



Snoqualmie Valley

— H O S P I T A L —

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MARKET ASSESSMENT

April 2017



*Health Facilities
Planning & Development*

Background

- In March 2017, Snoqualmie Valley Hospital (SVH) retained Health Facilities Planning & Development (HFPD) to undertake a Market Assessment, specifically evaluating the following for its primary service area (PSA) and for the boundaries of King County Public Hospital District No. 4.
 - Population: historical and trends for the Service Area
 - Profile of SVH's current services and utilization
 - Service Area residents: historical and trended and future inpatient and swing bed volumes (patients and patient days) by service line
 - Service Area residents: historical and trended future outpatient volumes
 - SVH market share over time
 - Identification of competitors and their estimated market shares (including nursing homes)
 - Analysis of patients within the District being discharged from acute hospital to long-term care, by payer

Key Takeaways

- Both the PSA and the District are growing fast and aging– this growth and aging should produce significant additional health care volume by 2026 (target year). Strong growth is predicted in inpatient, ED, clinic visits, and post acute services.
- The opening of Swedish Issaquah in late 2011 has resulted in significant inpatient market shifts. As of 2016, the Providence/Swedish system now has more than a 53% market share of all inpatient volume from the District.
- Today, SVH's inpatient acute (non-swing bed) market share is exceptionally low; about 1-2%. HFPD can calculate its market share of select outpatient services once we receive the underlying data from SVH.
- The PSA (and District) have strong commercial inpatient payer mix. Medicaid and self- pay are exceptionally low; making it an attractive market.
- HFPD also projected significant need for nursing home (SNF) beds in the District.

Based on patient origin data for acute (non-swing bed) patients, 80% of SVH's patients reside within the boundaries of the District. 77% are from three zip codes that HFPD defined as the Primary Service Area (PSA).

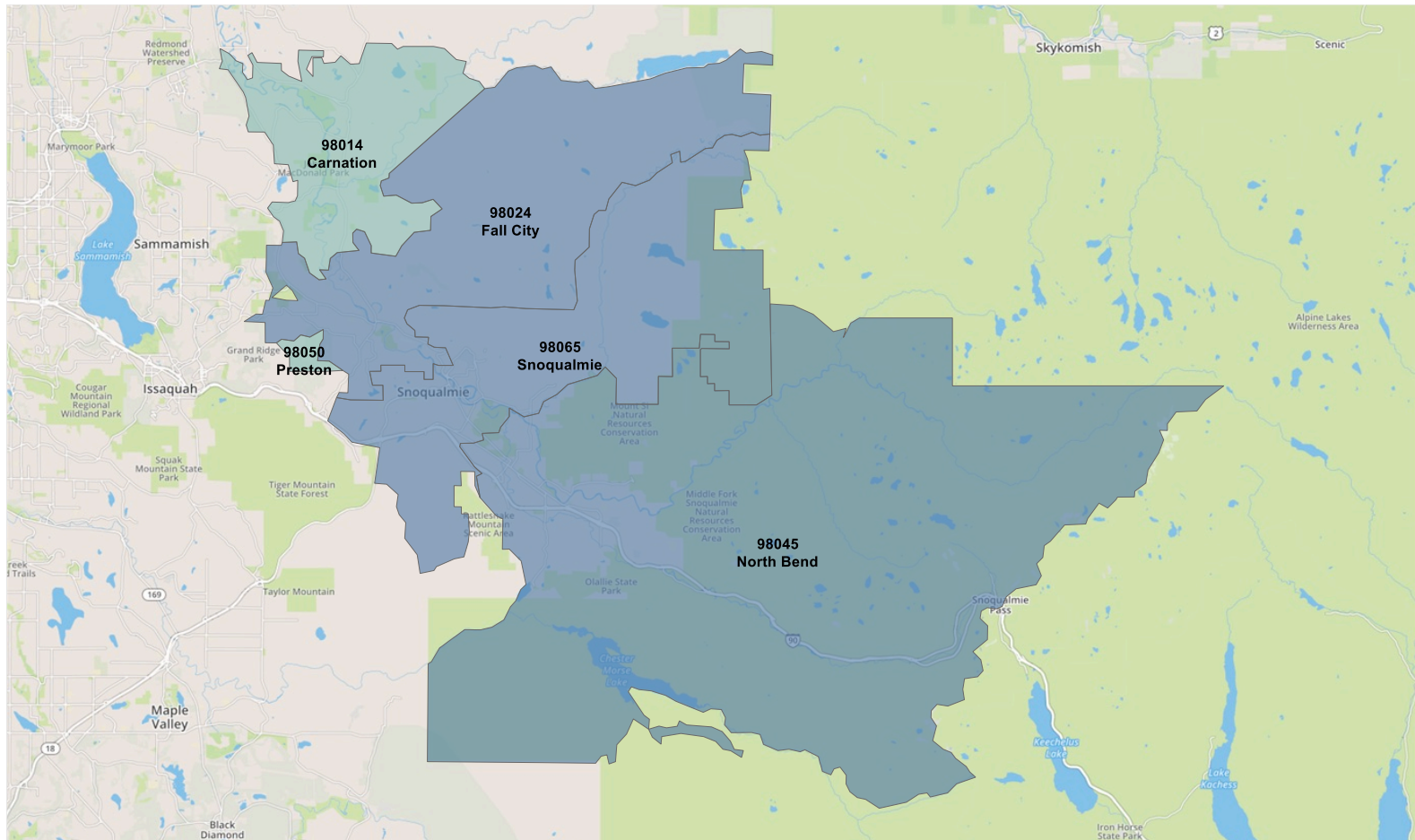
Snoqualmie Valley Hospital 2014-2016 Inpatient (Non-Swing) Discharges by Zip Code

