

SETTING
THE STAGE

CHILDREN'S EMERGENCY DEPARTMENT SERVICES

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Children’s Emergency Department Services: Setting the Stage for Tiers Development

Contents

1.0	Providers of Children's ED Services	2
2.0	The Population.....	3
3.0	Utilization of ED Services by BC Children	3
3.1	Pediatric ED Visits & Visit Rates.....	4
3.2	Ages & Disposition of Children Utilizing ED Services.....	5
3.3	Acuity & Reasons for Children Utilizing ED Services	5
3.4	ED Service Locations.....	7
4.0	References	8
	Appendix 1: ED and Med/Surg Visits and Days by Facility	9
	Appendix 2: Map of Pediatric ED Visits in BC	12
	Appendix 3: Total ED & Estimated Pediatric ED Visits by Hospital.....	13
	Appendix 4: Pediatric Inpatient Beds in B.C.	16

HOW TO CITE THE CHILDREN’S EMERGENCY DEPARTMENT SERVICES:

We encourage you to share these documents with others and we welcome their use as a reference. Please cite each document in the module in keeping with the citation on the table of contents of each of the three documents. If referencing the full module, please cite as:

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Children's Emergency Department Services: Setting the Stage for Tiers Development

The Children's Emergency Department Tiers of Service module is made up three components:

1. Setting the Stage for Tiers Development (provides the context) **(this document)**
2. Tiers in Brief to Support System Planning (high-level description of the tiers, including responsibilities and requirements)
3. Tiers in Full to Support Operational Planning (detailed description of the responsibilities and requirements at each tier)

1.0 Providers of Children's ED Services

Children's ED services are provided by an interdisciplinary team which includes physicians/nurse practitioners, nurses, allied health and other health care team members.

In BC, physicians that work in EDs have one of three types of qualifications:

1. Royal College of Physicians and Surgeons of Canada (RCPSC)-certified.
 - a) Emergency Medicine specialists (FRCP(EM))
 - Physicians that have completed a 5 year post-graduate Emergency Medicine residency and RCPSC Emergency Medicine examination.
 - Pediatrics is a core component of all Emergency Medicine residency programs.
 - b) Pediatric Emergency Medicine specialists (FRCP(PEM))
 - FRCP-certified specialists in Pediatrics or Emergency Medicine that have completed an additional fellowship in Pediatric Emergency Medicine and the RCPS Pediatric Emergency Medicine examination.
2. Canadian College of Family Physician-certified (CCFP(EM))
 - Physicians that have completed a one-year post-graduate Emergency Medicine fellowship after a two-year Family Medicine residency. Must also have completed the CCFP(EM) examination.
3. Family physicians
 - Smaller rural and community hospitals may be staffed by family physicians who work in the ED on a part-time rotating basis.
 - Basic experience is a core component of family medicine training.

2.0 The Population

Nearly 800,000 children ages 0-16.9 years live in BC, making up 17% of the population. The highest number is in the FHA (329,166) and the highest percentage of children to total population is in the NHA (21%). See Table 1.

Table 1: Population, 0 – 16.9 Years & Total Population, by HA (PEOPLE 2016, bcstats.ca)

HA	Age					Total, all Ages	% 0 - 16.9 Yrs within HA	% 0 - 16.9 Yrs within BC
	<1	1-1.9	2-13.9	14-16.9	Total 0-16.9			
Interior	6,212	6,217	81,575	21,788	115,792	743,501	16%	15%
Fraser	18,659	19,211	231,898	59,398	329,166	1,770,531	19%	42%
Vancouver Coastal	10,537	9,551	113,576	31,572	165,236	1,167,877	14%	21%
Vancouver Island	6,429	6,438	82,315	21,135	116,317	775,489	15%	15%
Northern	3,241	3,402	41,784	10,015	58,442	282,726	21%	7%
Total	45,078	44,819	551,148	143,908	784,953	4,740,124	17%	100%
% Total 0-16.9 Yrs	6%	6%	70%	18%	100%			

3.0 Utilization of ED Services by BC Children

Two sources of provincial-level data were used to describe the utilization of ED services by children. Unfortunately both sources have limitations:

1. National Ambulatory Care Report System (NACRS): ED data collected via NACRS is available at 29 sites in BC (2015/16). These 29 sites represent 27% of the EDs in B.C. (many of the NACRS sites are the higher volume EDs) and 67% of the total ED visits. The NACRS provides patient and aggregate level data (including a breakdown of several variables by age).
2. Health Authority Management Information System (HAMIS): HAMIS data has been collected for several years but only provides aggregate-level data on total visits.

Highlights of the data are provided in the next section. Detailed data and a visual representation (map) are available in Appendices 1 - 3.

3.1 Pediatric ED Visits & Visit Rates

In 2015/16, there were approximately 2.35 million visits to EDs in B.C. hospitals (HAMIS data). Percentages from the 2015/16 NACRS data were applied to the 2015/16 BC ED visit data to help understand the utilization of EDs by children ages 0 – 16.9.

The HAMIS/NACRS data suggests:

- There are an estimated 367,000 pediatric visits (children ages 0 - 16.9 years) to BC EDs each year (~1,000 visits per day). This represents 16.7% of total ED visits. See Table 2 for HA level data and Appendix 3 for hospital-level data on total ED and pediatric ED visits.
- The pediatric ED visit rate averages 467 visits per 1,000 children per year in BC. It ranges from 347 per 1,000 in the Fraser Health Authority (FHA) to 751 in the Northern Health Authority (NHA). See Table 2, including notes 3 and 4.

