



Health Analytics and Vital Records

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Alaska Facts and Figures

Hospital Stays in Washington State by Alaska Residents, 2016-2018

Background

Information on how often and why Alaskan residents stay as inpatients in Washington State hospitals can provide some insight into the Alaska health care system. The Commonwealth Fund 2018 Scorecard on State Health System Performance found that compared with the US average, Alaska ranks lower in access and affordability of care (including rates of insurance coverage and out of pocket expenses) and in overall health system performance (43 indicators covering: access and affordability, prevention and treatment, avoidable hospital use and cost, and healthy lives).¹ These factors may lead Alaska residents to seek care in nearby states. We examined the volume and reasons for visits to Washington hospitals by Alaska residents from 2016 to 2018.

Methods

The Health Analytics and Vital Records Section (HAVRS) purchased data from the 2016, 2017 and 2018 Washington Comprehensive Hospital Abstract System ([CHARS](#))² in order to examine hospital care obtained by Alaska residents in Washington State. CHARS collects record level information on inpatient community hospital stays in Washington (WA) and is approximately equivalent to the inpatient hospitalization data obtained for Alaska (AK) hospitals as part of the Alaska Health Facilities Data Reporting ([HFDR](#)) Program³. CHARS and HFDR also use the same UB-04 billing form⁴ format for data submission. Hospital visits by AK residents in the CHARS data were examined by demographic variables including gender and age group, as well as the Public Health Region of the patient's residence. Number of stays and billed charges, visit counts for hospital location, expected primary payers, and elective admissions are provided. The reasons for the hospital stay are described with a list of top ten diagnosis-related groups ([DRG](#))⁵, and then all of the DRGs are further grouped in a listing of major diagnostic categories ([MDC](#))⁶, and both lists are compared to hospital stays in AK in the same groupings. Please see the *Definition Guide* for explanations of some medical terms used in this document.

Results

Demographics – Inpatients

- From 2016 through 2018, the AK residents that had hospital visits in WA were 56% male and 44% female (Figure 1);
 - Conversely, AK residents who had hospital visits in AK were 56% Female and 44% Male.
- Persons age 65 and older made up about 11% of the Alaska resident population from 2016 to 2018, yet accounted for 32% of AK resident hospital visits in WA compared to 25% in AK during this same time period (Figure 2);
- Over the three years analyzed, residents of the Southeast AK Public Health Region stayed at WA hospitals most frequently (43% of all AK resident stays in WA and 31% of billed charges), followed by residents from the Anchorage (22% of stays and 28% of charges) and Interior (13% of stays and 15% of charges) regions (Table 1).
 - In comparison, Anchorage residents made up 40% of stays in AK hospitals, Southeast patients made up 9%, and Interior residents had 11% of AK hospital stays from 2016 to 2018.[‡]
- From 2016 to 2018, 1,130 Southeast region residents stayed at Washington hospitals (Table 1) compared to 946 Southeast region residents who went to Anchorage for a hospital stay.[‡]

[‡] Data not shown in a table or figure

Figures 1 and 2: Alaska Resident Stays at WA Hospitals compared to Stays at AK Hospitals, by Gender and Age Group Percentages, 2016-2018