Zip Code	City	2014-2016 Discharges	% of Total	Cumulative %	Snoqualmie Inpatient Market Share
98045	North Bend	91	53.5%	53.5%	3.0%
98065	Snoqualmie	27	15.9%	69.4%	1.1%
98024	Fall City	12	7.1%	76.5%	1.0%
	PSA Subtotal	130	76.5%	76.5%	2.0%
98014	Carnation	3	1.8%	78.3%	0.2%
98050	Preston	3	1.8%	80.1%	2.3%
	District Total	136	80.1%	80.1%	1.7%
98029	Issaquah	4	2.4%	82.5%	0.1%
98027	Issaquah	3	1.8%	84.3%	0.1%
98059	Renton	3	1.8%	86.1%	0.0%

Source: WA State CHARS. Excludes swing and newborns.

Service Area Definition

- PSA: North Bend (98045), Snoqualmie (98065) and Fall City (98024)
- District: PSA, Preston (98050) and Carnation (98014)



In addition to basic acute hospitalization, SVH provides swing beds, primary care, emergency services and an array of outpatient services. Strong growth has occurred in several of SVH's services over the 2014-2016 timeframe.

Service	2014	2015	2016	% Change 2014-2016
Emergency Department Visits	2,837	3,590	3,845	+36%
Endoscopy Procedures	181	242	294	+62%
Outpatient Services Visit	1,923	1,454	1,882	-2%
Outpatient Rehab Procedures	3,322	12,172	11,033	+232%
Outpatient Rehab Clinic	6,563	Consolidated Above		N/A
X-Ray	2,149	2,274	2,309	+7%
MRI	188	135	197	+5%
Ultrasound	451	426	436	-3%
CT	765	749	718	-6%
Clinic Visits	22,774	20,904	20,867	-8%

OVERVIEW OF THE PSA AND DISTRICT

The PSA's population grew by 14.5% just since 2010. By 2026, the population is expected to grow another 21% to nearly 44,000. The PSA is 'young' with less than 10% age 65+ (compared to 14.7% statewide)—but the 65+ is growing almost 10x faster than the under 65.

