

Department of Health  
Hospice Numeric Need Methodology

Step 1. Calculate the following four statewide predicted hospice use rates using CMS and department of health data or other available data sources.									
(i) The predicted percentage of cancer patients sixty-five and over who will use hospice services. This percentage is calculated by dividing the average number of hospice admissions over the last three years for patients the age of sixty-five and over with cancer by the average number of past three years statewide total deaths sixty-five and over from cancer.									
(ii) The predicted percentage of cancer patients under sixty-five who will use hospice services. This percentage is calculated by dividing the average number of hospice admissions over the last three years for patients under the age of sixty-five with cancer by the current statewide total of deaths under sixty-five with cancer.									
(iii) The predicted percentage of noncancer patients sixty-five and over who will use hospice services. This percentage is calculated by dividing the average number of hospice admissions over the last three years for patients age sixty-five and over with diagnoses other than cancer by the current statewide total of deaths over sixty-five with diagnoses other than cancer.									
(iv) The predicted percentage of noncancer patients under sixty-five who will use hospice services. This percentage is calculated by dividing the average number of hospice admissions over the last three years for patients under the age of sixty-five with diagnoses other than cancer by the current statewide total of deaths under sixty-five with diagnoses other than cancer.									
i.	Hospice Admissions 65+ w/cancer			# of deaths 65+ w/cancer			Hospice Use Rates by age and diagnosis		
	2005	5671	Average	2005	7744	Average	65+ w/Cancer	74.91%	
	2006	5620	5845.33	2006	7638	7803.00	<65 w/Cancer	68.45%	
	2007	6245		2007	8027		65+ w/o Cancer	38.41%	
							<65 w/o Cancer	9.87%	
ii.	Hospice Admissions <65 w/cancer			# of deaths <65 w/cancer			Rates of Cancer as cause of death		
	2005	2120	Average	2005	3264	Average	65+	22.75%	
	2006	2386	2310.67	2006	3365	3375.67	<65	28.04%	
	2007	2426		2007	3498				
iii.	Hospice Admissions 65+ w/o cancer			# of deaths 65+ w/o cancer			Hospice use rate by age only		
	2005	9325	Average	2005	26412	Average	<65	26.30%	
	2006	10071	10177.67	2006	26227	26495.33	65+	46.72%	
	2007	11137		2007	26847				
iv.	Hospice Admissions <65 w/o cancer			# of deaths <65 w/o cancer					
	2005	714	Average	2005	8595	Average			
	2006	877	854.67	2006	8647	8661.33			
	2007	973		2007	8742				
Sources: Vital Statistics reports for 2007									