Table 2: Total ED and Estimated Pediatric ED Visits (2015/16)

HA	Total ED Visits (Adults & Children)	Pediatric ED Visits (Est.)	% Pediatric ED Visits/Tot ED Visits	% Provincial Pediatric ED Visits	Population 0-16.9 years	Pediatric ED Visits (Est.)/1,000 Population Aged 0 – 16.9 years (HA)	Pediatric ED Visits (Est.)/1,000 Population Ages 0 – 16.9 years (HSDA)
IHA	494,417	74,061	15.0%	20.2%	115,792	639	EK: 935 KB: 826 OK: 477 TCS: 719
FHA	700,945	114,293	16.3%	31.2%	329,166	347 ^{Note 3}	FE: 452 FS: 336 FN: 305
VCH	429,610	32,478	7.56%	8.9%	165,236	485 ^{Note 3}	Coastal: 428
BCCH	48,612	47,673	98.1%	13.0%			Richmond: 215 ^{ote 3} Van: 620 ^{Note 3}
VIHA	395,973	54,444	13.8%	14.8%	116,317	468	NVI: 470 CVI: 625 SVI: 347
NHA	283,190	43,891	15.5%	12.0%	58,442	751	NE: 675 NI: 644 NW: 1,018
Total	2,352,747	366,841	16.7%	100.0%	784,953	467	467

Notes re Table 2:

1. Total ED visits (adults and children) were based on 2015/16 HAMIS data.
2. Estimated pediatric ED visits were based on 2015/16 NACRS data for sites where NACRS data was available. Where NACRS data was not available, the provincial average of 15.48% (excludes “outlier sites” as listed in Appendix 3) of total ED visits was utilized.
3. VCH and BCCH visit data was combined to determine the VCH pediatric visit rate. Given the provincial role of BCCH and the fact that a significant number of children from FHA also present to BCCH, the VCH visit rate is likely overstated and the FHA rate understated. At an HSDA level, the BCCH visits were assumed to be from Vancouver. This likely overstates the Vancouver visit rate and understates the rates from Richmond, Coastal and FHA Health Service Delivery Areas (especially Fraser North as it is closest to BCCH).
4. Estimated pediatric ED visits/1,000 population is significantly higher in areas outside the Lower Mainland and Victoria. This may reflect limitations in alternative options for obtaining medical care.
5. Population estimates were based on B.C. statistics from BC Stats for 2015.

Considering future population growth, these figures are expected to increase by 9% in the next 10 years. The predicted future rise in the number of ED visits may also be impacted by changes such as the availability of primary care services and the public's perception of the ability to obtain an assessment and diagnosis in the community within an appropriate time frame. These factors have historically increased the rate of ED visits faster than the rate of population growth.

3.2 Ages & Disposition of Children Utilizing ED Services

The highest proportion of pediatric ED visits was comprised of children ages 1 - 4 years of age (33% of the total child visits). See Table 3.

Of the pediatric visits, 91% were discharged home and 4% were admitted to hospital. A few were transferred to other hospitals for admission and/or left without being seen/treated.

Table 3: Ages of Pediatric ED Visits (NACRS data, 2015/16)

Age	% Provincial Pediatric Visits	Disposition after ED Visit						Total
		% Discharged Home	% Left Before End of Visit	% Admitted to Site of Receiving ED	% Transferred to Another Site	% Death On/After Arrival	% Intra Facility TF to Day Surg/Clinic	
<1	11%	88%	3%	7.9%	0.5%	0.0%	0.6%	100%
1 - 4	33%	92%	4%	3.3%	0.2%	0.0%	0.4%	100%
5 - 9	24%	93%	4%	3.4%	0.2%	0.0%	0.3%	100%
10 - 14	21%	92%	3%	4.4%	0.2%	0.0%	0.2%	100%
15 - 16	11%	90%	3%	6.6%	0.4%	0.0%	0.1%	100%
Total	100%	91%	4%	4.4%	0.2%	0.0%	0.3%	100%

Notes re Table 3:

1. Data is based on 2015/16 NACRS data for the sites that are collecting NACRS data.
2. Royal Inland data was excluded from the NACRS data due to data quality issues.

3.3 Acuity & Reasons for Children Utilizing ED Services

The acuity levels of children presenting to EDs (NACRS data) are lower than those of adults. Patients triaged at Canadian Triage Acuity Scale (CTAS) levels 4 or 5 comprised 41% of total pediatric ED visits compared to 34% of total adult visits.

Assuming the NACRS percentages are representative of all B.C. EDs, it is estimated that 46,500 children/year present to B.C. EDs with high acuity conditions (CTAS 1 or 2), 166,000 with moderate acuity conditions (CTAS 3) and 152,000 with low acuity conditions (CTAS 4 and 5). See Table 4.

Table 4: CTAS Mix of Pediatric and Adult Visits (NACRS data, 2015/16)

CTAS	Description	Children (0-17)	Adults (18+)	Estimated Pediatric Visits/Year
1	Resuscitation	0.4%	1%	1,500
2	Emergent	12%	16%	45,000
3	Urgent	45%	48%	166,000
4	Less Urgent	39%	30%	144,000
5	Non-Urgent	2%	4%	8,000
6	Unknown	<1%	1%	2,000
Total		100%	100%	366,500

Note re Table 4: Data is based on 2015/16 NACRS data for the sites that are collecting NACRS data.

The NACRS data suggests:

- The reasons for pediatric ED visits are diverse; although the ten most frequent presenting complaints¹ make up 55% of total cases.
- Fever is the most frequent presenting complaint overall and for children ages 0 – 9 years, while upper extremity injuries are the most common for ages 10 and over.
- See Table 5.

