standard. In areas where the state agency (Mental
        Health Division) projects a change in the patterns of
        use due to state policy initiatives, interested agencies
        of the affected areas should provide a review and comment
        on the projected impact of policy initiatives. After
        analysis of comments, the state agency should provide the
        final decisions on the projected impact of the policies
        used in baseline bed need forecasts.

    c. Standard. To the degree to which it is practical,
        specific groups of people which use special services or
        facilities should have their needs for beds calculated
        separately through the use of selective growth policies.
        When selective growth policies have been applied, the
        total number of beds forecasted as needed must sum to
        no more than the total number forecasted in the finalized

forecast phase. Special subgroups should include children adolescents, adults, involuntary, and voluntary patients, to the extent that separate facilities or programs are needed to serve these groups. (See Selective Growth Policies).

2. Areas for Planning Services

   a. Standard. The planning area for short-stay psychiatric hospital services is the county, with the exception of formal multi-county mental health authorities noted in short-stay psychiatric services section of this Plan.

Criteria and Standards for the Psychiatric Baseline Forecasting Phase

3. Psychiatric Use Rate

   Forecasting of the need for psychiatric service resources should be based upon the best estimation of the appropriate utilization of those resources.

4. Occupancy Standard for Residential Programs

   a. Interim standard: For forecasting purposes, the occupancy standard for short-stay psychiatric residential programs shall be 85 percent (county-wide weighted average for all residential programs). This will be changed if necessary based on experience with the program.

Criteria and Standards for the Adjustments and Selective Growth Policy Phase of Short-Stay Psychiatric Forecasting

5. Documented Use Rate Variations

   Short-stay psychiatric hospital resource need forecasts should reflect current and proposed federal and state initiatives and policies which would result in changes in the use rate of the population.

   a. Standard. The Mental Health Division should, at least biennially, list federal and state initiatives where such a change is documentable and quantify the impact of such initiatives. The State Health Coordinating Council in consultation with the state agency should make final decisions on the appropriateness and validity of proposed revisions.

   b. Standard. All forecasts incorporating impacts of state and federal policies and initiatives should be reevaluated as part of each full forecast/adjustment cycle to ascertain the effectiveness, feasibility, and appropriateness of

those policies and initiatives. The projected impacts of the policies and initiatives should also be re-evaluated to determine accuracy. Policies and initiatives which are no longer valid should be factored out of the forecasts. More frequent re-evaluation may be undertaken if justified based on General Principle 9 in this guide.

c. Standard. Under the auspices of the SHCC and DSHS hospitals and other interested parties within each planning area should jointly adjust, if necessary, the baseline forecasts to account for local (nonpolicy) impacts. All adjustments to population, use rates, market shares, and out-of-area use should be well documented. Guidelines for local adjustments are contained in Sections IV.A and IV.B of this forecasting guide.

d. Standard. Adjustments to the baseline forecasts should include consideration and analysis of the impacts on the utilization or potential utilization of psychiatric services by the under- and inappropriately served population in all short-stay service settings.

6. Psychiatric Service Selective Growth Policies

Psychiatric service selective growth policies should be developed.

(Explanation: There is a need for a selective growth policy for hospital inpatient psychiatric services which outlines the placement of beds within mental helath planning areas, the number of beds to be placed in hospitals, the levels of psychiatric service to be provided by the various hospitals, and the population groups to be served by the hospital psychiatric beds. Selective growth policies should be developed as part of the adjustments phase of the forecasting method).

a. Standard. Selective growth policies should reflect local circumstances and values toward acute inpatient/residential psychiatric care.

b. Standard. During and after analysis of federal and state policies and proposed policies and adjustments in the adjustments phase of the method, selective growth policies should define:

(1) the placement of short-stay inpatient/residential beds in the following types of facilities:

hospitals with or without designated psychiatric units,
free-standing psychiatric hospitals,
nursing homes,

boarding homes,
other residential living sitautions.

(2) the location of short-stay hospital psychiatric beds within mental health planning areas.

