

SETTING
THE STAGE

CHILDREN'S EMERGENCY DEPARTMENT SERVICES

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

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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

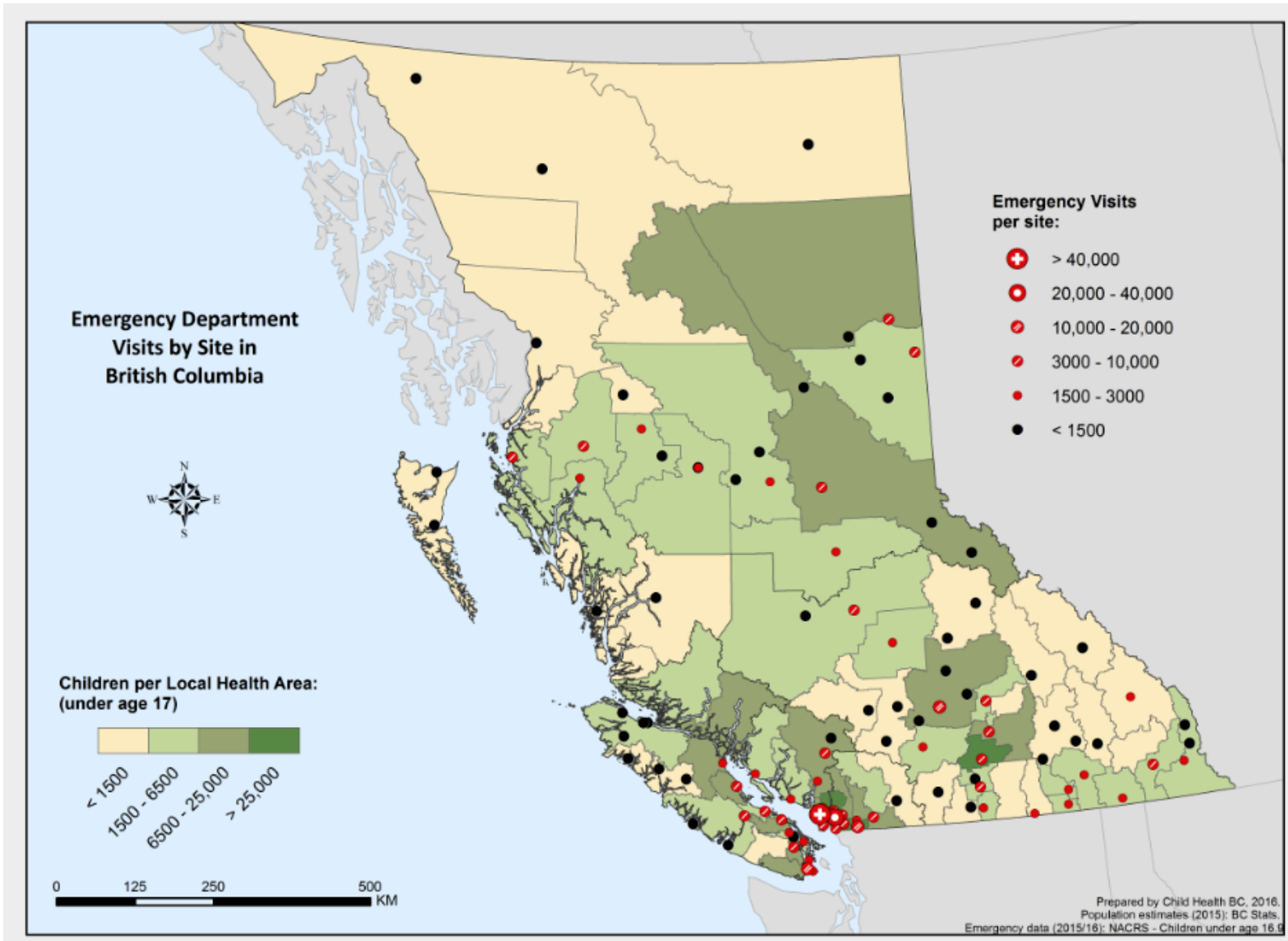
- Includes children ages 0 - 16.9 years.
- Surgical procedures: Procedures performed on children by a surgeon regardless of most responsible physician (MRP). Includes children in NICUs, PICUs, med/surg units and in day care settings.
- Med/surg visits and days: Visits and days sorted by MRP. Includes children in PICUs, med/surg units and in day care settings (excludes children in NICUs).
- Medical and surgical data is for fiscal year 2014/2015. 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	8		8	8		8	0	3	25	28	51	36	51	
	East Kootenay Reg Hosp (Cranbrook)	3,678	303	71	374	303	76	379	165		117	117	267	496	432	2
	Elk Valley Hosp	2,000	19	1	20	19		19	0		29	29	41	48	41	
	Elkford H Ctre	199			0			0				0		0	0	
	Golden & District Hosp	1,225	7	1	8	7		7	0	4	12	16	24	23	24	
	Invermere & District Hosp	1,850			0			0			18	18	39	18	39	
	Sparwood H Ctre	706			0			0				0		0	0	
Kootenay Boundary	Arrow Lakes Hosp	677			0			0			1	1	2	1	2	
	Boundary Hosp	2,413			0			0		3	3	5	3	5		
	Castlegar H Ctre	1,637			0			0			0	0	0	0		
	Edgewood H Ctre	226			0			0			0	0	0	0		
	Kootenay Bound Hosp	2,475	137	40	177	138	40	178	77	1	166	167	450	345	527	4
	Kootenay Lake Hosp	2,114	98	1	99	98	3	101	11	1	53	54	124	155	135	
Victorian Comm H Ctre of Kaslo	156			0			0				0		0	0		
Okanagan	Kelowna Gen Hosp	9,446	453	178	631	453	176	629	310	14	511	525	1288	1154	1598	10
	Penticton Reg Hosp	5,679	93	58	151	93	64	157	99	6	227	233	466	390	565	11
	Princeton Gen Hosp	1,085			0			0				0	0	0	0	
	South Ok Gen Hosp	2,810			0			0				0	0	0	0	
	S Similkameen H Ctre	422			0			0				0	0	0	0	
	Summerland H Ctre		402		402	402		402	0			0		402	0	
	Vernon Jubilee Hosp	6,834	246	81	327	246	90	336	148	6	235	241	643	577	791	5
Thompson Cariboo Shuswap	100 Mile District Hosp	1,925	8		8	5		5	0	11	16	27	28	32	28	
	Alexis Creek H Ctre	276			0			0				0		0	0	
	Ashcroft Gen Hosp	395			0			0				0		0	0	
	Barriere H Ctre	229			0			0				0		0	0	
	Blue River H Ctre	105			0			0				0		0	0	
	Cariboo Memorial Hosp	3,277	65	6	71	64	6	70	12	1	67	68	150	138	162	
	Chase & District H Ctre	653			0			0				0		0	0	
	Dr. Helmcken Mem Hosp	570			0			0			3	3	3	3	3	
	Lillooet Hosp & H Ctre	833	23		23	23		23	0	1	16	17	23	40	23	