	2000	2010	Pct of Tot Pop	2016 Est	Pct of Tot Pop	Pct Chg 2010-2016	2021 Proj	2026 Proj	Pct Chg 2016-2026
Tot. Pop.	22,423	31,790	100.0%	36,401	100.0%	14.5%	39,763	43,947	20.7%
Pop. By Age									
0-17	6,358	9,071	28.5%	10,028	27.5%	10.6%	10,667	11,347	13.2%
18-44	9,263	11,250	35.4%	12,117	33.3%	7.7%	12,289	12,463	2.9%
45-64	5,155	9,159	28.8%	10,775	29.6%	17.6%	11,850	13,032	20.9%
65-74	848	1,431	4.5%	2,386	6.6%	66.7%	3,440	4,960	107.9%
75-84	575	615	1.9%	824	2.3%	34.0%	1,236	1,854	125.0%
85+	224	264	0.8%	271	0.7%	2.7%	281	291	7.5%
Tot. 0-64	20,776	29,480	92.7%	32,920	90.4%	11.7%	34,806	36,800	11.8%
Tot. 65 +	1,647	2,310	7.3%	3,481	9.6%	50.7%	4,957	7,059	102.8%
Fem. 15-44	5,099	6,312	19.9%	6,766	18.6%	7.2%	6,953	7,145	5.6%

The District, which will have nearly 53,000 residents by 2026 “looks a lot” like the PSA– growing, younger, and aging. Unlike many areas of the State, women of childbearing age and children are both expected to grow as well.

	2000	2010	Pct of Tot Pop	2016 Est	Pct of Tot Pop	Pct Chg 2010-2016	2021 Proj	2026 Proj	Pct Chg 2016-2026
Tot. Pop.	29,136	38,905	100.0%	43,962	100.0%	13.0%	47,756	52,538	19.5%
Pop. By Age									
0-17	8,470	10,887	28.0%	11,725	26.7%	7.7%	12,346	13,000	10.9%
18-44	12,060	13,441	34.5%	14,420	32.8%	7.3%	14,670	14,924	3.5%
45-64	6,617	11,717	30.1%	13,488	30.7%	15.1%	14,539	15,672	16.2%
65-74	1,035	1,791	4.6%	2,998	6.8%	67.4%	4,333	16,262	108.9%
75-84	691	751	1.9%	1,009	2.3%	34.4%	1,535	12,335	131.4%
85+	263	318	0.8%	322	0.7%	1.3%	333	344	6.9%
Tot. 0-64	27,147	36,045	92.6%	39,633	90.2%	10.0%	41,555	43,570	9.9%
Tot. 65 +	1,989	2,860	7.4%	4,329	9.8%	51.4%	6,201	8,883	105.2%
Fem. 15-44	6,659	7,554	19.4%	8,046	18.3%	6.5%	8,278	8,517	5.8%