(3) the relative priority and numbers of hospital psychiatric beds needed to provide service of the following types:

beds needed to serve
(i) voluntary commitments,
(ii) involuntary commitments;

beds needed for population groups
(i) children,
(ii) adolescents,
(iii) adults (ages 20 through 64),
(iv) elderly (ages 65 and over);

(c) beds in facilities providing multiple levels and types of mental health care and having formal linkages with other community services providing less intensive care.

(4) terms governing the meeting of priority needs (e.g., circumstances under which lower priority needs should be approved in the absence of competing applications for higher priority beds). These terms should include the meeting of needs through both hospitals and alternative settings.

c. Standard. Resource availability or limitations for inpatient psychiatric services should be considered in the development of selectie growth policies.

d. Standard. Selective growth policies should indicate conditions under which (1) institutions could be allowed to expand or establish facilities, beds, or services even though forecasts show that there would be underutilized resources in the area, and (2) institutions could be denied approval to expand or establish facilities, beds, or services even though there may be a demonstrated need for such facilities, beds, or services.

e. Standard: If there is lack of evidence of development of short-stay psychiatric residential programs, a bed allocation plan may allow for short-stay psychiatric hospital beds exceeding the normative adjusted bed need forecast (from Step 11 of the Short Stay Psychiatric Hospital Bed Forecasting Method) but not exceeding the demand for beds using unadjusted base-year psychiatric use rates (from Step 6 of this method).

e. GUIDELINES FOR ADJUSTING FORECASTS

(1) General Adjustment Guidelines

INTRODUCTION

This section serves to detail the types of adjustments which may apply to the baseline hospital patient day forecasts and outline the documentation which would be required to make these adjustments. The factors discussed here should be considered when adjusting the baseline patient day forecasts. Any adjustments should be the result of negotiations between the hospitals and DSHS, with opportunity for participation and comment by the Hospital Commission, insurors, purchasers, labor and other interested parties.

The discussion of adjustment factors is organized into the four components influencing total patient days. These factors are:

> population
> use rate
> market share
> out-of-area use

POPULATION

There are three population components to be considered in analyzing the affects of population on total patient days - the planning area population, the projected subscriber population using a Health Maintenance Organization (HMO) hospital, or the projected federal population. Changes in any of these components could affect the population forecasts used to calculate patient days. Each of these changes is discussed below.

Factors Affecting Population

1. Changes in the Projected Planning Area Population:

    Population projections are based on a number of assumptions regarding net migration, fertility rates and mortality rates. A change in any of these factors would therefore affect the projected planning area population.

    For example, land use policies designed to strictly control the growth of rural areas or fuel shortages would probably decrease migration to rural areas. This situation would result in an increase in the projected population of urban planning areas.

2. **Changes in the Projected Planning Area Subscriber Population Using an HMO Hospital:**

   HMO population forecasts for a geographic area are usually based on historic trends and the HMO's growth policy. However opening a new clinic or hospital in an area might increase an HMO's enrollment faster than anticipated and decrease the population projected to use community hospitals. If a ceiling on HMO penetration in ar :rea were reached, the HMO enrollment might not grow as fast as anticipated. This situation would increase the population projected to use community hospitals.

3. **Changes in the Projected Planning Area Population using Federal Hospitals:**

   Currently, there is some difficulty in obtaining precise data on the number of persons using VA and military hospitals, particularly on a planning area basis. However, even if the population using federal hospitals is not subtracted, changes in this population will affect the number of persons using community hospitals. For example, an expansion in the number of persons eligible for services at a VA Hospital could increase the population using federal hospitals and decrease the population using community hospitals. However, elimination of obstetric services at a military hospital would increase the projected population using community hospitals for this service.

Documentation for Adjusting Population Estimates and Projections

In order to adjust a population forecast, it is important to first establish that the initial method of projecting the population does not account for the anticipated change. If it does not, then it is important to find a substitute population projection which better explains the factors affecting population in an area.

