



**Department of Health
Hospice Numeric Need Methodology-Preliminary Results**

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		
	2007	6129	Average	2007	8027	Average	65+ w/Cancer	77.97%	
	2008	6425	6348.33	2008	8094	8142.33	<65 w/Cancer	68.32%	
	2009	6491		2009	8306		65+ w/o Cancer	41.98%	
							<65 w/o Cancer	11.50%	
ii.	Hospice Admissions <65 w/cancer			# of deaths <65 w/cancer			Rates of Cancer as cause of death		
	2007	2376	Average	2007	3498	Average	65+	23.02%	
	2008	2271	2411.67	2008	3497	3530.00	<65	28.04%	
	2009	2588		2009	3595				
iii.	Hospice Admissions 65+ w/o cancer			# of deaths 65+ w/o cancer			Hospice use rate by age only		
	2007	10939	Average	2007	26847	Average	<65	27.43%	
	2008	11137	11427.67	2008	27747	27221.33	65+	50.27%	
	2009	12207		2009	27070				
iv.	Hospice Admissions <65 w/o cancer			# of deaths <65 w/o cancer					
	2007	948	Average	2007	8742	Average			
	2008	1048	1041.67	2008	9212	9061.33			
	2009	1129		2009	9230				
Sources: Vital Statistics reports for 2009									



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Step 2. Calculate the average number of total resident deaths over the last three years for each planning area.									
0-64					65+				
County	2007	2008	2009	Average	County	2007	2008	2009	Average
Adams	32	39	40	37	Adams	79	82	84	82
Asotin	46	52	52	50	Asotin	165	176	184	175
Benton	278	298	307	294	Benton	887	883	881	884
Chelan	101	121	116	113	Chelan	496	536	506	513
Clallam	192	187	218	199	Clallam	748	728	702	726
Clark	737	733	808	759	Clark	1,911	2,027	2,039	1,992
Columbia	7	10	11	9	Columbia	43	27	30	33
Cowlitz	262	256	246	255	Cowlitz	739	747	737	741
Douglas	67	63	63	64	Douglas	190	215	217	207
Ferry	34	22	32	29	Ferry	59	44	41	48
Franklin	88	114	112	105	Franklin	214	243	254	237
Garfield	2	3	3	3	Garfield	20	26	24	23
Grant	169	170	187	175	Grant	399	430	416	415
Grays Harbor	214	231	229	225	Grays Harbor	610	546	538	565
Island	137	121	127	128	Island	493	522	476	497
Jefferson	69	77	67	71	Jefferson	229	267	252	249
King	3,044	3,071	3,031	3,049	King	8,586	8,888	8,523	8,666
Kitsap	457	486	515	486	Kitsap	1,440	1,427	1,467	1,445
Kittitas	47	70	48	55	Kittitas	201	207	211	206
Klickitat	65	38	52	52	Klickitat	118	111	127	119
Lewis	171	161	178	170	Lewis	571	557	607	578
Lincoln	22	29	25	25	Lincoln	82	103	96	94
Mason	163	145	168	159	Mason	441	433	397	424
Okanogan	94	126	109	110	Okanogan	259	291	305	285
Pacific	71	79	77	76	Pacific	232	221	252	235
Pend Oreille	39	36	37	37	Pend Oreille	118	112	105	112
Pierce	1,635	1,814	1,715	1,721	Pierce	3,981	4,038	4,045	4,021
San Juan	21	28	34	28	San Juan	101	106	82	96
Skagit	204	255	264	241	Skagit	785	875	846	835
Skamania	21	27	36	28	Skamania	44	48	50	47
Snohomish	1,200	1,195	1,258	1,218	Snohomish	3,105	3,185	3,196	3,162
Spokane	932	1,052	1,024	1,003	Spokane	2,874	3,022	2,971	2,956
Stevens	112	106	118	112	Stevens	291	290	286	289
Thurston	467	461	453	460	Thurston	1,379	1,367	1,374	1,373
Wahkiakum	14	18	5	12	Wahkiakum	38	42	33	38
Walla Walla	120	130	118	123	Walla Walla	445	450	464	453
Whatcom	354	330	333	339	Whatcom	1,065	1,086	1,055	1,069
Whitman	50	39	50	46	Whitman	173	190	185	183
Yakima	502	516	559	526	Yakima	1,263	1,293	1,318	1,278