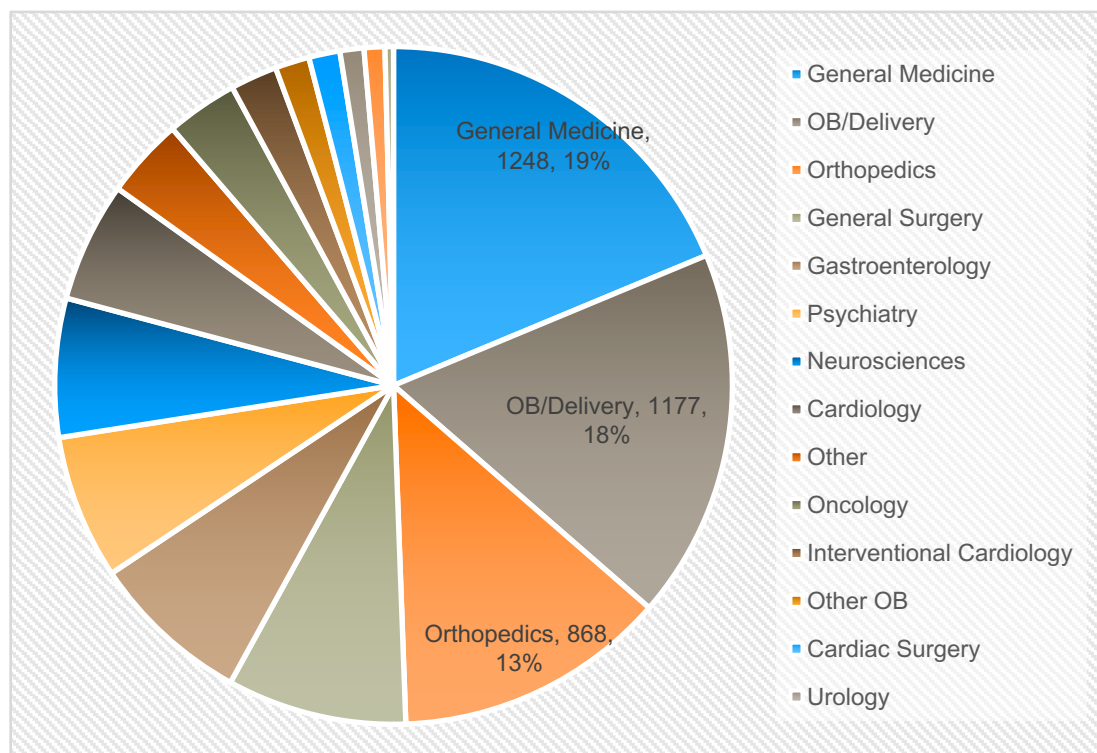
Source: Nielsen Claritas

On any given day, the average daily census of PSA residents hospitalized as an inpatient in any Washington Hospital is 25.7. For the District, the ADC is 33.1.

- Within the PSA, during the period of 2014-2016, approximately 2,200 PSA residents were hospitalized in a Washington State hospital generating nearly 9,400 patient days.
 - This excludes all newborns and swing beds
- During the same period, approximately 2,800 District residents were hospitalized, generating 12,100 patient days.
- SVH's three year market share of PSA residents was 2%. Its market share of the District was 1.7%.

Within the PSA, the most common reasons for residents to be hospitalized are general medicine, OB and orthopedics. The same is true within the District.

2014-2016 PSA Discharges by Service Line

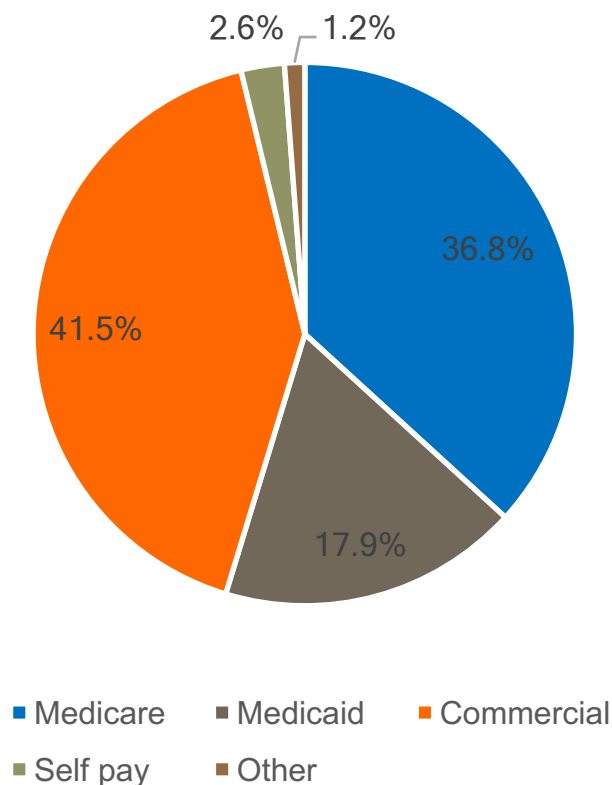


Service Line ,	# of Discharges
General Medicine	1,248
OB/Delivery	1,177
Orthopedics	868
General Surgery	571
Gastroenterology	510
Psychiatry	459
Neurosciences	441
Cardiology	381
Other	254
Oncology	228
Interventional Cardiology	149
Other OB	109
Cardiac Surgery	99
Urology	76
Gynecology	66
Rehabilitation	27
	6,663