Similarly, documenting that the number of enrollees using an HMO hospital in an area will be different from that projected by the HMO must be based on evidence of changes in the assumptions underlying the HMO projection. That is, it would be necessary to cite the reaons why the HMO enrollment in an area is not expected to grow according to historic trends.

Documenting changes in the federal population requires information from the military or the Veterans Administration on expected changes in eligibility requirements and/or expected changes in covered services. It is also important to establish that this is a permanent change rather than a temporary one in order to document the need to adjust the population component of the patient day projections.

USE RATE

Use rate is defined as the rate at which residents of an area use inpatient hospital services and is expressed as the number of patient days per 1,000 population. Because patient days are determined by the number of admissions and length of stay, changes in either of these variables would affect use rate.

A change in the use rate will usually change the total number of patient days which planning area residents spend at all hospitals, not just at hospitals within their own planning area. Many changes affect both use rate and market share. The six factors discussed below have a significnat impact on use rate. Factors affecting market share are discussed in the next section of this guide.

Factors Affecting Use Rate

1. **Demographic Changes in the Planning Area Population:**

    When the composition of a planning area's population changes, this is likely to result in a change in the rate at which area residents use hospital services. For example, if the average age of an area's population is increasing, both length of stay and the number of admissions are likely to increase, resulting in an increase in the area's use rate.

2. **Changes in Provider Practice Patterns:**

    Changes in the way medicine is practiced would affect the rate at which residents of an area use inpatient services. Several types of changes in provider practice patterns may occur:

    a. **Inpatient to Outpatient Services or Vice Versa:**

        For example, the trend toward doing more surgery on an out-patient basis has decreased inpatient use rates.

    b. **Develoment of New Program:**

        For example, the development of a home-based hospice program might result in more terminally ill persons receiving care at home and decrease hospital use rates.

    c. **Changes in Diagnostic Technology:**

        For example, the extent to which CT scans reduce the need for exploratory surgery would decrease use rates.

----

d. Changes in Economic Access:

For example, changes in third party reimbursement patterns or adoption of new health insurance programs may alter existing use rates.

5. Changes in Government Regulations:

Several government regulatory programs are aimed at decreasing hospital use, primarily by decreasing the number of admissions and the length of stay. The principal example is the peer review program (PRO-W) which is intended to decrease hospital use by federally-funded patients.

6. Changes in Preventive Care Programs:

The development of new or the expansion of existing preventive care programs could reduce the number of inpatient days and decrease use rates. For example, implementation of a widespread blood pressure detection program is presumed to result in the prevention of heart attacks and therefore to decrease hospital use rates.

Documentation for Adjusting Use Rate

Before adjusting use rates it is necessary to document that there has been a change in the way persons use hospital services, not just a change in the use of one hospital.

To justify the adjustment of use rates, it is first necessary to demonstrate changes in a hospital's admissions and/or length of stay. If the number of admissions from an area is observed to be increasing, it is necessary to establish that this increase is greater than the projected population increase. If it is, an explanation for the increase needs to be found among the factors affecting use rate. For example, one explanation might be that the increased admissions are due to the recent expansion of coverage for inpatient alcoholism services by major employers in the area (factor #4) and to a change in consumer attitudes toward alcoholism treatment (factor #3).

A second way of justifying the adjustment of use rates is by documenting a change in the factors affecting use rate. Based on data which show that elderly persons use hospital services at five times the rate of non-elderly persons, planning area use rates may be adjusted to reflect expected changes in the proportion of elderly persons residing in each area.*

*Note that age-specific use rates are used in most baseline forecasting methods, greatly reducing the need for additional age-related use rate adjustments.

It is important to note that it is particularly difficult to document the impact of changes in accessibility on use rate, due to the fact that unmet needs must first be demonstrated. For example, in order to argue that the closure of a hospital is going to decrease an area's use rate, it must be shown that persons formerly served by the closed hospital will not seek care at other hospitals.