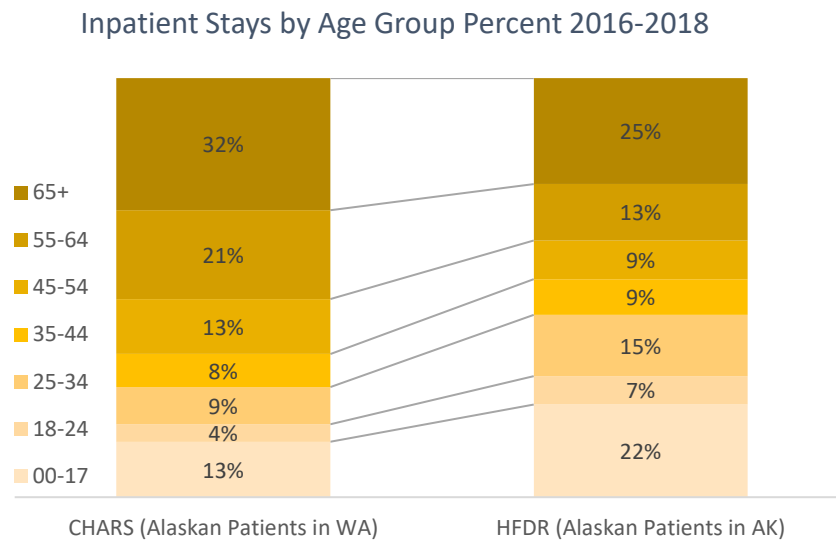
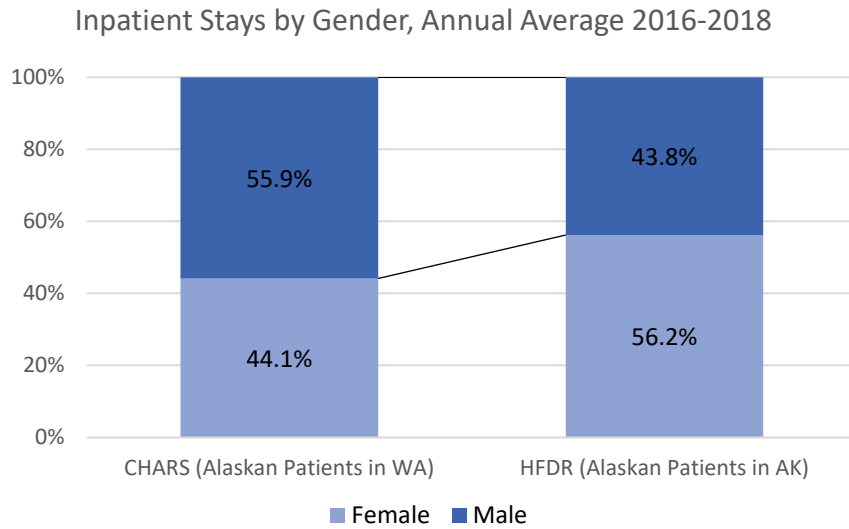


Table 1: Inpatient Discharge Stays and Billed Charges in WA for AK Resident by Region, 2016-2018

Patient's Alaska Public Health Region	Number of Stays		Billed Charges	
	Annual Average	Percent	Annual Average in Millions	Percent
Anchorage	569	22%	\$86.7M	28%
Gulf Coast	210	8%	\$24.8M	8%
Interior	351	13%	\$47.4M	15%
Matanuska-Susitna	200	8%	\$28.5M	9%
Northern	68	3%	\$11.4M	4%
Southeast	1,130	43%	\$96.7M	31%
Southwest	85	3%	\$16.6M	5%
Total	2,613	100%	\$312.1M	100%

Hospital Visit Details[‡]

- Alaska residents most frequently had hospital stays in Seattle (83%) compared to other communities of WA (2,161 of the 2,614 annual average stays of AK resident in Washington).
- Among AK resident inpatient stays in WA, those at Seattle hospitals accounted for 88% of the 20,569 hospitalization days annually and 90% of the \$312 million billed charges annually.
- From 2016 to 2018, almost 47% of the AK resident stays at WA hospitals were considered elective, which means that the patient's condition permits adequate time to schedule the services, as defined in the American Hospital Association's National Uniform Billing Committee UB-04 Data Specifications Manual.⁴
 - By contrast, elective admissions by AK residents at Alaska hospitals made up 22% of all admissions.
- Over the three year period, the expected primary payer that was most common for AK resident inpatients at WA hospitals was Medicare (33%), followed by Commercial Insurance (30%) and Medicaid (21%).
 - For AK residents staying at a hospital in Alaska during the same time period, the most common primary payers were Medicaid (36%), Medicare (27%), and Commercial Insurance (25%).
- From 2016 through 2018, the average length of stay of an AK resident in a WA hospital was 7.9 days, and the average billed charges by the hospital for that stay was \$119,392.
 - AK residents in AK hospitals averaged 7.0 days and \$57,467 billed charges per stay.