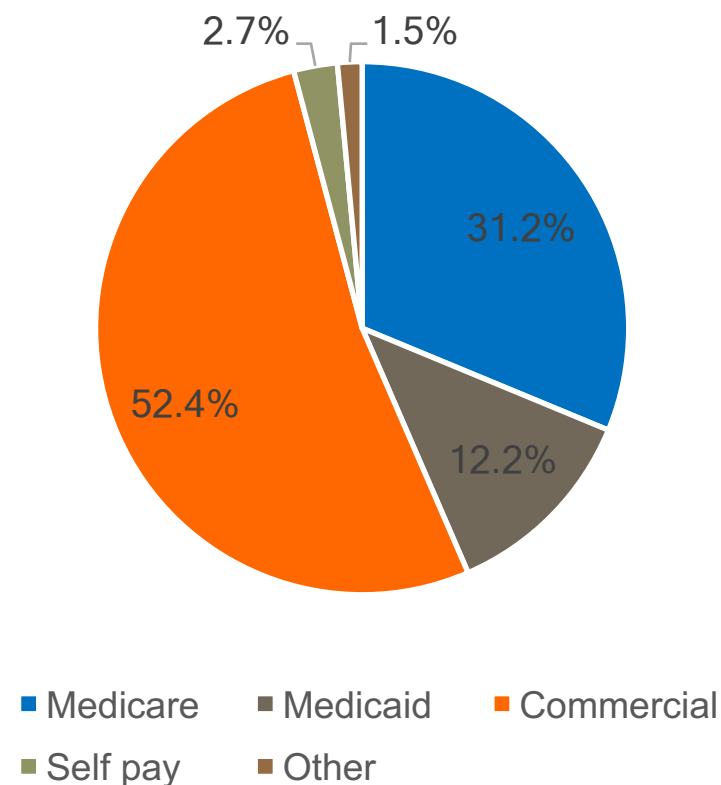
Source: WA State CHARS Database, excludes newborns and swing, zip codes 98024, 98045 98065

The PSA (and District) have a strong commercial inpatient percentage. Medicaid is exceptionally low.

King County Discharges by Payer, 2014-2016



PSA Discharges by Payer, 2014-2016



Source: WA CHARS, excludes newborns and swing

Within the PSA, the opening of Swedish Issaquah in 2011 has dramatically impacted the market share of SVH. Swedish in total now has nearly a 53% inpatient market share. Overlake has also lost about 50% of its market share.

Hospital	2010	2011 (opening of Swedish Issaquah)	2012	2013	2014	2015 (opening of new SVH)	2016
Snoqualmie Valley Hospital	6.3%	6.8%	5.6%	4.9%	2.3%	2.0%	1.5%
Swedish Issaquah		0.9%	25.0%	32.7%	36.7%	40.0%	41.7%
Swedish First Hill/Ballard	9.6%	12.1%	6.9%	7.6%	7.3%	7.6%	7.6%
Swedish Cherry Hill	2.4%	3.1%	2.1%	2.7%	2.8%	4.1%	3.7%
Swedish Subtotal	12.0%	16.1%	34.0%	43.0%	46.8%	51.6%	52.9%
Overlake Hospital Medical Center	52.5%	47.7%	33.9%	30.3%	29.0%	25.8%	24.6%
Seattle Children's	5.5%	4.6%	4.8%	3.1%	4.3%	3.9%	4.3%
UW Medical Center	3.8%	4.8%	4.1%	3.0%	2.8%	2.8%	2.9%
BHC Fairfax Hospital - Kirkland	1.1%	1.6%	1.6%	1.4%	1.9%	2.2%	2.5%
EvergreenHealth Medical Center	5.7%	4.9%	3.1%	3.1%	3.5%	2.8%	2.4%
UW/Harborview Medical Center	4.3%	4.6%	4.2%	2.8%	2.6%	2.4%	2.2%
Virginia Mason Medical Center	3.0%	3.2%	3.4%	3.6%	2.9%	2.7%	2.1%
UW/Valley Medical Center	1.3%	1.5%	1.0%	1.3%	0.7%	0.8%	1.1%
All Others	4.4%	4.2%	4.4%	3.6%	3.3%	3.1%	3.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: WA State CHARS Database, 2010-2016. Excludes newborns and swing bed patient discharges. PSA defined as zip codes 98045, 98065 and 98024. Swedish Issaquah opened in late 2011.