Table 5: Most Frequent Presenting Complaints to ED, by Age Groups (NACRS data, 2015/16)

Rank	Top 10 Presenting Complaints								
	<1 Years Old			1-4 Years Old			5-9 Years Old		
	Presenting Complaint	Visits	%	Presenting Complaint	Visits	%	Presenting Complaint	Visits	%
1	Fever	5,180	19%	Fever	15,903	20%	Fever	7,187	12%
2	Cough/congestion	3,536	13%	Cough/congestion	8,452	10%	Abdominal pain	5,352	9%
3	Nausea and/or vomiting	2,433	9%	Nausea and/or vomiting	5,959	7%	Upper extremity injury	4,651	8%
4	Shortness of breath	2,006	7%	Laceration / Puncture	4,867	6%	Laceration / Puncture	3,589	6%
5	Head injury	1,503	5%	Shortness of breath	4,293	5%	Cough/congestion	3,539	6%
6	Rash	1,460	5%	Head injury	3,810	5%	Nausea and/or vomiting	3,204	5%
7	Inconsolable crying	873	3%	Rash	3,537	4%	Earache	2,689	4%
8	Diarrhea	745	3%	Upper extremity injury	3,203	4%	Head injury	2,263	4%
9	Minor complaints NOS	726	3%	Abdominal pain	2,365	3%	Lower extremity injury	2,127	4%
10	Constipation	478	2%	Earache	2,094	3%	Rash	1,930	3%
Total, top 10		18,940			54,483			36,531	
% NACRS visits, top 10			69%			67%			61%

¹ “Presenting complaint” refers to the symptom, complaint, problem or reason for seeking emergency medical care as identified by the patient. The Canadian Emergency Department Information System (CEDIS) Working Group developed the Presenting Complaint List (PCL). This information is captured in the NACRS data.

Rank	Top 10 Presenting Complaints					
	10 -14 Years Old			15 – 16 Years Old		
	Presenting Complaint	Visits	%	Presenting Complaint	Visits	%
1	Upper extremity injury	7,407	15%	Upper extremity injury	2,474	9%
2	Lower extremity injury	4,844	9%	Lower extremity injury	2,412	9%
3	Abdominal pain	4,145	8%	Abdominal pain	2,170	8%
4	Lower extremity pain	2,199	4%	Depression/Suicidal/deliberate self harm	1,403	5%
5	Head injury	2,196	4%	Head injury	1,141	4%
6	Laceration / Puncture	2,159	4%	Lower extremity pain	1,091	4%
7	Upper extremity pain	2,151	4%	Laceration / Puncture	1,075	4%
8	Fever	1,771	3%	Upper extremity pain	736	3%
9	Cough/congestion	1,275	3%	Headache	604	2%
10	Shortness of breath	1,099	2%	Sore throat	586	2%
Total, top 10		29,246			13,106	
% Visits, top 10			57%			51%

Note re Table 5:

N &/or V = nausea and /or vomiting; SOB = shortness of breath

Of the patients *admitted* as inpatients, the ten most common presenting complaints were:

- | | |
|---|----------------------------|
| 1. Shortness of breath | 6. Cough/congestion |
| 2. Fever | 7. Seizure |
| 3. Abdominal pain | 8. Upper extremity injury |
| 4. Depression/suicidal/deliberate self-harm | 9. Overdose ingestion |
| 5. Nausea and/or vomiting | 10. Lower extremity injury |

Note: These ten complaints accounted for 62% of pediatric admissions from ED.

3.4 ED Service Locations

In 2015/16, ED care was provided in 108 hospitals in B.C. (Health Authorities Management Information System (HAMIS) reporting tool).

- An estimated 1,000 physicians and a small number of nurse practitioners provided care, in collaboration with multidisciplinary teams.
- An estimated two-thirds of physicians providing care in EDs in B.C. did so on a part-time basis, in addition to their primary jobs as family physicians.
- Most physicians working in EDs in B.C. graduated from family medicine residency programs and most have no formal emergency medicine training or certification. While statistics are not available in B.C., an Ontario survey reported that 70% of physicians working in EDs in southwestern Ontario had no formal emergency training or certification (Bhimani et al, 2007).

Because children may present to any ED at any time, all EDs in B.C. must be able to provide a high standard of emergent care to children. This includes ensuring appropriate levels of pediatric training for physicians, nurses and other health care providers and the availability of age-appropriate equipment and space that supports child and family-centered care. Processes and protocols must also be in place to support the timely transfer of children to other tiers of service when required.

While ED care is provided in 108 hospitals, relatively few have the capacity to admit children for inpatient care:

- 21/108 hospitals have designated pediatric beds: 173 beds at B.C. Children’s Hospital (BCCH) and 194 in other B.C. hospitals, for a total of 367.
- 32/108 (30%) hospitals do not have any capacity to admit inpatients (adults or children) to their facility.
- Of the remaining 54 hospitals, several do not have designated pediatric beds but do admit children.
- See Appendix 4 for a list of hospitals with designated inpatient pediatric beds.

4.0 References

Bhimani, Munsif et al. (2007). Emergency Medicine Training Demographics of Physicians Working in Rural & Regional Southwestern Ontario Emergency Departments. *CJEM*, 9(6), pp. 449-452. www.ncbi.nlm.nih.gov/pubmed/18072991. (accessed Nov 20, 2016)