A final way of justifying the adjustment of use rates is by using data and information gained from the experience of other areas. This is particularly useful when arguing that a trend will end. For example, if an area's declining use rate is due to a downward trend in a length of stay, it may be presumed that this trend will continue unless the experience of other areas indicates that the length of stay will not fall below a certain minimum level.

MARKET SHARE

Market share is defined as the portion of a population's inpatient days which are met by a hospital or a group of hospitals. Any increase in the market share of one hospital, therefore, reflects an equal decrease in the market share of other hospitals.

A hospital's market share is determined by a number of circumstances over which the hospital has varying degrees of control. For example, a hospital usually cannot change the number of other hospitals which locate in the area. However, a hospital can determine its role, service mix, management style, and efficiency which when taken together affect the hospital's general attractiveness to physicians and the community. Hospitals consequently can alter their competitive position and thereby increase or decrease their market share. Six factors affecting market share are identified below.

Factors Affecting Market Share

1. Demographic Changes in the Population:

    Changes in the composition of an area's population will affect area hospitals' market share of inpatient days just as it will affect use rates. This characteristic results from some socio-economic groups using hospital services within the area more than do the general population. Similarly, other groups are more likely to go out-of-area for hospital services. For example, patient origin studies indicate the elderly are more likely to "stay at home" for hospital services. Thus, if the proportion of elderly persons in a planning area increases, the result may be an increased market share for local hospitals.

2. Changes in the Number and Types of Physicians in a Planning Area:

    The number and types of physicians in a community determines the size of local hospitals' physician referral base. The addition of

new physicians to the area may reduce the need of local residents to seek care out-of-area and should increase the local market share of the hospitals in the area.

3. Changes in Hospital Services:

    Similarly, the addition of new types of hospital services reduces the need for local residents to seek care out of the area. For example, the development of a rehabilitation service at an area hospital will probably decrease the number of area residents going to out-of-area hospitals for this service and will increase the local hospital's market share of area residents.

4. Changes in Hospital Capacity:

    A hospital's ability to treat people is limited by its capacity. An increase in local capacity can increase local hospitals' market share if some residents have been going out of the area during peak capacity situations.

    Changes in capacity can be in the form of new beds, a change in room mix (i.e., relative number of single to multiple bedrooms) or in general operating efficiency.

5. Changes in a Hospital's Attractiveness to Practitioners:

    A hospital's style of operation and resources affect its attractiveness to practitioners. These are characteristics over which hospitals have a fair degree of control, and include:

    available services;

    proximity to physicians' offices;

    hospital's compatibility with physician treatment style;

    support services within hospital;

    efficiency of hospital;

    restrictions on practice (e.g., utilization review, bylaws, requirements for staff privileges), and

    physical plant.

    To the extent that the attractiveness of a hospital changes and physicians admit patients who were previously hospitalized elsewhere, market share will be increased.

6. **Changes in Consumers/Purchasers' Preferences for Hospital:**

Although physician preference has been the primary determinant, consumers and, to an even greater extent, third party payers are likely to increase their role in deciding where acute care is purchased. In the near future, third party payers and consumers are likely to give greater attention to hospital efficiency and charges. Further, consumers are increasingly becoming interested in the hospital's general approach to care, responsiveness to patient/community desires, location, and physical plant.

For example, in some parts of the country, Blue Cross has issued guidelines that will only permit reimbursement for open heart surgery at hospitals meeting minimum volume standards. This restriction will probably decrease the market share of hospitals which do not meet these standards.

7. **Small Sample Problem with Market Share Data:**

A factor which needs to be considered in examining market shares is whether the sample from which a hospital's market share was determined is of sufficient size to not be distorted by chance events. Thus, it is important to examine the base data to ensure that random events during the sample period did not seriously affect the market share conclusion. For example, if a major accident results in a large number of residents being hospitalized out of the area during the same period, the study data would not accurately represent local hospitals' actual market share.