Four hospitals – Issaquah, Overlake, Swedish First Hill and Seattle Children’s -- have more than a 75% inpatient market share of the PSA. Each of these hospitals has experienced significant patient day growth during the 2012-2016 timeframe. The same hospitals, plus Evergreen, dominate within the larger District.

Total Patient Days by Select Hospitals, 2012-2016

Hospital Name	2012	2013	2014	2015	2016	% Change 2012-2016
Snoqualmie Valley Hospital	514	389	198	198	145	-72%
Seattle Childrens	69,760	70,245	77,245	79,833	86,110	23%
Overlake Hospital Medical Center	59,990	58,001	59,155	60,520	61,697	3%
Swedish Issaquah	9,765	12,465	14,143	15,978	20,477	110%
Swedish First Hill/Ballard	98,980	102,327	117,312	130,880	149,385	51%
Evergreen Health Medical Center	50,955	52,046	55,316	60,314	62,538	23%
Total of Selected Hospitals	239,009	243,427	268,053	287,409	317,814	33%

Source: WA CHARS, excludes newborns and swing

Inpatient use rates (inpatient days per 1,000 residents) within both the PSA and the District are, in general, considerably lower than in the rest of King County or the state.

	2010	2011	2012	2013	2014	2015	2016	Average 2012- 2016
Total Use Rate								
PSA	229.1	250.2	238.0	242.1	230.9	234.5	258.1	240.7
District	233.2	257.1	239.2	239.7	234.6	243.0	274.6	246.2
King County	319.9	329.8	315.5	312.1	322.8	332.6	338.2	324.2
WA State	336.0	336.8	332.1	328.5	333.2	344.9	351.9	338.1
Age 0-64 Use Rate								
PSA	179.3	185.1	180.9	175.9	181.3	173.1	193.7	181.0
District	176.3	190.9	180.1	176.7	184.8	175.3	204.1	184.2
King County	222.7	231.4	222.3	214.8	226.8	232.6	238.1	226.9
WA State	154.1	155.2	155.7	158.6	160.5	169.4	174.2	163.7
Age 65+ Use Rate								
PSA	864.5	1,042.1	898.9	972.1	751.1	845.7	867.6	867.1
District	951.0	1,049.3	910.3	918.6	742.8	897.5	920.3	877.9
King County	1,115.2	1,109.7	1,031.2	1,035.2	1,012.7	1,027.3	1,010.7	1,023.4
WA State	1,097.9	1,069.6	1,037.1	1,020.6	997.8	1,017.2	1,010.1	1,016.6

Source: WA State CHARS Database, 2010-2016. Excludes newborns and swing bed patient days. PSA defined as 98024, 98045, and 98065. District defined as zip codes 98045, 98065, 98024, 98014 and 98050.

According to Truven data (2014), the largest volume outpatient services in both the PSA and the District are lab, PT, and imaging. More than 6,000 ED visits were generated by PSA residents.