	Logan Lake H Ctre	0			0			0				0		0	0	
	Nicola Valley Hosp	2,077			0			0			1	1	2	1	2	
	Queen Victoria Hosp	1,422	6	3	9	6	4	10	5		8	8	12	18	17	
	Royal Inland Hosp	10,516	489	203	692	482	214	696	348	6	368	374	899	1070	1247	9
	Shuswap Lake Gen Hosp	3,130	47	7	54	47	9	56	15		45	45	68	101	83	
	Slocan Comm H Ctre	312			0			0				0		0	0	
St. Bartholomew's H Ctre	317			0			0				0		0	0		
Interior HA Total		74,061	2,404	650	3,054	2,394	682	3,076	1,190	54	1,921	1,975	4,585	5,051	5,775	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	254	167	421	253	165	418	315		871	871	2174	1289	2489	12
	Chilliwack Gen Hosp	9,541	197	19	216	193	21	214	39		114	114	121	328	160	4
	Fraser Canyon Hosp	1,481			0			0				0		0	0	
	Mission Memorial Hosp	2,683			0			0				0		0	0	
Fraser North	Burnaby Hosp	9,120	4	5	9	4	11	15	11		132	132	148	147	159	
	Eagle Ridge Hosp	8,495	225	1	226	225	4	229	4		103	103	103	332	107	
	Ridge Meadows Hosp	6,269	232	40	272	232	47	279	76	2	7	9	9	288	85	4
	Royal Columbian Hosp	10,213	82	171	253	82	184	266	334	1	507	508	1264	774	1598	12
Fraser South	Delta Hosp	3,383	34		34	34		34	0		46	46	46	80	46	
	Jim Pattison Outpt Ctre		7		7	7		7	0	12		12	0	19	0	
	Langley Memorial Hosp	6,587	204	83	287	204	89	293	152		413	413	1079	706	1231	9
	Peace Arch District Hosp	6,300	27	12	39	27	16	43	20	1	72	73	72	116	92	
	Surrey Memorial Hosp	36,649	775	455	1230	775	459	1234	671	4	1095	1099	2988	2333	3659	16
Fraser HA Total		114,293	2,041	953	2,994	2,036	996	3,032	1,622	20	3,360	3,380	8,004	6,412	9,626	57
Vancouver Coastal HA																
North Shore/Coast Garibaldi	Bella Coola Gen Hosp	456			0			0			22	22	37	22	37	
	Lions Gate Hosp	8,240	186	143	329	182	149	331	239	36	426	462	944	793	1183	10
	Pemberton H Ctre	813			0			0				0		0	0	
	Powell River Gen Hosp	2,852	28	2	30	28	3	31	7	2	11	13	15	44	22	
	R.W. Large Mem Hosp	431			0			0			3	3	3	3	3	
	Squamish Gen Hosp	2,237	67	2	69	31		31	0	37	21	58	30	89	30	
	St. Mary's Hosp, Sechelt	2,445	26	5	31	26	4	30	4		21	21	34	51	38	
	Whistler H Ctre	3,330			0			0				0		0	0	
Richmond	Richmond Hosp	6,949	118	51	169	118	55	173	81		193	193	305	366	386	4
Vancouver	Mount Saint Jo (Providence)	1,104	14		14	14		14	0	2	2	4	3	18	3	
	St. Paul's Hosp (Providence)	1,646	34	9	43	33	7	40	23	7	58	65	99	105	122	
	U.B.C. H Sciences Ctre	1,838	72	19	91	72	19	91	19			0		91	19	
	Vancouver Gen Hosp	136	52	37	89	52	37	89	281	4	7	11	38	100	319	
Vancouver Coastal HA Total		32,478	597	268	865	556	274	830	654	88	764	852	1,508	1,682	2,162	14