Documentation for Adjusting Market Share

The best justification of the need to adjust market share is an observed change in a hospital's market share over time. This type of documentation is only available through an areawide patient origin study.

If a hospital wants to document that this observed change indicates a trend which can be expected to continue, it is also necessary to explain the factors which brought the change. For example, if this increase was due to an increase in the number and types of physicians in the area (factor #2), it is necessary to document that the number and types of physicians in the community is expected to continue to increase and that area residents who were previously going out of the area for physician services are not staying at home. Thus, it is also important to indicate where these patients were previously going and which hospital's market share should be adjusted downward.

It is more difficult to document the need to adjust market share where the changes have not yet been observed. Unobserved changes should be discussed in terms of changes in the hospital's competitive position either as instigated by the hospital or as the result of changes in the competitive position of other hospitals.

Documentation should focus on changes in the number and types of physicians in the community or on the hospital's staff, and on changes in the hospital's service mix, capacity, and attractivenss to residents and third party payers.

An additional method of documenting the need to adjust market share is by obtaining verification from other hospitals that their market share of patients from a particular area is decreasing. This might occur, for example, in an instance whre a referral hospital is near capacity and chooses to send out-of-area patients back to their home community for part of their hospital stay.

The weakest case for the need to adjust market share is a description of a hospital's marketing strategy to improve its attractiveness to physicians, third party payers, and the community. Although it is important to include this type of documentation, it is not enough to substantiate the need for a major expansion program.

Finally, it should be noted that the best way for a hospital-based HMO to document changes in market share is by using actual enrollment figures.

OUT OF AREA USE

Out-of-area use is defined as the number of days spent at planning area hospitals by persons residing outside the planning area. There are two types of out-of-area use: (1) use of planning area hospitals by persons who do not reside in the planning area but do reside within the health planning region, and (2) use of planning area hospitals by persons who do not reside within the health planning region. In the first case, out-of-area use is calculated by multiplying the planning area hospitals' market share of the other planning area by the other area's projected population. Thus, the computation of out-of-area use already takes into consideration any changes in use due to changes in population.

It should also be noted that out-of-area use includes both random use by visitors to an area and non-random use by out-of-area persons who are referred to or choose to use area hospitals. The first three factors discussed below affect non-random use; the fourth affects random use.

Factors Affecting Out-of-Area Use

1. Factors Affecting Market Share (See previous section)

   Most of the factors which affect a hospital's market share of planning area residents.could also affect its market share of out-of-area residents. For example, a change in hospital services such as the development of a rehabilitation service might attract out-of-area residents as well as area residents.

2. Changes in the Competitive Position of Hospitals in Other Planning Areas:

   Just as initiatives area hospitals take may increase their market share of out-of-area residents, initiatives out-of-area hospitals take may decrease area hospitals' attractiveness to out-of-area patients. For example, the development of a rehabilitation service in a hospital in another planning area might decrease out-of-area use of area hospitals.

3. Changes in Physician Referral Patterns:

   Physician referrals are responsible for much of the use of area hospitals by out-of-area residents. Changes in physician referral patterns will, therefore, affect out-of-area use. For example, the development of an affiliation agreement between an urban and rural hospital would probably result in more referrals to the urban hospital and thereby increase its out-of-area use.

4. Changes in Visits to the Area by Out-of-Area Residents:

   Changes in the volume of visits to an area can influence the number of patient days generated on a random basis by persons from outside the area. For example, the development of a new recreational facility in an area may increase the number of tourists using local hospitals. Out-of-area use of local hospitals would also be expected to increase if there were an increase in the number of migrant workers coming to the area.

Documentation for Adjusting Out-of-Area Use

The best documentation of the need to adjust out-of-area use is an observed change in a hospital's market share of out-of-area patients. For persons residing outside the health planning region, this documentation can be provided by a hospital's own patient origin data. For persons residing in other planning areas within the region, the areawide patient origin study is needed to document this change and to provide the information necessary to adjust the market share of other hospitals within the region. In addition, this documentation of an observed change in a hospital's market share of out-of-area patients should be accompanied by a description of the factors which have caused the change and of the reasons why this trend is likely to continue.