2014 PSA Outpatient Volumes

Service	Total
Lab Tests	236,708
Physical Therapy sessions	81,503
X-Ray Procedures	17,088
Outpatient Surgery procedures, minor	12,060
Ultrasound - Other procedures	5,228
Mammography Procedures	4,936
Outpatient Surgery procedures, major	4,803
CT Procedures	4,594
Emergency Department	6,001
MRI Procedures	2,757
Gastroentero Endoscopy Procedures	2,682
Ultrasound - OB procedures	2,030
Echocardiography	1,327
Chemotherapy visits	1,254
Occupational Therapy sessions	443
Radiation Oncology sessions	365
Cardiac Rehab visits	320
Nuclear Medicine	200
Cardiac Catheterization	98

Source: Truven Health Analytics, 2014 for zip codes 98024, 98045 and 98065

Using various physician to population ratios adjusted for local demographics, and assuming 100% of PSA residents stayed locally for care, more than 33 Primary Care providers are needed in 2026. A number of specialties can also be supported.

Primary Care and Specialist Provider Need

Physician Specialist	Current	2026
Family Practice	12.0	15.6
Internal Medicine	7.5	11.6
Pediatrics	5.3	6.1
SUM: All Primary Care	24.7	33.3
OB/GYN	3.8	4.3
General Surgery	2.6	3.6
Psychiatry	2.9	3.5
Orthopedics	2.1	2.9
Ophthalmology	1.6	2.6
Cardiology	1.5	2.5
Gastroenterology	1.2	1.8
Urology	1.0	1.6
ENT	1.0	1.4
Oncology	0.8	1.4
Dermatology	1.0	1.3
Neurology	0.9	1.1
Neurosurgery	0.9	1.1

Truven estimates that PSA residents generated nearly 130,000 office visits in 2014.

	Est. Number of Visits	Use Rate (per 100 residents)
OFFICE MEDICAL VISIT, EST PATIENT	111,681	352.0
OFFICE MEDICAL VISIT, NEW PATIENT	17,176	54.1
Total	128,857	406.2

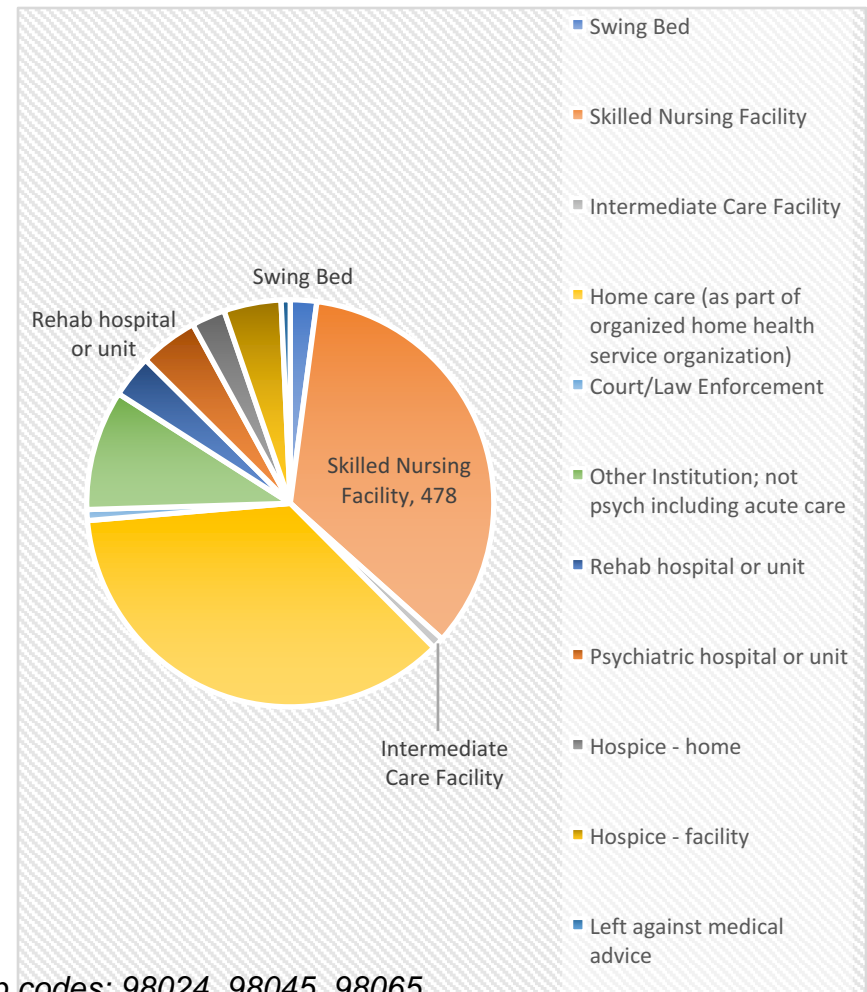
Source: Truven Health Analytics, 2014 for zip codes 98024, 98045 and 98065
Includes CPT codes: 99201-99205 and 99211-99215