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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	2007-2009		Cancer	Non-Cancer		65+			Cancer	Non-Cancer
County	Average Deaths		Projected	Projected		County	Average		Projected	Projected
Adams	37		7	3		Adams	82		15	26
Asotin	50		10	4		Asotin	175		31	57
Benton	294		56	24		Benton	884		159	286
Chelan	113		22	9		Chelan	513		92	166
Clallam	199		38	16		Clallam	726		130	235
Clark	759		145	63		Clark	1992		358	644
Columbia	9		2	1		Columbia	33		6	11
Cowlitz	255		49	21		Cowlitz	741		133	239
Douglas	64		12	5		Douglas	207		37	67
Ferry	29		6	2		Ferry	48		9	16
Franklin	105		20	9		Franklin	237		43	77
Garfield	3		1	0		Garfield	23		4	8
Grant	175		34	15		Grant	415		74	134
Grays Hart	225		43	19		Grays Hart	565		101	182
Island	128		25	11		Island	497		89	161
Jefferson	71		14	6		Jefferson	249		45	81
King	3049		584	252		King	8666		1556	2800
Kitsap	486		93	40		Kitsap	1445		259	467
Kittitas	55		11	5		Kittitas	206		37	67
Klickitat	52		10	4		Klickitat	119		21	38
Lewis	170		33	14		Lewis	578		104	187
Lincoln	25		5	2		Lincoln	94		17	30
Mason	159		30	13		Mason	424		76	137
Okanogan	110		21	9		Okanogan	285		51	92
Pacific	76		14	6		Pacific	235		42	76
Pend Oreil	37		7	3		Pend Oreil	112		20	36
Pierce	1721		330	142		Pierce	4021		722	1299
San Juan	28		5	2		San Juan	96		17	31
Skagit	241		46	20		Skagit	835		150	270
Skamania	28		5	2		Skamania	47		8	15
Snohomish	1218		233	101		Snohomish	3162		568	1022
Spokane	1003		192	83		Spokane	2956		531	955
Stevens	112		21	9		Stevens	289		52	93
Thurston	460		88	38		Thurston	1373		247	444
Wahkiakur	12		2	1		Wahkiakur	38		7	12
Walla Wall	123		23	10		Walla Wall	453		81	146
Whatcom	339		65	28		Whatcom	1069		192	345
Whitman	46		9	4		Whitman	183		33	59
Yakima	526		101	43		Yakima	1278		229	413



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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	119	7	3	15	26	51	
Asotin	225	10	4	31	57	102	
Benton	1178	56	24	159	286	525	
Chelan	625	22	9	92	166	289	
Clallam	925	38	16	130	235	420	
Clark	2752	145	63	358	644	1210	
Columbia	43	2	1	6	11	19	
Cowlitz	996	49	21	133	239	442	
Douglas	272	12	5	37	67	122	
Ferry	77	6	2	9	16	32	
Franklin	342	20	9	43	77	148	
Garfield	26	1	0	4	8	12	
Grant	590	34	15	74	134	257	
Grays Hart	789	43	19	101	182	345	
Island	625	25	11	89	161	285	
Jefferson	320	14	6	45	81	145	
King	11714	584	252	1556	2800	5192	
Kitsap	1931	93	40	259	467	859	
Kittitas	261	11	5	37	67	119	
Klickitat	170	10	4	21	38	74	
Lewis	748	33	14	104	187	337	
Lincoln	119	5	2	17	30	54	
Mason	582	30	13	76	137	256	
Okanogan	395	21	9	51	92	173	
Pacific	311	14	6	42	76	139	
Pend Oreil	149	7	3	20	36	66	
Pierce	5743	330	142	722	1299	2493	
San Juan	124	5	2	17	31	56	
Skagit	1076	46	20	150	270	486	
Skamania	75	5	2	8	15	31	
Snohomish	4380	233	101	568	1022	1923	
Spokane	3958	192	83	531	955	1761	
Stevens	401	21	9	52	93	176	
Thurston	1834	88	38	247	444	817	
Wahkiakur	50	2	1	7	12	22	
Walla Wall	576	23	10	81	146	261	
Whatcom	1408	65	28	192	345	630	
Whitman	229	9	4	33	59	105	
Yakima	1804	101	43	229	413	787	

Step 5. Inflate the potential volume of hospice service by the one-year estimated population growth (using OFM data).															