Appendix 1: ED and Med/Surg Visits and Days by Facility

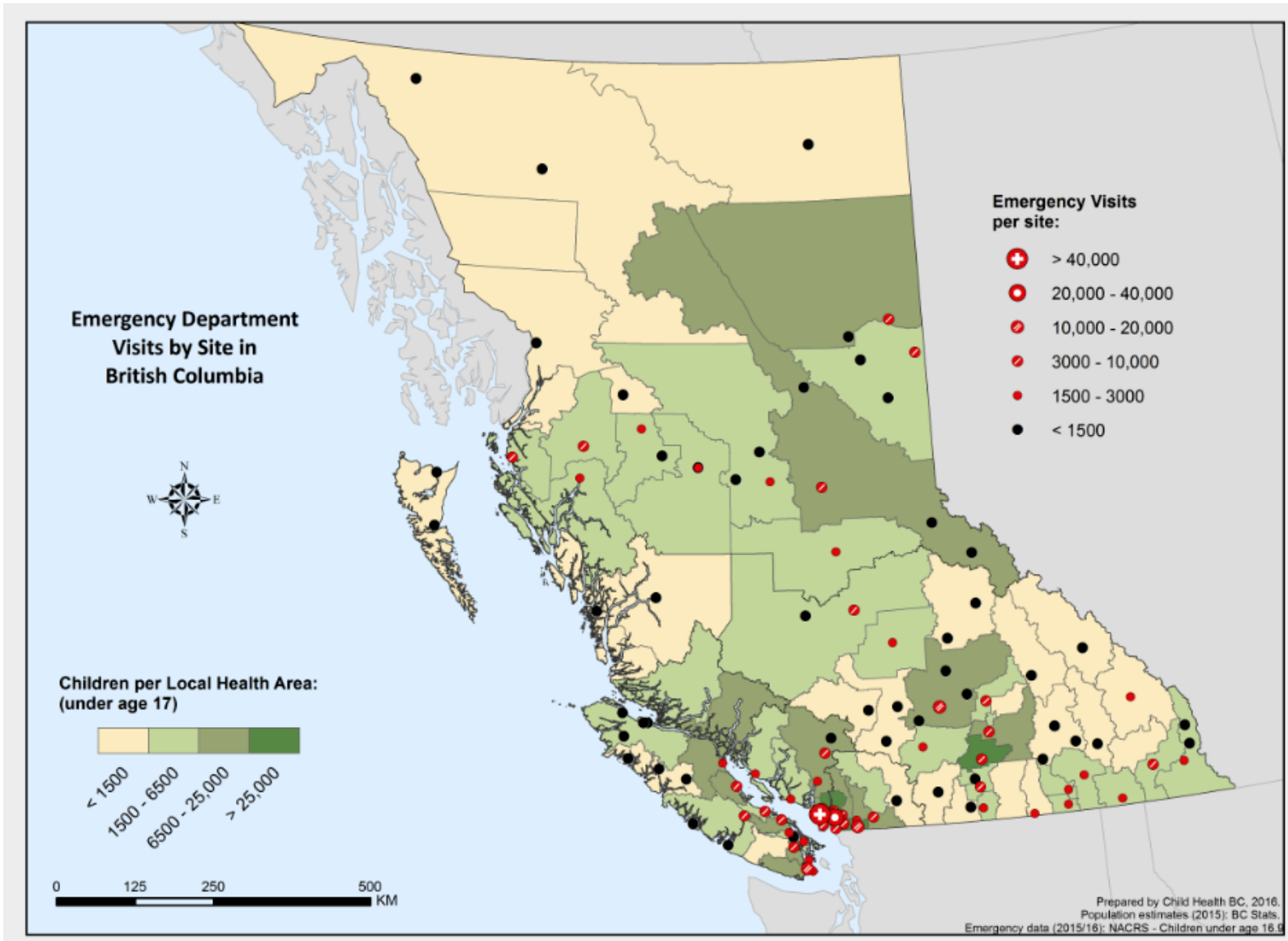
- Includes children ages 0 - 16.9 years.
- Surgical procedures: Procedures performed on children by a surgeon regardless of most responsible physician (MRP). Includes children in NICUs, PICUs, med/surg units and in day care settings.
- Med/surg visits and days: Visits and days sorted by MRP. Includes children in PICUs, med/surg units and in day care settings (excludes children in NICUs).
- Day care visits = Surgical or medical day care visits in which an anesthetic was provided.
- Medical and surgical data is for fiscal year 2015/2016. Source is the BC MoH Discharge Abstract Database.
- Emergency Department (ED) visits: Based on 2015/16 National Ambulatory Care Reporting System (NACRS) data for children ages 0-16.9 for sites that submit to NACRS. Where NACRS data was not available, visits were calculated as 15.48% x total ED visits. 2015/16 MIS data was used for total ED visits.

	Treating Hosp	ED Visits	Surgery							Medical				Med/Surg		Gen Ped Beds
			Day Care Proc's	Inpt Proc's	Total Proc's	Day Care Visits	Inpt Visits	Total Visits	Total Days	Day Care Visits	Inpt Visits	Total Visits	Total Days	Total Visits	Total Days	
Interior HA																
East Kootenay	Creston Valley Hosp	2,391	23		23	23		23	0	5	25	30	38	53	38	
	East Kootenay Reg Hosp (Cranbrook)	3,678	351	61	412	351	69	420	145		81	81	144	501	289	2
	Elk Valley Hosp	2,000	16	1	17	16	1	17	1	2	26	28	37	45	38	
	Elkford H Ctre	199														
	Golden & District Hosp	1,225	9		9	9		9	0	5	12	17	18	26	18	
	Invermere & District Hosp	1,850									16	16	36	16	36	
	Sparwood H Ctre	706														
	Kootenay Boundary	Arrow Lakes Hosp	677									3	3	6	3	6
Boundary Hosp		2,413									6	6	11	6	11	
Castlegar H Ctre		1,637														
Edgewood H Ctre		226														
Kootenay Bound Hosp		2,475	157	40	197	157	39	196	86		176	176	427	372	513	4
Kootenay Lake Hosp		2,114	115		115	115	1	116	1		37	37	73	153	74	
Slocan Comm H Ctre		312														
Victorian Comm H Ctre of Kaslo		156														
Okanagan	Kelowna Gen Hosp	9,446	449	197	646	464	179	643	355	15	531	546	1,341	1,189	1,696	10
	Penticton Reg Hosp	5,679	106	66	172	104	74	178	128	9	211	220	397	398	525	11
	Princeton Gen Hosp	1,085														
	South Ok Gen Hosp	2,810														
	S Similkameen H Ctre	422														
	Summerland H Ctre		395		395	396		396	0					396	0	
	Vernon Jubilee Hosp	6,834	228	72	300	228	80	308	120	7	209	216	512	524	632	5
	100 Mile District Hosp	1,925	6		6	5		5	0	13	12	25	20	30	20	
Thompson Cariboo Shuswap	Alexis Creek H Ctre	276														
	Ashcroft Gen Hosp	395														
	Barriere H Ctre	229														
	Blue River H Ctre	105														
	Cariboo Memorial Hosp	3,277	80	10	90	80	11	91	28	2	75	77	127	168	155	
	Chase & District H Ctre	653														
	Dr. Helmcken Hosp	570									6	6	6	6	6	
	Lillooet Hosp & H Ctre	833	17		17	17		17	0	1	18	19	27	36	27	
	Logan Lake H Ctre															
	Nicola Valley Hosp	2,077									2	2	2	2	2	
	Queen Victoria Hosp	1,422	3		3	3		3	0	1	9	10	17	13	17	
	Royal Inland Hosp	10,516	449	191	640	447	205	652	323	4	333	337	787	989	1,110	9
	Shuswap Lake Gen Hosp	3,130	25	10	35	25	14	39	21		53	53	69	92	90	
	St. Barth H Ctre	317														
Interior HA Total		74,061	2,429	648	3,077	2,440	673	3,113	1,208	64	1,841	1,905	4,095	5,018	5,303	41