UNDERSTANDING POST-ACUTE OPPORTUNITIES

According to CHARS (2014-2016), 21% of all discharges of PSA residents had a disposition other than home or expired. Home Health and SNF were the largest dispositions. The pattern holds in the larger District, with more than 580 discharges to SNF.

2014-2016 PSA Discharges by Disposition

Home care (as part of organized home health service organization)	500	36%
Skilled Nursing Facility	478	35%
Other Institution; not psych including acute care	132	10%
Psychiatric hospital or unit	64	5%
Hospice - facility	63	5%
Rehab hospital or unit	47	3%
Hospice - home	37	3%
Swing Bed	29	2%
Intermediate Care Facility	13	1%
Court/Law Enforcement	12	1%
Left against medical advice	10	1%



Source: WA CHARS, excludes discharges to home, expired and zip codes: 98024, 98045, 98065

Of the PSA discharges to SNFs, Medicare was the payer for 84%.

Unit	Commercial	HMO	Medicaid	Medicare	Self-Pay/Other	Total
Acute	47	4	18	396	9	474
Psychiatric	0	0	0	0	0	0
Rehab	0	0	0	2	0	0
Swing Bed	0	0	0	0	0	0
Total/All	47	4	18	398	9	474

Source: WA State CHARS Database, 2014-2016. Excludes normal newborns.
PSA defined as zip codes 98045, 98065 and 98024.

There is only one SNF located within the PSA and District. While its patient days have increased in recent years, in 2015 (last year of available data) it was still below 80% occupancy. Its Medicare runs consistently below 10-11%

**Regency North Bend Rehabilitation Center
Total Patient Days, Medicare Patient Days and Occupancy, 2010-2015**

Year	No. of Beds	Total Patient Days	Medicare Days	% Medicare	Occupancy
2010	64	14,702	1,598	10.9%	62.9%
2011	64	13,525	1,050	7.8%	57.9%
2012	64	13,889	827	6.0%	59.5%
2013	64	14,899	1,243	8.3%	63.8%
2014	64	18,596	1,357	7.3%	79.6%
2015	64	18,414	1,697	9.2%	78.8%

Source: DSHS Medicaid Cost Reports, Schedule N, 2010-2015

MARKET VOLUME PROJECTIONS 2026

Assuming 2014-2016 use rates remain relatively flat, HFPD projects that the ADC of PSA residents hospitalized will be 36 in 2026, this is an increase of more than 10 patients per day over actual 2016. For the District HFPD projects a 2026 ADC of 41.

	2016	2021	2026
Total PSA Resident Patient Days	9,396	11,042	13,252
ADC	25.7	30.3	36.3

Source: HFPD. District defined as zip codes 98045, 98065, 98024.

Patient days excludes newborns and swing bed patient days.

Other key PSA resident 2026 volume assumptions per Truven:

- In 2026, HFPD conservatively projects:
 - 161,000 office visits
 - 7,500 ED visits
 - 6,000 surgeries

Using the DOH’s nursing home to bed population ratio of 40 beds per 1,000 population, and due to the anticipated aging of the 70+ population, by 2026, the PSA “needs” an additional 120 beds. Without more beds, the PSA will be significantly below State target of 40 beds per 1,000 residents age 70+.

Geography	Bed to Population Ratio (2026); 70+ population
PSA	13.8
King County	20.4
WA State	20.8

Source: CN Program Nursing Home Bed to Population Ratios (King County and WA State)