County	Projected Patients	2007-2009 average population	2010	2011	2012	2013	2014	2015	2010 Potential volume	2011 Potential volume	2012 Potential volume	2013 Potential volume	2014 Potential volume	2015 Potential volume	
Adams	51	17,826	18,376	18,614	18,853	19,091	19,330	19,568	53	53	54	55	56	56	
Asotin	102	21,734	22,290	22,480	22,670	22,861	23,051	23,241	104	105	106	107	108	109	
Benton	525	164,543	168,839	170,442	172,045	173,648	175,251	176,854	539	544	549	554	559	564	
Chelan	289	72,736	75,093	76,081	77,068	78,056	79,043	80,031	298	302	306	310	314	318	
Clallam	420	68,125	69,008	69,588	70,169	70,749	71,330	71,910	425	429	432	436	439	443	
Clark	1210	418,435	436,391	444,483	452,575	460,666	468,758	476,850	1262	1285	1308	1332	1355	1379	
Columbia	19	4,102	4,103	4,102	4,100	4,099	4,097	4,096	19	19	19	19	19	19	
Cowlitz	442	103,144	107,974	109,790	111,606	113,421	115,237	117,053	463	471	479	486	494	502	
Douglas	122	37,413	39,222	39,830	40,438	41,046	41,654	42,262	128	130	132	134	136	138	
Ferry	32	7,830	8,117	8,203	8,289	8,375	8,461	8,547	33	34	34	34	35	35	
Franklin	148	66,223	70,038	72,100	74,162	76,224	78,286	80,348	156	161	166	170	175	179	
Garfield	12	2,407	2,412	2,428	2,445	2,461	2,478	2,494	12	13	13	13	13	13	
Grant	257	84,673	88,389	89,255	90,121	90,987	91,853	92,719	268	271	273	276	278	281	
Grays Harbor	345	71,087	71,945	72,498	73,051	73,604	74,157	74,710	350	352	355	358	360	363	
Island	285	78,822	80,703	82,029	83,355	84,682	86,008	87,334	292	297	301	306	311	316	
Jefferson	145	29,587	30,912	31,537	32,161	32,786	33,410	34,035	151	154	157	160	164	167	
King	5192	1,883,794	1,934,124	1,953,110	1,972,096	1,991,081	2,010,067	2,029,053	5331	5383	5435	5488	5540	5592	
Kitsap	859	245,590	249,050	251,650	254,251	256,851	259,452	262,052	872	881	890	899	908	917	
Kittitas	119	38,510	39,783	40,312	40,840	41,369	41,897	42,426	123	124	126	128	129	131	
Klickitat	74	20,784	21,640	21,922	22,204	22,485	22,767	23,049	77	78	79	80	81	82	
Lewis	337	75,166	77,544	78,270	78,996	79,723	80,449	81,175	348	351	355	358	361	364	
Lincoln	54	10,276	10,393	10,513	10,633	10,754	10,874	10,994	55	55	56	57	57	58	
Mason	256	55,946	58,643	59,704	60,765	61,825	62,886	63,947	269	274	279	283	288	293	
Okanogan	173	41,483	42,739	43,176	43,613	44,049	44,486	44,923	179	180	182	184	186	188	
Pacific	139	21,283	21,271	21,358	21,445	21,531	21,618	21,705	139	139	140	141	141	142	
Pend Oreille	66	13,090	13,683	13,886	14,089	14,291	14,494	14,697	69	70	71	72	73	75	
Pierce	2493	804,373	836,688	849,188	861,689	874,189	886,690	899,190	2594	2632	2671	2710	2749	2787	