Reasons for Washington Hospital Visits

Table 2: Top 10 Diagnosis Related Groups (DRG) for AK Resident Stays in WA Hospitals compared to AK Resident Stays in AK Hospitals, Annual Averages and Medians, 2016-2018

Rank	Diagnosis-Related Group Description	CHARS: Alaskans in WA				HFDR: Alaskans in AK		
		Annual Stays	Annual Billed Charges	Median LOS (Days)	Median Billed Charge	Annual Stays in AK	Median LOS in AK	Median Charge in AK
1	Major Hip and Knee Joint Replacement or Reattachment of Lower Extremity without MCC	148	\$9,945,040	2	\$64,758	1,887	2	\$82,164
2	Craniotomy and Endovascular Intracranial Procedures without CC/MCC	48	\$8,205,698	3	\$144,346	53	2	\$71,871
3	Septicemia or Severe Sepsis without Mechanical Ventilation >96 Hours with MCC	45	\$3,769,686	6	\$57,111	1,819	5	\$55,702
4	Major Joint/Limb Reattachment Procedure of Upper Extremities	40	\$2,679,218	1	\$64,643	218	1	\$89,418
5	Craniotomy and Endovascular Intracranial Procedures with MCC	36	\$8,627,139	7	\$176,167	76	8	\$157,154
6	Seizures without MCC	34	\$1,275,752	3	\$34,801	299	2	\$25,088
7	Spinal Fusion except Cervical without MCC	32	\$5,071,076	3	\$153,482	446	3	\$156,877
8	Percutaneous Cardiovascular Procedures with Drug-Eluting Stent without MCC	31	\$2,269,434	2	\$67,559	386	2	\$103,226
9	Chemotherapy without Acute Leukemia as Secondary Diagnosis with CC	29	\$1,767,779	4	\$39,600	107	4	\$54,617
10	Craniotomy and Endovascular Intracranial Procedures with CC	28	\$5,221,457	3	\$153,967	29	3	\$86,120

Note: CC = Complication or Comorbidity, MCC = Major Complication or Comorbidity, LOS = Length of Stay

- "Major Hip and Knee Joint Replacement" was the most common DRG in WA for AK residents with 148 average annual stays, which was 6% of the 2,614 total stays by Alaskans (Table 2).
 - AK residents in AK hospitals had 1,887 annual stays for "Major Hip and Knee Joint Replacement" (Table 2) which was 3% of the 62,616 total stays in AK by Alaskans. The median charge for "Major Hip and Knee Joint Replacement" in Alaska was 27% higher than in WA (\$82,164 in AK and \$64,758 in WA).
- When the DRG codes for Alaskan residents in WA and for Alaska residents in AK are further grouped into the 25 Major Diagnosis Categories (MDCs), a comparison of all of the stays can be made. In Table 3, the MDC category that had the highest percentage of stays occurring in Washington (Percent WA) is sorted first.

[‡] Data not shown in table or figure

- Among AK resident stays in WA and Alaska hospitals combined, stays for burns had the highest percentage in WA (38%), followed by bone marrow related diseases that do not have a precise cancer diagnosis (Myeloproliferative Diseases & Disorders, Poorly Differentiated Neoplasm, 30%).
- AK resident stays for diagnoses related to birth and newborns, and those for Human Immunodeficiency Virus had the lowest percentage in WA among WA and Alaska combined stays.

Table 3: Major Diagnostic Categories (MDC) for AK Resident Stays in WA Hospitals compared to AK Resident Stays in AK Hospitals, Annual Average, 2016-2018

Major Diagnostic Categories	AK Residents				
	Stays in WA		Stays in AK		Percent WA WA/(WA+AK)
	Annual Stays	Percent	Annual Stays	Percent	
Burns	30	1.1%	49	0.1%	38%
Myeloproliferative Diseases & Disorders, Poorly Differentiated Neoplasm	130	5.0%	309	0.5%	30%
Diseases & Disorders of the Male Reproductive System	22	0.8%	188	0.3%	10%
Diseases & Disorders of the Nervous System	358	13.7%	3,198	5.1%	10%
Diseases & Disorders of Blood, Blood Forming Organs, Immun. Disorders	49	1.9%	468	0.7%	9%
Diseases & Disorders of the Ear, Nose, Mouth & Throat	57	2.2%	577	0.9%	9%
Diseases & Disorders of the Circulatory System	397	15.2%	4,993	8.0%	7%
Diseases & Disorders of the Musculoskeletal System & Connective Tissue	507	19.4%	6,523	10.4%	7%
Multiple Significant Trauma	15	0.6%	217	0.3%	6%
Diseases & Disorders of the Hepatobiliary System & Pancreas	103	3.9%	1,547	2.5%	6%
Diseases & Disorders of the Kidney & Urinary Tract	104	4.0%	1,650	2.6%	6%
Diseases & Disorders of the Digestive System	204	7.8%	4,349	6.9%	4%
Injuries, Poisonings & Toxic Effects of Drugs	54	2.1%	1,245	2.0%	4%
Factors Influencing Health Status & Other Contacts with Health Services	34	1.3%	801	1.3%	4%
Diseases & Disorders of the Eye	3	0.1%	79	0.1%	4%
Endocrine, Nutritional & Metabolic Diseases & Disorders	58	2.2%	1,701	2.7%	3%
Infectious & Parasitic Diseases, Systemic or Unspecified Sites	117	4.5%	3,692	5.9%	3%
Diseases & Disorders of the Female Reproductive System	16	0.6%	547	0.9%	3%
Diseases & Disorders of the Respiratory System	125	4.8%	4,964	7.9%	2%
Diseases & Disorders of the Skin, Subcutaneous Tissue & Breast	32	1.2%	1,498	2.4%	2%
Alcohol/Drug Use & Alcohol/Drug Induced Organic Mental Disorders	22	0.8%	1,080	1.7%	2%
Mental Diseases & Disorders	39	1.5%	4,461	7.1%	1%
Pregnancy, Childbirth & the Puerperium	74	2.8%	9,267	14.8%	1%
Newborns & Other Neonates With Condition originating In Perinatal Period	64	2.4%	9,037	14.4%	1%
Ungroupable	0	0.0%	153	0.2%	0%
Human Immunodeficiency Virus Infections	0	0.0%	23	0.0%	0%
	2,614	100.0%	62,616	100.0%	4%