Step 2. Calculate the average number of total resident deaths over the last three years for each planning area.										
0-64					65+					
County	2005	2006	2007	Average	County	2005	2006	2007	Average	
Adams	36	20	32	29	Adams	76	74	79	76	
Asotin	45	46	46	46	Asotin	157	156	165	159	
Benton	240	314	278	277	Benton	789	767	887	814	
Chelan	132	122	101	118	Chelan	475	435	496	469	
Clallam	155	172	192	173	Clallam	671	692	748	704	
Clark	733	712	737	727	Clark	1,981	1,941	1,911	1,944	
Columbia	5	14	7	9	Columbia	33	41	43	39	
Cowlitz	276	274	262	271	Cowlitz	766	739	739	748	
Douglas	63	62	67	64	Douglas	195	201	190	195	
Ferry	25	29	34	29	Ferry	58	45	59	54	
Franklin	81	95	88	88	Franklin	195	214	214	208	
Garfield	7	4	2	4	Garfield	18	24	20	21	
Grant	160	170	169	166	Grant	413	436	399	416	
Grays Harbor	196	183	214	198	Grays Harb	568	548	610	575	
Island	116	148	137	134	Island	475	440	493	469	
Jefferson	83	76	69	76	Jefferson	212	228	229	223	
King	2,878	3,014	3,044	2,979	King	8,540	8,527	8,586	8,551	
Kitsap	462	428	457	449	Kitsap	1,337	1,305	1,440	1,361	
Kittitas	62	72	47	60	Kittitas	174	181	201	185	
Klickitat	48	40	65	51	Klickitat	127	116	118	120	
Lewis	197	160	171	176	Lewis	555	561	571	562	
Lincoln	29	21	22	24	Lincoln	103	87	82	91	
Mason	156	154	163	158	Mason	436	429	441	435	
Okanogan	103	106	94	101	Okanogan	262	256	259	259	
Pacific	67	63	71	67	Pacific	227	218	232	226	
Pend Oreille	33	35	39	36	Pend Oreill	86	89	118	98	
Pierce	1,570	1,649	1,635	1,618	Pierce	3,932	3,777	3,981	3,897	
San Juan	22	37	21	27	San Juan	81	87	101	90	
Skagit	218	240	204	221	Skagit	806	778	785	790	
Skamania	29	26	21	25	Skamania	50	55	44	50	
Snohomish	1,178	1,129	1,200	1,169	Snohomish	3,058	3,011	3,105	3,058	
Spokane	894	896	932	907	Spokane	2,743	2,823	2,874	2,813	
Stevens	113	120	112	115	Stevens	276	286	291	284	
Thurston	450	456	467	458	Thurston	1,288	1,387	1,379	1,351	
Wahkiakum	16	9	14	13	Wahkiakun	27	31	38	32	
Walla Walla	114	105	120	113	Walla Walla	433	427	445	435	
Whatcom	300	306	354	320	Whatcom	1,020	1,004	1,065	1,030	
Whitman	47	43	50	47	Whitman	178	171	173	174	
Yakima	520	462	502	495	Yakima	1,335	1,278	1,263	1,307	

Department of Health  
Hospice Numeric Need Methodology

Step 3. Multiply each hospice use rate determined in Step 1 by the planning areas average total resident deaths determined in Step 2.										
0-64	2005-2007		Cancer	Non-Cancer		65+			Cancer	Non-Cancer
County	Average Deaths		Projected	Projected		County	Average		Projected	Projected
Adams	29		6	2		Adams	76		13	23
Asotin	46		9	3		Asotin	159		27	47
Benton	277		53	20		Benton	814		139	242
Chelan	118		23	8		Chelan	469		80	139
Clallam	173		33	12		Clallam	704		120	209
Clark	727		140	52		Clark	1944		331	577
Columbia	9		2	1		Columbia	39		7	12
Cowlitz	271		52	19		Cowlitz	748		127	222
Douglas	64		12	5		Douglas	195		33	58
Ferry	29		6	2		Ferry	54		9	16
Franklin	88		17	6		Franklin	208		35	62
Garfield	4		1	0		Garfield	21		4	6
Grant	166		32	12		Grant	416		71	123
Grays Harbor	198		38	14		Grays Harbor	575		98	171
Island	134		26	9		Island	469		80	139
Jefferson	76		15	5		Jefferson	223		38	66
King	2979		572	211		King	8551		1457	2537
Kitsap	449		86	32		Kitsap	1361		232	404
Kittitas	60		12	4		Kittitas	185		32	55
Klickitat	51		10	4		Klickitat	120		21	36
Lewis	176		34	12		Lewis	562		96	167
Lincoln	24		5	2		Lincoln	91		15	27
Mason	158		30	11		Mason	435		74	129
Okanogan	101		19	7		Okanogan	259		44	77
Pacific	67		13	5		Pacific	226		38	67
Pend Oreille	36		7	3		Pend Oreille	98		17	29
Pierce	1618		311	115		Pierce	3897		664	1156
San Juan	27		5	2		San Juan	90		15	27
Skagit	221		42	16		Skagit	790		135	234
Skamania	25		5	2		Skamania	50		8	15
Snohomish	1169		224	83		Snohomish	3058		521	907
Spokane	907		174	64		Spokane	2813		479	835
Stevens	115		22	8		Stevens	284		48	84
Thurston	458		88	32		Thurston	1351		230	401
Wahkiakum	13		2	1		Wahkiakum	32		5	9
Walla Walla	113		22	8		Walla Walla	435		74	129
Whatcom	320		61	23		Whatcom	1030		175	306
Whitman	47		9	3		Whitman	174		30	52
Yakima	495		95	35		Yakima	1307		223	388