San Juan	56	16,596	17,327	17,692	18,056	18,421	18,785	19,150	58	60	61	62	63	65	
Skagit	486	118,693	123,888	126,228	128,568	130,909	133,249	135,589	507	517	526	536	546	555	
Skamania	31	10,765	11,075	11,204	11,333	11,462	11,591	11,720	32	33	33	34	34	34	
Snohomish	1923	697,898	725,963	738,066	750,168	762,271	774,373	786,476	2001	2034	2067	2101	2134	2167	
Spokane	1761	454,554	466,724	472,682	478,640	484,597	490,555	496,513	1808	1831	1854	1877	1900	1923	
Stevens	176	44,450	46,616	47,703	48,791	49,878	50,966	52,053	185	189	193	197	202	206	
Thurston	817	243,308	256,113	262,126	268,140	274,153	280,167	286,180	860	880	900	920	940	960	
Wahkiakum	22	4,063	4,172	4,218	4,264	4,310	4,356	4,402	23	23	23	24	24	24	
Walla Walla	261	59,504	60,840	61,300	61,760	62,219	62,679	63,139	267	269	271	273	275	277	
Whatcom	630	189,700	195,633	199,116	202,598	206,081	209,563	213,046	650	661	673	685	696	708	
Whitman	105	42,851	43,151	43,376	43,600	43,825	44,049	44,274	105	106	106	107	107	108	
Yakima	787	236,588	241,446	244,730	248,014	251,299	254,583	257,867	803	814	825	835	846	857	



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Step 6. Subtract the current hospice capacity in each planning area from the above projected volume of hospice services to determine unmet need.																												
(g) Determine the number of hospice agencies in the proposed planning area which could support the unmet need with an ADC of thirty-five.																												
	2010 Potential volume	2011 Potential volume	2012 Potential volume	2013 Potential volume	2014 Potential volume	2015 Potential volume	Current Capacity	2010 Unmet Need admits	2011 Unmet Need admits	2012 Unmet Need admits	2013 Unmet Need admits	2014 Unmet Need admits	2015 Unmet Need admits	Statewide ALOS **	2010 Unmet Need Patient Days	2011 Unmet Need Patient Days	2012 Unmet Need Patient Days	2013 Unmet Need Patient Days	2014 Unmet Need Patient Days	2015 Unmet Need Patient Days	2010 Unmet Need ADC	2011 Unmet Need ADC	2012 Unmet Need ADC	2013 Unmet Need ADC	2014 Unmet Need ADC	2015 Unmet Need ADC	Need for Add'l Agency	# of Add'l Agencies Needed
Adams	53	53	54	55	56	56	18.67	34	35	35	36	37	38	56.70	1,934	1,973	2,012	2,050	2,089	2,128	5	5	6	6	6	6	FALSE	FALSE
Asotin	104	105	106	107	108	109	33.67	71	72	72	73	74	75	56.70	4,004	4,054	4,105	4,155	4,205	4,256	11	11	11	11	12	12	FALSE	FALSE
Benton	539	544	549	554	559	564	570.00	(31)	(26)	(21)	(16)	(11)	(6)	56.70	(1,780)	(1,490)	(1,200)	(910)	(620)	(330)	(5)	(4)	(3)	(2)	(2)	(1)	FALSE	FALSE