Discussion

From 2016 to 2018, AK residents averaged 2,614, or 0.4%, of all WA hospital stays a year in WA hospitals. A higher proportion of AK residents who had stays at WA hospitals were male, age 55 years and older, and lived in the Southeast Alaska Public Health region.

The most common expected primary payer across the 3 years examined for WA hospital stays was Medicare compared to Medicaid for AK stays, possibly reflecting the higher percentage of older aged AK residents with WA hospital stays. There was a large percentage of female AK residents staying at AK hospitals compared to WA hospitals, which may be due to stays for child

birth being the leading cause of hospitalization in Alaska (data not shown). When diagnoses related to child birth are removed, the percentage of female AK resident staying at AK hospitals drops to 49%.

The Major Diagnostic Categories may provide some insight into gaps of available services in AK that are being sought out in Washington. When combined, the Alaskan inpatients averaged 4% in WA and 96% in AK. The largest number of Alaskans seeking inpatient care in WA were for the MDC Diseases & Disorders of the Musculoskeletal System & Connective Tissue, which was above average at 7% of the combined inpatients. At the high end, 38% or about 2 out of every 5 patients with a Burn MDC as well as 30% of combined patients with bone marrow related diseases without a precise cancer diagnosis had a hospital stay in WA.

There are some limitations with these data that should be noted. As with HFDR, total charges in CHARS is the amount billed by the hospital to the primary payer, and includes both covered and non-covered charges. Payers commonly negotiate a reduced amount making the total charges not the amount paid to the hospital. Healthcare costs in AK are higher than in other areas,⁷ so it is important to note that we did not control for type of service for the costs shown in this document, thus they are not directly comparable between AK and WA.

Also note that we did not conduct statistical significance tests to compare any differences among Alaska residents who stayed at WA hospitals compared to AK hospitals. As with HFDR, military hospitals do not submit data on hospital stays to CHARS. Finally, an individual patient can be counted more than once in the time period examined because both CHARS and HFDR use discharge (stay) billing records and a patient will be billed separately for each stay.

For additional information and tables of visits and stays at Alaska hospital and ambulatory surgery centers for the HFDR data, please see the [HFDR annual report](#).⁸

Definition Guide

Craniotomy - surgical opening of the skull.⁹

Circulatory System – Includes the heart, blood, blood vessels, lymph system (vessels and glands) that circulates blood and lymph through the body.¹⁰

Connective Tissue – Includes bones, ligaments, tendons cartilage and fat tissue. These tissues maintain the form of the body and give it internal support.¹¹

Drug-Eluting Stent - Stents are small, expandable tubes that treat narrowed arteries in the body. Drug eluting stents are stents coated with drugs that interrupt the re-narrowing of the blood vessel.¹²

Endocrine - Hormones and the glands that make and secrete them. Hormones travel in the bloodstream and affect distant organs¹³

Endovascular Intracranial Procedures - Intracranial vascular treatments use image-guided catheter navigation of the network of blood vessels to treat conditions affecting the brain.¹⁴