Step 4. Add the four subtotals derived in Step 3 to project the potential volume of hospice services in each planning area.						
County	Average Deaths	<65 w/Cancer Projected	<65 w/o Cancer Projected	65+ w/Cancer Projected	65+ w/o Cancer Projected	Total Projected Patients
Adams	106	6	2	13	23	43
Asotin	205	9	3	27	47	86
Benton	1092	53	20	139	242	453
Chelan	587	23	8	80	139	250
Clallam	877	33	12	120	209	374
Clark	2672	140	52	331	577	1100
Columbia	48	2	1	7	12	20
Cowlitz	1019	52	19	127	222	421
Douglas	259	12	5	33	58	108
Ferry	83	6	2	9	16	33
Franklin	296	17	6	35	62	120
Garfield	25	1	0	4	6	11
Grant	582	32	12	71	123	238
Grays Hart	773	38	14	98	171	321
Island	603	26	9	80	139	254
Jefferson	299	15	5	38	66	124
King	11530	572	211	1457	2537	4778
Kitsap	1810	86	32	232	404	754
Kittitas	246	12	4	32	55	102
Klickitat	171	10	4	21	36	70
Lewis	738	34	12	96	167	309
Lincoln	115	5	2	15	27	49
Mason	593	30	11	74	129	245
Okanogan	360	19	7	44	77	148
Pacific	293	13	5	38	67	123
Pend Oreill	133	7	3	17	29	55
Pierce	5515	311	115	664	1156	2246
San Juan	116	5	2	15	27	49
Skagit	1010	42	16	135	234	427
Skamania	75	5	2	8	15	30
Snohomish	4227	224	83	521	907	1736
Spokane	3721	174	64	479	835	1553
Stevens	399	22	8	48	84	163
Thurston	1809	88	32	230	401	752
Wahkiakum	45	2	1	5	9	18
Walla Walla	548	22	8	74	129	233
Whatcom	1350	61	23	175	306	565
Whitman	221	9	3	30	52	94
Yakima	1801	95	35	223	388	740