Vancouver Island HA																
Central Van Island	Bamfield H Ctre	213			0			0				0		0	0	
	Chemamus Health Ctre	934			0			0				0		0	0	
	Cowichan District Hosp	5,118	313	59	372	312	58	370	72	2	209	211	479	581	551	4
	Ladysmith Comm H Ctre	2,476			0			0				0		0	0	
	Nanaimo Reg Gen Hosp	8,376	725	167	892	725	175	900	290	2	423	425	1006	1325	1296	8
	Oceanside H Ctre	3,889			0			0				0		0	0	
	Tofino Gen Hosp	946			0			0			12	12	18	12	18	
	West Coast Gen Hosp	4,070	18	8	26	18	8	26	16		60	60	127	86	143	
Northern Van Island	Campbell River Hosp	2,916	190	38	228	190	44	234	85		88	88	226	322	311	1
	Cormorant Island H Ctre	252			0			0			2	2	3	2	3	
	Gold River H Ctre	467			0			0				0		0	0	
	Kyuquot H Ctre	137			0			0				0		0	0	
	Port Alice Hosp	113			0			0				0		0	0	
	Tahsis H Ctre	396			0			0				0		0	0	
	Port Hardy Hosp	1,221			0			0			21	21	39	21	39	
	Port McNeill Hosp	723			0			0			4	4	5	4	5	
St. Joseph's Gen Hosp	3,236	186	20	206	186	27	213	53		98	98	164	311	217	4	
Southern Van Island	Lady Minto/Gulf Islands Hosp	1,552			0			0		1	11	12	13	12	13	
	Royal Jubilee Hosp	2,434	52	12	64	51	7	58	62	4	1	5	1	63	63	
	Saanich Peninsula Hosp	2,431	205		205	205		205	0			0		205	0	
	Victoria Gen Hosp	12,546	1238	577	1815	1236	497	1733	959	7	1095	1102	3949	2835	4908	16
Vancouver Island HA Total		54,444	2,927	881	3,808	2,923	816	3,739	1,537	16	2,024	2,040	6,030	5,779	7,567	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																
Northeast	Chetwynd Gen Hosp	1,428			0			0			18	18	32	18	32	
	Dawson Creek Hosp	3,842	126	6	132	126	8	134	14	38	48	86	111	220	125	
	Fort Nelson Gen Hosp	1,023	8		8	8		8	0	2	24	26	43	34	43	
	Fort St. John Gen Hosp	4,276	88	7	95	88	7	95	20	34	113	147	251	242	271	
	Hudson's Hope H Ctre	50			0			0				0		0	0	
	Tumbler Ridge H Ctre	362			0			0				0		0	0	
Northern Int	Burns Lake Hosp (Lakes District)				0			0			31	31	58	31	58	
	Fraser Lake H Ctre	867			0			0				0		0	0	
	GR Baker Mem Hosp	2,827	189	8	197	189	13	202	22	9	23	32	47	234	69	
	Lakes District Hosp	2,063			0			0				0		0	0	
	Mackenzie Hosp	928			0			0			4	4	6	4	6	
	McBride & District Hosp	325			0			0			1	1	1	1	1	
	St. John Hosp	1,689	101	20	121	101	20	121	20	26	55	81	81	202	101	
	Stuart Lake Hosp	916			0			0			10	10	21	10	21	
	The Univ Hosp of N BC	7,271	348	86	434	341	77	418	193	13	499	512	1455	930	1648	12
Valemount H Ctre	474			0			0				0		0	0		
Northwest	Atlin H Ctre	393			0			0				0		0	0	