Chelan	298	302	306	310	314	318	225.33	73	77	80	84	88	92	56.70	4,118	4,340	4,562	4,784	5,006	5,229	11	12	12	13	14	14	FALSE	FALSE
Cllallam	425	429	432	436	439	443	336.33	89	92	96	99	103	106	56.70	5,025	5,227	5,430	5,633	5,835	6,038	14	14	15	15	16	17	FALSE	FALSE
Clark	1,262	1,285	1,308	1,332	1,355	1,379	1,617.67	(356)	(333)	(309)	(286)	(262)	(239)	56.70	(20,187)	(18,860)	(17,534)	(16,207)	(14,881)	(13,555)	(55)	(52)	(48)	(44)	(41)	(37)	FALSE	FALSE
Columbia	19	19	19	19	19	19	13.33	6	6	6	6	6	6	56.70	340	339	339	339	338	338	1	1	1	1	1	1	FALSE	FALSE
Cowlitz	463	471	479	486	494	502	615.33	(152)	(145)	(137)	(129)	(121)	(113)	56.70	(8,635)	(8,194)	(7,752)	(7,311)	(6,869)	(6,428)	(24)	(22)	(21)	(20)	(19)	(18)	FALSE	FALSE
Douglas	128	130	132	134	136	138	101.67	26	28	30	32	34	36	56.70	1,479	1,591	1,704	1,816	1,928	2,040	4	4	5	5	5	6	FALSE	FALSE
Ferry	33	34	34	34	35	35	26.00	7	8	8	8	9	9	56.70	417	437	457	477	497	517	1	1	1	1	1	1	FALSE	FALSE
Franklin	156	161	166	170	175	179	168.00	(12)	(7)	(2)	2	7	11	56.70	(660)	(399)	(138)	123	384	645	(2)	(1)	(0)	0	1	2	FALSE	FALSE
Garfield	12	13	13	13	13	13	4.00	8	9	9	9	9	9	56.70	481	486	491	496	500	505	1	1	1	1	1	1	FALSE	FALSE
Grant	268	271	273	276	278	281	74.17	194	196	199	202	204	207	56.70	10,988	11,137	11,285	11,434	11,583	11,732	30	31	31	31	32	32	FALSE	FALSE
Grays Harbor	350	352	355	358	360	363	150.67	199	202	204	207	210	212	56.70	11,281	11,433	11,585	11,738	11,890	12,043	31	31	32	32	33	33	FALSE	FALSE
Island	292	297	301	306	311	316	113.00	179	184	188	193	198	203	56.70	10,139	10,411	10,683	10,955	11,227	11,499	28	29	29	30	31	32	FALSE	FALSE
Jefferson	151	154	157	160	164	167	141.33	10	13	16	19	22	25	56.70	565	738	911	1,085	1,258	1,431	2	2	2	3	3	4	FALSE	FALSE
King *	5,331	5,383	5,435	5,488	5,540	5,592	5,316.33	14	67	119	171	224	276	56.70	818	3,785	6,752	9,719	12,686	15,653	2	10	18	27	35	43	TRUE	1.23
Kitsap *	872	881	890	899	908	917	922	-50	-41	-32	-23	-14	-5	56.70	-2859	-2343	-1827	-1311	-795	-279	-8	-6	-5	-4	-2	-1	FALSE	FALSE
Kititas	123	124	126	128	129	131	71.67	51	53	54	56	58	59	56.70	2895	2987	3080	3172	3265	3357	8	8	8	9	9	9	FALSE	FALSE
Klickitat	77	78	79	80	81	82	58.00	19	20	21	22	23	24	56.70	1069	1126	1183	1240	1296	1353	3	3	3	3	4	4	FALSE	FALSE
Lewis	348	351	355	358	361	364	287.67	60	64	67	70	73	77	56.70	3421	3606	3790	3975	4160	4345	9	10	10	11	11	12	FALSE	FALSE
Lincoln	55	55	56	57	57	58	10.00	45	45	46	47	48	48	56.70	2531	2567	2603	2639	2675	2711	7	7	7	7	7	7	FALSE	FALSE