	Treating Hosp	ED Visits	Surgery							Medical				Med/Surg		Gen Ped Beds
			Day Care Proc's	Inpt Proc's	Total Proc's	Day Care Visits	Inpt Visits	Total Visits	Total Days	Day Care Visits	Inpt Visits	Total Visits	Total Days	Total Visits	Total Days	
Fraser HA																
Fraser East	Abbotsford Reg Hosp	13,572	288	185	473	285	189	474	321	6	834	840	1,983	1,314	2,304	12
	Chilliwack Gen Hosp	9,541	176	9	185	175	11	186	22		29	29	47	215	69	4
	Fraser Canyon Hosp	1,481														
	Mission Memorial Hosp	2,683														
Fraser North	Burnaby Hosp	9,120	2	3	5	2	8	10	8		89	89	127	99	135	
	Eagle Ridge Hosp	8,495	198		198	198		198	0		101	101	101	299	101	
	Ridge Meadows Hosp	6,269	186	41	227	186	54	240	83	2	5	7	6	247	89	4
	Royal Columbian Hosp	10,213	110	176	286	110	186	296	526	5	505	510	1,246	806	1,772	12
Fraser South	Delta Hosp	3,383	35	1	36	35	4	39	4		47	47	48	86	52	
	Jim Pattison Outpt Ctre		1		1	1		1	0	10		10	0	11	0	
	Langley Memorial Hosp	6,587	196	81	277	196	90	286	152		378	378	961	664	1,113	9
	Peace Arch District Hosp	6,300	7	9	16	7	13	20	15		71	71	71	91	86	
	Surrey Memorial Hosp	36,649	762	419	1,181	758	422	1,180	687		1,184	1,184	3,069	2,364	3,756	16
Fraser HA Total		114,293	1,961	924	2,885	1,953	977	2,930	1,818	23	3,243	3,266	7,659	6,196	9,477	57
Vancouver Coastal HA																
North Shore/Coast Garibaldi	Bella Coola Gen Hosp	456									27	27	64	27	64	
	Lions Gate Hosp	8,240	188	139	327	180	144	324	236	22	408	430	832	754	1,068	10
	Pemberton H Ctre	813														
	Powell River Gen Hosp	2,852	24	3	27	24	3	27	9		13	13	30	40	39	
	R.W. Large Mem Hosp	431									5	5	9	5	9	
	Squamish Gen Hosp	2,237	64	5	69	23	2	25	2	41	17	58	34	83	36	
	Sechelt Hosp	2,445	25	8	33	25	5	30	8		22	22	35	52	43	
	Whistler H Ctre	3,330														
Richmond	Richmond Hosp	6,949	128	44	172	128	48	176	75	3	222	225	422	401	497	4
Vancouver	Mount Saint Jo (Providence)	1,104	13	2	15		13	2	15	3		0		15	3	
	St. Paul's Hosp (Providence)	1,646	39	4	43		38	4	42	5	74	79	127	121	135	
	U.B.C. H Sciences Ctre	1,838	76	15	91	74	15	89	18	1		1		90	18	
	Vancouver Gen Hosp	136	49	34	83	48	29	77	161	35	5	40	8	117	169	
Vancouver Coastal HA Total		32,478	606	254	860	553	252	805	520	107	793	900	1,561	1,705	2,081	14
Vancouver Island HA																
Central Van Island	Bamfield H Ctre	213														
	Chemamus Health Ctre	934														
	Cowichan District Hosp	5,118	258	36	294	258	33	291	42	3	173	176	377	467	419	4
	Ladysmith Comm H Ctre	2,476														
	Nanaimo Reg Gen Hosp	8,376	652	175	827	652	184	836	294	1	341	342	705	1,178	999	8
	Oceanside H Ctre	3,889														
	Tofino Gen Hosp	946									9	9	34	9	34	
	West Coast Gen Hosp	4,070	16	6	22	16	7	23	17		43	43	68	66	85	
Northern Van Island	Campbell River Hosp	2,916	180	25	205	180	25	205	39		67	67	119	272	158	1
	Cormorant Island H Ctre	252														
	Gold River H Ctre	467														
	Kyuquot H Ctre	137														
	Port Alice Hosp	113														
	Tahsis H Ctre	396														
	Port Hardy Hosp	1,221									14	14	31	14	31	
Port McNeill Hosp	723									4	4	20	4	20		
	Comox Hosp	3,236	194	25	219	193	34	227	44		89	89	159	316	203	4
Southern Van Island	Lady Minto/Gulf Islands Hosp	1,552									4	4	5	4	5	
	Royal Jubilee Hosp	2,434	45	4	49	45	3	48	12	1		1	0	49	12	
	Saanich Peninsula Hosp	2,431	186		186	186		186	0					186	0	
	Victoria Gen Hosp	12,546	1,174	589	1,763	1,176	487	1,663	999	4	1,155	1,159	3,621	2,822	4,620	16
Vancouver Island HA Total		54,444	2,705	860	3,565	2,706	773	3,479	1,447	9	1,899	1,908	5,139	5,387	6,586	33