Department of Health  
Hospice Numeric Need Methodology

Step 5. Inflate the potential volume of hospice service by the one-year estimated population growth (using OFM data).															
County	Projected Patients	2005-2007 average population	2008	2009	2010	2011	2012	2013	2008 Potential volume	2009 Potential volume	2010 Potential volume	2011 Potential volume	2012 Potential volume	2013 Potential volume	
Adams	43	17,275	17,826	18,101	18,376	18,614	18,853	19,091	45	45	46	47	47	48	
Asotin	86	21,178	21,734	22,012	22,290	22,480	22,670	22,861	89	90	91	92	93	93	
Benton	453	160,248	164,543	166,691	168,839	170,442	172,045	173,648	466	472	478	482	487	491	
Chelan	250	70,379	72,736	73,914	75,093	76,081	77,068	78,056	258	263	267	270	274	277	
Clallam	374	67,242	68,125	68,566	69,008	69,588	70,169	70,749	379	382	384	387	391	394	
Clark	1100	400,478	418,435	427,413	436,391	444,483	452,575	460,666	1149	1174	1198	1220	1243	1265	
Columbia	20	4,101	4,102	4,102	4,103	4,102	4,100	4,099	21	21	21	21	20	20	
Cowlitz	421	98,315	103,144	105,559	107,974	109,790	111,606	113,421	441	452	462	470	477	485	
Douglas	108	35,604	37,413	38,318	39,222	39,830	40,438	41,046	114	116	119	121	123	125	
Ferry	33	7,543	7,830	7,974	8,117	8,203	8,289	8,375	34	35	35	36	36	37	
Franklin	120	62,408	66,223	68,130	70,038	72,100	74,162	76,224	128	131	135	139	143	147	
Garfield	11	2,402	2,407	2,410	2,412	2,428	2,445	2,461	11	11	11	11	11	11	
Grant	238	80,958	84,673	86,531	88,389	89,255	90,121	90,987	249	254	260	262	265	268	
Grays Harbor	321	70,229	71,087	71,516	71,945	72,498	73,051	73,604	325	327	329	331	334	336	
Island	254	76,941	78,822	79,762	80,703	82,029	83,355	84,682	261	264	267	271	276	280	
Jefferson	124	28,262	29,587	30,250	30,912	31,537	32,161	32,786	130	133	136	139	141	144	
King	4778	1,833,465	1,883,794	1,908,959	1,934,124	1,953,110	1,972,096	1,991,081	4909	4975	5040	5090	5139	5189	
Kitsap	754	242,130	245,590	247,320	249,050	251,650	254,251	256,851	764	770	775	783	791	800	
Kittitas	102	37,237	38,510	39,146	39,783	40,312	40,840	41,369	106	108	109	111	112	114	
Klickitat	70	19,928	20,784	21,212	21,640	21,922	22,204	22,485	73	74	76	77	78	79	
Lewis	309	72,789	75,166	76,355	77,544	78,270	78,996	79,723	319	324	329	332	335	338	
Lincoln	49	10,159	10,276	10,334	10,393	10,513	10,633	10,754	49	50	50	50	51	52	
Mason	245	53,249	55,946	57,294	58,643	59,704	60,765	61,825	257	263	270	275	279	284	
Okanogan	148	40,228	41,483	42,111	42,739	43,176	43,613	44,049	152	154	157	158	160	162	
Pacific	123	21,294	21,283	21,277	21,271	21,358	21,445	21,531	123	123	123	123	124	124	
Pend Oreille	55	12,497	13,090	13,386	13,683	13,886	14,089	14,291	58	59	60	61	62	63	
Pierce	2246	772,058	804,373	820,530	836,688	849,188	861,689	874,189	2340	2387	2434	2470	2507	2543	
San Juan	49	15,865	16,596	16,962	17,327	17,692	18,056	18,421	51	52	53	55	56	57	
Skagit	427	113,498	118,693	121,290	123,888	126,228	128,568	130,909	446	456	466	475	484	492	
Skamania	30	10,455	10,765	10,920	11,075	11,204	11,333	11,462	31	31	32	32	32	33	
Snohomish	1736	669,833	697,898	711,930	725,963	738,066	750,168	762,271	1809	1845	1881	1913	1944	1976	
Spokane	1553	442,385	454,554	460,639	466,724	472,682	478,640	484,597	1596	1617	1638	1659	1680	1701	
Stevens	163	42,283	44,450	45,533	46,616	47,703	48,791	49,878	171	176	180	184	188	192	
Thurston	752	230,503	243,308	249,710	256,113	262,126	268,140	274,153	793	814	835	855	874	894	
Wahkiakum	18	3,954	4,063	4,118	4,172	4,218	4,264	4,310	19	19	19	20	20	20	
Walla Walla	233	58,168	59,504	60,172	60,840	61,300	61,760	62,219	238	241	244	245	247	249	
Whatcom	565	183,767	189,700	192,666	195,633	199,116	202,598	206,081	583	593	602	612	623	634	
Whitman	94	42,550	42,851	43,001	43,151	43,376	43,600	43,825	94	95	95	95	96	96	
Yakima	740	231,729	236,588	239,017	241,446	244,730	248,014	251,299	756	764	771	782	792	803	