Mason	269	274	279	283	288	293	191.67	77	82	87	92	97	101	56.70	4376	4651	4927	5203	5479	5754	12	13	13	14	15	16	FALSE	FALSE
Okanogan	179	180	182	184	186	188	45.67	133	135	137	138	140	142	56.70	7536	7640	7743	7847	7950	8054	21	21	21	21	22	22	FALSE	FALSE
Pacific	139	139	140	141	141	142	61.67	77	78	78	79	79	80	56.70	4373	4406	4438	4470	4502	4534	12	12	12	12	12	12	FALSE	FALSE
Pend Oreille	69	70	71	72	73	75	41.33	28	29	30	31	32	33	56.70	1590	1649	1707	1765	1824	1882	4	5	5	5	5	5	FALSE	FALSE
Pierce	2594	2632	2671	2710	2749	2787	2,639.00	-45	-7	32	71	110	148	56.70	-2572	-374	1823	4020	6217	8414	-7	-1	5	11	17	23	FALSE	FALSE
San Juan	58	60	61	62	63	65	19.33	39	40	42	43	44	45	56.70	2220	2289	2359	2429	2499	2569	6	6	6	7	7	7	FALSE	FALSE
Skagit	507	517	526	536	546	555	526.67	-19	-10	0	9	19	28	56.70	-1101	-557	-14	529	1073	1616	-3	-2	0	1	3	4	FALSE	FALSE
Skamania *	32	33	33	34	34	34	267.33	-235	-235	-234	-234	-233	-233	56.70	-13322	-13300	-13279	-13258	-13236	-13215	-36	-36	-36	-36	-36	-36	FALSE	FALSE
Snohomish	2,001	2,034	2,067	2,101	2,134	2,167	2,200.17	(199)	(166)	(133)	(99)	(66)	(33)	56.70	(11,308)	(9,417)	(7,526)	(5,635)	(3,744)	(1,852)	(31)	(26)	(21)	(15)	(10)	(5)	FALSE	FALSE
Spokane	1,808	1,831	1,854	1,877	1,900	1,923	1,912.67	(105)	(82)	(59)	(36)	(13)	11	56.70	(5,944)	(4,636)	(3,327)	(2,019)	(710)	598	(16)	(13)	(9)	(6)	(2)	2	FALSE	FALSE
Stevens	185	189	193	197	202	206	97.67	87	91	96	100	104	108	56.70	4,927	5,171	5,415	5,659	5,903	6,147	13	14	15	16	16	17	FALSE	FALSE
Thurston	860	880	900	920	940	960	777.00	83	103	123	143	163	183	56.70	4,681	5,825	6,969	8,114	9,258	10,402	13	16	19	22	25	28	FALSE	FALSE
Wahkiakum	23	23	23	24	24	24	18.00	5	5	5	6	6	6	56.70	279	293	307	322	336	350	1	1	1	1	1	1	FALSE	FALSE
Walla Walla	267	269	271	273	275	277	227.00	40	42	44	46	48	50	56.70	2,280	2,395	2,509	2,624	2,738	2,853	6	7	7	7	8	8	FALSE	FALSE
Whatcom	650	661	673	685	696	708	724.00	(74)	(63)	(51)	(39)	(28)	(16)	56.70	(4,204)	(3,548)	(2,892)	(2,236)	(1,580)	(924)	(12)	(10)	(8)	(6)	(4)	(3)	FALSE	FALSE
Whitman	105	106	106	107	107	108	72.33	33	33	34	35	35	36	56.70	1,867	1,898	1,929	1,960	1,991	2,022	5	5	5	5	5	6	FALSE	FALSE
Yakima	803	814	825	835	846	857	798.33	4	15	26	37	48	59	56.70	249	868	1,487	2,107	2,726	3,345	1	2	4	6	7	9	FALSE	FALSE
							21,495																					
* County contains one hospice in first three years of service																												
Each hospice in first three years is assumed 35 adc at statewide ALOS or 246 admits																												
** Washington State ALOS as reported by CMS for 2009 as of June 2010																												