	Treating Hosp	ED Visits	Surgery							Medical				Med/Surg		Gen Ped Beds
			Day Care Proc's	Inpt Proc's	Total Proc's	Day Care Visits	Inpt Visits	Total Visits	Total Days	Day Care Visits	Inpt Visits	Total Visits	Total Days	Total Visits	Total Days	
Northern HA																
North-east	Chetwynd Gen Hosp	1,428									14	14	21	14	21	
	Dawson Creek Hosp	3,842	112	8	120	112	9	121	22	40	60	100	116	221	138	
	Fort Nelson Gen Hosp	1,023	4		4	4		4	0	1	20	21	34	25	34	
	Fort St. John Gen Hosp	4,276	84	7	91	84	8	92	19	23	98	121	220	213	239	
	Hudson's Hope H Ctre	50														
	Tumbler Ridge H Ctre	362														
Northern Interior	Burns Lake Hosp (Lakes District)										12	12	24	12	24	
	Fraser Lake H Ctre	867														
	GR Baker Mem Hosp	2,827	250	11	261	251	18	269	24	9	11	20	30	289	54	
	Lakes District Hosp	2,063														
	Mackenzie Hosp	928									5	5	6	5	6	
	McBride & District Hosp	325														
	St. John Hosp	1,689	72	3	75					46	63	109	116	109	116	
	Stuart Lake Hosp	916				72		72	0		14	14	33	86	33	
	The Univ Hosp of N BC	7,271	347	106	453	347	100	447	227	10	491	501	1,549	948	1,776	12
	Valemount H Ctre	474														
North-west	Atlin H Ctre	393														
	Bulkley Valley Hosp	2,342	19	3	22	19	2	21	3	35	67	102	123	123	126	
	Houston H Ctre	687														
	Kitimat Gen Hosp	1,817	126	5	131	126	5	131	16	2	44	46	102	177	118	
	Mills Memorial Hosp	4,085	291	40	331	290	42	332	54	2	116	118	382	450	436	
	N Haida Gwaii Hosp	427									9	9	22	9	22	
	Prince Rupert Reg Hosp	3,487	158	14	172	158	15	173	33		62	62	119	235	152	
	Queen Charlotte Is Hosp	589									8	8	19	8	19	
		Stewart Gen Hosp	226													
	Stikine H Ctre	214														
	Wrinch Memorial Hosp	1,282	85		85	86		86	0	1	24	25	40	111	40	
Northern HA Total		43,891	1,548	197	1,745	1,549	199	1,748	398	169	1,118	1,287	2,956	3,035	3,354	12
PHSA HA																
PHSA	BC Children's Hosp	47,673	6,401	3,409	9,810	6,528	2,484	9,012	10,165	879	3,700	4,579	21,981	13,591	32,147	97
	BC Women's Hosp		3	294	297	3		3	0		167	167	234	170	234	
PHSA HA Total		47,673	6,404	3,703	10,107	6,531	2,484	9,015	10,165	879	3,867	4,746	22,215	13,761	32,380	97
Grand Total		366,841	15,653	6,586	22,239	15,732	5,358	21,090	15,556	1,251	12,761	14,012	43,625	35,102	59,181	254

Appendix 2: Map of Pediatric ED Visits in BC



Appendix 3: Total ED & Estimated Pediatric ED Visits by Hospital

- Total ED visits (pediatrics and adult) were based on 2015/16 HAMIS data.
- Sites that submitted NACRS data in 2015/16 are highlighted in yellow.
- Sites that do not have inpatient beds are highlighted in brown.
- Pediatric ED visits were based on 2015/16 National Ambulatory Care Report System (NACRS) data for children ages 0 to 16.9 years² in sites where NACRS data was available. NACRS data was available for 29/109 EDs in B.C., representing 27% of sites and 67% of the total ED visits.
- Where NACRS data was not available, 15.48% of total ED visits was utilized to estimate the number of pediatric visits. This figure represented the average % of pediatric to total ED visits in the NACRS sites ("outlier sites" were excluded from the average - Van General, St Paul's, Mt St Joseph, UBC Health Sciences, Royal Jubilee & BCCH).

HSDA	Hosp Name	2015/2016 ED Visits (Pediatrics & Adult)	% of Prov ED Visits	Est % Pediatric Visits	Est Pediatric Visits/Yr	% of Prov Pediatric ED Visits
Interior Health Authority						
East Kootenay	Golden & District Hospital	7,915	0.3%	15.48%	1,225	0.33%
	Creston Valley Hospital	15,447	0.7%	15.48%	2,391	0.65%
	Elk Valley Hospital	12,920	0.5%	15.48%	2,000	0.55%
	Sparwood Health Centre	4,559	0.2%	15.48%	706	0.19%
	Invermere & District Hospital	11,953	0.5%	15.48%	1,850	0.50%
	East Kootenay Regional Hospital	23,758	1.0%	15.48%	3,678	1.00%
	Elkford Health Centre	1,285	0.1%	15.48%	199	0.05%
Kootenay Boundary	Kootenay Lake Hospital	13,657	0.6%	15.48%	2,114	0.58%
	Slocan Community Health Centre	2,014	0.1%	15.48%	312	0.08%
	Victorian Community Health Centre of Kaslo	1,006	0.0%	15.48%	156	0.04%
	Arrow Lakes Hospital	4,373	0.2%	15.48%	677	0.18%
	Edgewood Health Centre	1,460	0.1%	15.48%	226	0.06%
	Kootenay Boundary Regional Hospital	15,991	0.7%	15.48%	2,475	0.67%
	Boundary Hospital	15,587	0.7%	15.48%	2,413	0.66%
	Castlegar & District Community Health Centre	10,577	0.4%	15.48%	1,637	0.45%
Okanagan	Vernon Jubilee Hospital	44,149	1.9%	15.48%	6,834	1.86%
	Kelowna General Hospital	75,953	3.2%	12.44%	9,446	2.57%
	Penticton Regional Hospital	36,688	1.6%	15.48%	5,679	1.55%
	Princeton General Hospital	7,007	0.3%	15.48%	1,085	0.30%
	South Okanagan General Hospital	18,151	0.8%	15.48%	2,810	0.77%
Thompson Cariboo Shuswap	South Similkameen Health Centre	2,723	0.1%	15.48%	422	0.11%
	Royal Inland Hospital	68,986	2.9%	15.24%	10,516	2.87%
	Queen Victoria Hospital	9,183	0.4%	15.48%	1,422	0.39%
	Nicola Valley Hospital & Health Centre	13,420	0.6%	15.48%	2,077	0.57%
	Shuswap Lake General Hospital	20,220	0.9%	15.48%	3,130	0.85%
	St. Bartholomew's Health Centre	2,045	0.1%	15.48%	317	0.09%
	Cariboo Memorial Hospital	21,170	0.9%	15.48%	3,277	0.89%
	Ashcroft & District General Hospital	2,554	0.1%	15.48%	395	0.11%
	Blue River Health Centre	680	0.0%	15.48%	105	0.03%
	Alexis Creek Health Centre	1,784	0.1%	15.48%	276	0.08%
	Lillooet Hospital & Health Centre	5,384	0.2%	15.48%	833	0.23%
	Dr. Helmcken Memorial Hospital	3,683	0.2%	15.48%	570	0.16%
	Logan Lake Health Centre	0	0.0%	15.48%	0	0.00%
	Barriere Health Centre	1,479	0.1%	15.48%	229	0.06%
Chase & District Health Centre	4,218	0.2%	15.48%	653	0.18%	
100 Mile District General Hospital	12,438	0.5%	15.48%	1,925	0.52%	
Total, IHA		494,417	21.01%	14.98%	74,061	20.19%