Changes in out-of-area use which are anticipated but which have not yet been observed are more difficult to document. Unobserved changes should be discussed in terms of changes in a hospital's competitive position or in physician referral patterns.

(2)   Psychiatric Bed Need Forecast Adjustments

This section presents guidelines as to the types of adjustments that
may be applied to the baseline short-stay psychiatric hospital bed
need forecasts and outlines the documentation needed to justify any
adjustments. Any adjustments should occur during the the negotia-
tions/adjustments phase and should be the result of discussions
between community hospitals and DSHS.

These adjustment guidelines are organized into the four components
influencing total patient days. These factors are:

> population
> use rate
> - influence of state and federal policy
> - availability of short-stay psychiatric services (beds) in
>   other settings
> - other
>
> market share
> out-of-area use

1. Population

Factors affecting population are covered in Section IV.A. of
this Guide.

2. Use Rate

a. Changes in federal or state policy (adjustments to steps
    4c, 5 and 6 of the step-by-step method).

Any changes in programs or regulations will likely affect
admission rates and average length of stay. These program
changes could either increase or decrease the utilization of
inpatient psychiatric services. Examples of programs and
their intended effects are listed below:

policies aimed at moving patients out of the state
hospitals - these programs would tend to increase the
utilization of community hospitals.

development of short-stay psychiatric residential programs
and other alternative services (such as emergency shelters,
improved nursing home care for the mentally ill, and
enhancement of the CCF program) would tend to decrease
the hospital use rates. Budget restrictions or restric-
tive program changes in these areas would tend to increase
the hospital use rate.

programs involving improved preplacement screening, discharge planning, and case management should tend to decrease to hospital use rate. Impacts here, however, depend heavily on placement criteria and on the availability of community services which can serve as an alternative to hospitalization.

programs promoting the use of mental health services and/or improving casefinding and general community resources may tend to increase the use rate. For example, an intensive program aimed at mentally ill children may increase the very low hospital use rate for persons in that age group.

changes in the involuntary treatment laws may either increase or decrease the use rate depending upon the nature of the statutory change.

changes in the state and federal budget will have a variety of impacts. Copayment increases in the Medicaid program may tend to decrease the use rate. Reductions in the mental health program budget, however, may tend to increase the use rate.

Documentation. Before adjusting use rates, justification of a change or expected change in use rates as a result of the initiation of a program should be provided. The mere desire to initiate a program or produce an intended effect is not sufficient to justify an adjustment of use rates. Documentation of a change should include and be based upon two factors:

evidence that a program will be initiated, continued, revised, etc. The program must have a budget, staff, appropriate commitments, or other resources sufficient to demonstrate that the proposed change will actually occur.

effects of the program. Documentation should quantify the expected effects of program initiation or change. Adjustments should be based on past experience, pilot studies, follow-up research, or analysis of the effects of similar programs in other states.

b. Availability of psychiatric services in other settings (adjustment to steps 4b, 4c, 5 and 6). The planned or future availability of short-stay psychiatric services in settings other than a hospital will likely affect utilization of these services in the hospital. Patients who may have used services at the hospital in the past may instead seek services at the other setting. In this instance, hospital utilization may decrease in the future, and a demand-based method would overestimate the need for hospital beds.

In some areas, the addition of short-stay psychiatric services in alternative settings may not decrease utilization of hospital services. Instead, the additional services may pick up much of the latent demand for an area which previously had a substantially depressed use rate.

Documentation. See a. above

c. Local factors affecting the use rate. These factors are addressed in detail elsewhere in this plan.

All of these adjustment factors are addressed in detail in earlier in this plan. Special attention should be given to market share changes for psychiatric services since the opening, closing, or expansion of a facility will tend to have a greater effect for this service than for most other hospital services.

4. Out-of-Area Use

Addressed in detail in elsewhere in this plan