Hepatobiliary - Having to do with the liver plus the gallbladder, bile ducts, or bile¹⁵

Metabolic – Related to or affected by metabolism. Metabolism consists of the physical and chemical processes in an organism (such as the human body) by which energy is made available.^{16,17}

Musculoskeletal system – The system of muscles, bones and joints that move the body.¹⁸

Myeloproliferative - Bone marrow or blood disorders (such as leukemia) related to excessive or abnormal production by the bone marrow.¹⁹

Neoplasm - An abnormal mass of tissue that results when cells divide more than they should or do not die when they should. Neoplasms may be benign (not cancer), or malignant (cancer). Also called tumor.²⁰

Organic Mental Disorders - Also referred to as chronic Organic Brain Syndromes, are diseases of the brain that can lead to severe mental or behavioral problems²¹

Nervous System – Made up of the brain, spinal cord and nerves throughout the body,²²

Percutaneous Cardiovascular Procedures – Includes several procedures such as balloon or laser angioplasty (surgical repair of a blood vessel)²³ to restore blood flow to the heart²⁴

Perinatal - The phase surrounding the time of birth, from the twentieth week of gestation to the twenty-eighth day of newborn life²⁵

Puerperium - The period between childbirth and the return of the uterus to its normal size²⁶

Septicemia - invasion of the bloodstream by infectious microorganisms such as bacteria and their toxins causing symptoms including chills, fever, and weakness²⁷

Sepsis – A life-threatening illness caused by chemicals released into the bloodstream by your immune system to fight an infection. These chemicals cause inflammation throughout your body and symptoms such as a fever, and a high heart rate and breathing rate.²⁸

Subcutaneous Tissue - A layer of loose, irregular connective tissue immediately beneath the skin; it contains fat cells except in parts of the heart, the eyelids, penis, and scrotum²⁹

*This report was prepared by the Health Analytics Unit of the Alaska Health Analytics and Vital Records Section
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¹ Commonwealth Fund 2018 Scorecard on State Health System Performance. Available at:

https://interactives.commonwealthfund.org/2018/state-scorecard/files/Radley_State_Scorecard_2018.pdf.

² Washington Comprehensive Hospital Abstract System. See:

<https://www.doh.wa.gov/DataandStatisticalReports/HealthcareinWashington/HospitalandPatientData/HospitalDischargeDataCHARS>

³ Health Facilities Data Reporting System. See: <http://dhss.alaska.gov/dph/VitalStats/Pages/HFDR/default.aspx>

⁴ National Uniform Billing Committee Official Data Specifications Manual (UB-04). See: <http://www.nubc.org/subscriber/index.dhtml>

⁵ 2019 Diagnostic Related Groups List (MS-DRG v36.0). Available at: <https://www.icd10data.com/ICD10CM/DRG>

⁶ ICD-10-CM/PCS MS-DRG v35.0 Definitions Manual. Available at: https://www.cms.gov/ICD10Manual/version35-fullcode-cms/fullcode_cms/P0001.html

⁷ Health Care Cost Institute. 2017 Health Care Cost and Utilization Report. February 2019. Available at:

<https://www.healthcostinstitute.org/research/annual-reports/entry/2017-health-care-cost-and-utilization-report>

⁸ State of Alaska, Department of Health and Social Services, Alaska Division of Public Health, Health Analytics and Vital Records. Alaska Health Facilities Data Reporting Program 2016 and 2017 Annual report.

<http://dhss.alaska.gov/dph/VitalStats/Documents/PDFs/HFDR%20Annual%20Report%202016-2017.pdf>

⁹ <https://www.merriam-webster.com/dictionary/craniotomy>

¹⁰ <https://www.dictionary.com/browse/circulatory-system>

¹¹ <https://www.britannica.com/science/connective-tissue>

¹² <https://www.webmd.com/heart-disease/guide/stents-types-and-uses#2>

¹³ <https://www.medicinenet.com/script/main/art.asp?articlekey=25210>

¹⁴ <https://www.radiologyinfo.org/en/info.cfm?pg=intracranialvasc>

¹⁵ <https://www.medicinenet.com/script/main/art.asp?articlekey=19515>

¹⁶ <https://www.dictionary.com/browse/metabolic>

¹⁷ <https://www.dictionary.com/browse/metabolism>

¹⁸ <https://www.thefreedictionary.com/musculoskeletal+system>

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- 19 <https://www.merriam-webster.com/dictionary/myeloproliferative>
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