² The previous version of the ED module estimated visits for children ages 0 to 17.9 years. Thus, annual visits cannot be compared between the two modules.

HSDA	Hosp Name	2015/2016 ED Visits (Pediatrics & Adult)	% of Prov ED Visits	Est % Pediatric Visits	Est Pediatric Visits/Yr	% of Prov Pediatric ED Visits
Fraser Health Authority						0
Fraser East	Chilliwack General Hospital	60,348	2.6%	15.81%	9,541	2.60%
	Mission Memorial Hospital	20,124	0.9%	13.33%	2,683	0.73%
	Fraser Canyon Hospital	10,351	0.4%	14.31%	1,481	0.40%
	Abbotsford Regional Hospital & Cancer Centre	77,363	3.3%	17.54%	13,572	3.70%
Fraser North	Royal Columbian Hospital	74,546	3.2%	13.70%	10,213	2.78%
	Burnaby Hospital	82,824	3.5%	11.01%	9,120	2.49%
	Eagle Ridge Hospital & Health Care Centre	51,412	2.2%	16.52%	8,495	2.32%
	Ridge Meadows Hospital & Health Care Centre	38,715	1.6%	16.19%	6,269	1.71%
Fraser South	Langley Memorial Hospital	46,586	2.0%	14.14%	6,587	1.80%
	Surrey Memorial Hospital	152,939	6.5%	23.96%	36,649	9.99%
	Peace Arch District Hospital	54,385	2.3%	11.58%	6,300	1.72%
	Delta Hospital	31,352	1.3%	10.79%	3,383	0.92%
Total, FHA		700,945	29.79%	16.31%	114,293	31.16%
Vancouver Coastal Health Authority			0.0%			0
North Shore / Coast Garibaldi	Powell River General Hospital	18,427	0.8%	15.48%	2,852	0.78%
	Lions Gate Hospital	63,570	2.7%	12.96%	8,240	2.25%
	St. Mary's Hospital, Sechelt	15,793	0.7%	15.48%	2,445	0.67%
	Squamish General Hospital	14,453	0.6%	15.48%	2,237	0.61%
	Pemberton Health Centre	5,255	0.2%	15.48%	813	0.22%
	Whistler Health Centre	21,513	0.9%	15.48%	3,330	0.91%
	R.W. Large Memorial Hospital	2,784	0.1%	15.48%	431	0.12%
	Bella Coola General Hospital	2,947	0.1%	15.48%	456	0.12%
Richmond	Richmond Hospital	54,770	2.3%	12.69%	6,949	1.89%
Vancouver	Vancouver General Hospital	94,348	4.0%	0.14%	136	0.04%
	St. Paul's Hospital (Providence)	84,865	3.6%	1.94%	1,646	0.45%
	Mount Saint Joseph's (Providence)	30,122	1.3%	3.67%	1,104	0.30%
	U.B.C. Health Sciences Centre	20,763	0.9%	8.85%	1,838	0.50%
	Total, VCH		429,610	18.26%	7.56%	32,478
Vancouver Island Health Authority			0.0%			0
Central Van Island	Cowichan District Hospital	33,215	1.4%	15.41%	5,118	1.40%
	Nanaimo Regional General Hospital	65,189	2.8%	12.85%	8,376	2.28%
	Chemamus Health Care Centre	6,031	0.3%	15.48%	934	0.25%
	Ladysmith Community Health Centre	15,993	0.7%	15.48%	2,476	0.67%
	West Coast General Hospital	26,292	1.1%	15.48%	4,070	1.11%
	Tofino General Hospital	6,109	0.3%	15.48%	946	0.26%
	Oceanside Health Centre	25,121	1.1%	15.48%	3,889	1.06%
	Bamfield Health Centre	1,289	0.1%	16.50%	213	0.06%
North Vancouver Island	St. Joseph's General Hospital	24,766	1.1%	13.07%	3,236	0.88%
	Cormorant Island Health Centre	1,628	0.1%	15.48%	252	0.07%
	Campbell River & District General Hospital	23,412	1.0%	12.46%	2,916	0.79%
	Port Hardy Hospital	7,889	0.3%	15.48%	1,221	0.33%
	Port McNeill & District Hospital	4,669	0.2%	15.48%	723	0.20%
	Kyuquot Health Centre	883	0.0%	15.48%	137	0.04%
	Port Alice Hospital	729	0.0%	15.48%	113	0.03%
	Gold River Health Centre	3,020	0.1%	15.48%	467	0.13%
Tahsis Health Centre	2,557	0.1%	15.48%	396	0.11%	
South Vancouver Island	Royal Jubilee Hospital	58,180	2.5%	4.18%	2,434	0.66%
	Victoria General Hospital	57,872	2.5%	21.68%	12,546	3.42%
	Lady Minto/Gulf Islands Hospital	10,025	0.4%	15.48%	1,552	0.42%
	Saanich Peninsula Hospital	21,104	0.9%	11.52%	2,431	0.66%
Total, VIHA		395,973	16.83%	13.75%	54,444	14.84%