	Bulkley Valley Hosp	2,342	31	2	33	31	3	34	3	26	69	95	146	129	149	
	Houston H Ctre	687			0			0				0		0	0	
	Kitimat Gen Hosp	1,817	111	3	114	112	2	114	2	3	42	45	94	159	96	
	Mills Memorial Hosp	4,085	244	19	263	240	16	256	30	2	99	101	244	357	274	
	N Haida Gwaii Hosp	427			0			0			15	15	22	15	22	
	Prince Rupert Reg Hosp	3,487	176	7	183	176	9	185	11		47	47	80	232	91	
	Queen Charlotte Is Hosp	589			0			0			6	6	11	6	11	
	Stewart Gen Hosp	226			0			0				0		0	0	
	Stikine H Ctre	214			0			0				0		0	0	
Wrinch Memorial Hosp	1,282	98	1	99	98		98	0		33	33	64	131	64		
Northern HA Total		43,891	1,520	159	1,679	1,510	155	1,665	315	153	1,137	1,290	2,767	2,955	3,082	12
PHSA HA																
PHSA	BC Children's Hosp	47,673	6,574	3,265	9,839	6,569	2,319	8,888	9,002	787	3,747	4,534	22,728	13,422	31,730	97
	BC Women's Hosp		6	368	374	6		6	0		161	161	347	167	347	
PHSA HA Total		47,673	6,580	3,633	10,213	6,575	2,319	8,894	9,002	787	3,908	4,695	23,075	13,589	32,077	97
Grand Total		366,841	16,069	6,544	22,613	15,994	5,242	21,236	14,320	1,118	13,114	14,232	45,969	35,468	60,289	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%
	South Similkameen Health Centre	2,723	0.1%	15.48%	422	0.11%
Thompson Cariboo Shuswap	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	Designated Pediatric Beds					Designated NICU Beds
		General Pediatric Beds	Pediatric Observation Beds	Ped ICU Beds ³	Child & Youth MH Beds	Total Ped Beds	
IHA	Kelowna General	10				10	12
	Kootenay Boundary (Trail)	4				4	
	Penticton Regional	11				11	
	East Kootenay (Cranbrook)	2				2	
	Vernon	5				5	
	Royal Inland	9			2	11	8
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			10	26	28 ⁴
	Burnaby						8
VCH	Lions Gate	10				10	9
	Richmond		4			4	6
	St Paul's						9
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 ⁵	14	
NHA	University Hospital of Northern B.C.	12 ⁶			6	18	9
PHSA	B.C. Children's Hospital	97		22	54 ⁷	173	
	BC Women's						60
TOTAL		242	12	27	86	367	214

Source: Survey of health planners & ED working group in each HA, 2012/13.

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 Plan to increase to 48 beds in the future.

⁵ 14 beds: 5 child, 6 youth & 3 special care beds.

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

⁷ Includes 14 beds at Looking Glass, a residential eating disorders program operated by PHSA (BC Mental Health & Substance Use Services and BCCH) in collaboration with the Looking Glass Foundation.