HSDA	Hosp Name	2015/2016 ED Visits (Pediatrics & Adult)	% of Prov ED Visits	Est % Pediatric Visits	Est Pediatric Visits/Yr	% of Prov Pediatric ED Visits
Northern Health Authority						0
Northeast	Fort St. John General Hospital	27,623	1.2%	15.48%	4,276	1.17%
	Dawson Creek & District Hospital	24,820	1.1%	15.48%	3,842	1.05%
	Fort Nelson General Hospital	6,610	0.3%	15.48%	1,023	0.28%
	Chetwynd General Hospital	9,223	0.4%	15.48%	1,428	0.39%
	Tumbler Ridge Health Centre	2,341	0.1%	15.48%	362	0.10%
	Hudson's Hope Gething Health Centre	321	0.0%	15.48%	50	0.01%
Northern Interior	St. John Hospital	10,914	0.5%	15.48%	1,689	0.46%
	The University Hospital of N British Columbia	46,627	2.0%	15.59%	7,271	1.98%
	GR Baker Memorial Hospital	18,260	0.8%	15.48%	2,827	0.77%
	Lakes District Hospital & Health Centre	13,328	0.6%	15.48%	2,063	0.56%
	McBride & District Hospital	2,098	0.1%	15.48%	325	0.09%
	Mackenzie & District Hospital	5,992	0.3%	15.48%	928	0.25%
	Stuart Lake Hospital	5,919	0.3%	15.48%	916	0.25%
	Valemount Health Centre	3,059	0.1%	15.48%	474	0.13%
Northwest	Fraser Lake Health Centre	5,600	0.2%	15.48%	867	0.24%
	Stikine Health Centre	1,384	0.1%	15.48%	214	0.06%
	Wrinch Memorial Hospital	8,283	0.4%	15.48%	1,282	0.35%
	Prince Rupert Regional Hospital	22,528	1.0%	15.48%	3,487	0.95%
	Bulkley Valley District Hospital	15,132	0.6%	15.48%	2,342	0.64%
	Queen Charlotte Islands General Hospital	3,806	0.2%	15.48%	589	0.16%
	Houston Health Centre	4,435	0.2%	15.48%	687	0.19%
	Stewart General Hospital	1,461	0.1%	15.48%	226	0.06%
	Mills Memorial Hospital	26,391	1.1%	15.48%	4,085	1.11%
	Atlin Health Centre	2,540	0.1%	15.48%	393	0.11%
	Kitimat General Hospital	11,736	0.5%	15.48%	1,817	0.50%
	Northern Haida Gwaii Hospital & Health Centre	2,759	0.1%	15.48%	427	0.12%
Total, NHA		283,190	12.04%	15.50%	43,891	11.96%
PHSA	BC Children's Hospital	48,612	2.1%	98.07%	47,673	13.00%
Total, PHSA		48,612	2.07%	98.07%	47,673	13.00%
GRAND TOTAL		2,352,747	100.0%	16.70%	366,841	100.00%

Appendix 4: Pediatric Inpatient Beds in B.C.

HA	Hospital	General Pediatric Beds	Pediatric Observati on Beds	Ped ICU Beds ³	Child & Youth MH Beds	Youth SU Beds ⁴	Total Ped Beds	NICU Beds
IHA	Kelowna General	10			8		18	12
	Kootenay Boundary (Trail)	4					4	
	Penticton Regional	11					11	
	East Kootenay (Cranbrook)	2					2	
	Vernon	5					5	
	Royal Inland	9			2		11	8
	Ashnola (Keremeos)						22 ⁵	22
FHA	Abbotsford Regional	12					12	10
	Langley Memorial	9					9	
	Chilliwack General		4				4	
	Royal Columbian	12					12	24
	Ridge Meadows		4				4	
	Surrey Memorial	16			20		36	28 ⁶
	Burnaby							8
	Creekside Withdrawal Management Centre					6	6	
	Last Door Recovery Centre					10 ⁷	10	
VCH	Lions Gate & Carliele Centre	10			10		20	9
	Richmond		4				4	6
	St Paul's							9
	Peak House					8	8	
	Young Bears Lodge					5	5	
Island H	Nanaimo Regional	8					8	9
	St Joseph's General	4					4	
	Victoria General	16		5			21	22
	Cowichan District (Duncan)	4					4	
	Campbell River	1					1	
	Ledger House				14 ⁸		14	
NHA	University Hospital of Northern B.C.	12 ⁹			6 ¹⁰		18	9
	Nechako Centre					8 ¹¹		
PHSA	B.C. Children's Hospital	97		22	54 ¹²		173	
	BC Women's							60
TOTAL		242	12	27	114	59	446	214

Source: Survey of health planners & ED working group in each HA, 2012/13. Updated with new information, as available.

Note: Several hospitals in BC do not have designated pediatric beds but admit children to beds on an adult inpatient unit(s). These hospitals are not included on the list above.

³ Beds have the capacity for invasive monitoring, inotropic drugs and mechanical ventilation.

⁴ Excludes beds in home-based settings.

⁵ Includes beds for ages 17 - 24.

⁶ Plan to increase to 48 beds in the future.

⁷ Contracted beds and number of beds fluctuates.

⁸ 14 beds: 5 child, 6 youth & 3 special care (assessment/stabilization) beds.

⁹ 4 beds have the capacity for more intensive monitoring, up to and including continuous cardiorespiratory monitoring.

¹⁰ 2 beds for planned admissions and 4 for crisis stabilization.

¹¹ Includes 1 detox bed.

¹² Includes 14 beds at Looking Glass (up to age 24), a residential eating disorders program operated by PHSA (BC Mental Health & Substance Use Services and BCCH) in collaboration with the Looking Glass Foundation.