

Clinical Context Coding Scheme

Describing Utilisation of Services of Island Health between 2007-2017



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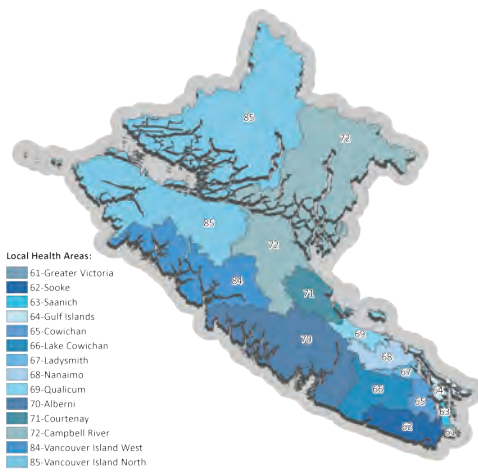
Vancouver Island Health Authority (VIHA, aka **Island Health**) is one of 5 health authorities of British Columbia.

VIHA administers about **1700+** individual programs (aka locations), spanning the full spectrum of health services.

Starting in 2007, VIHA has been recording patients' encounters with these programs using a single instance of **Electronic Health Record** system, **CERNER-Millennium**.

Cross-continuum nature of CERNER-Millennium and moated nature of the geographical area of VIHA created a data source that captures almost **complete patient trajectories** through the space of health services.

TTT cohort identifies users of Mental Health & Substance Use (**MHSU**) services of Island Health during the last ten years (2007 -2017).



source: http://www.viha.ca/about_viha.html

However, 1700+ programs are too much to make sense of, this is **too granular** of a view of the encounter data. Besides, some locations are recorded in a cryptic way and are hard or impossible to decipher for a researcher not familiar with VIHA.

To make encounter data less granular and less cryptic, we have grouped programs according to the **similarity of services** they provide (e.g. "Medical Imaging", "Detox", "Crisis Response Team", "Endoscopy", etc.)

Clinical Context Coding Scheme (CCCS) encodes how the complete universe of VIHA's 1700+ health programs maps onto a smaller set of descriptive labels (service classes).

While we need to be aware that service classes are **groups of individual locations** (programs), the latter are unlikely to be relevant for purposes of understanding patient trajectories (unless you are a system planner in VIHA).

What does this mean?

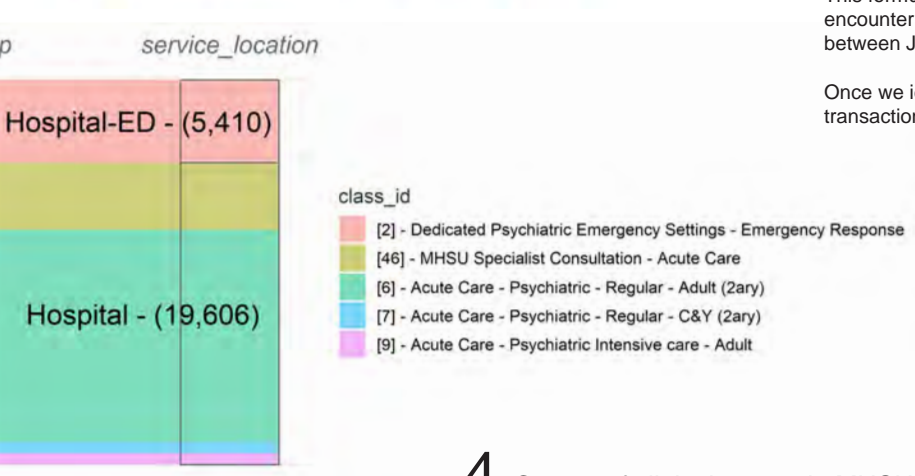
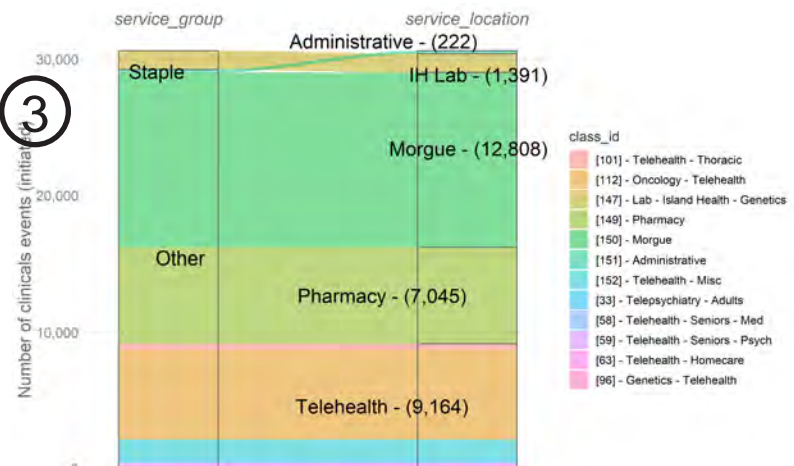
1	Unit_Name
110	Respiratory Therapy-CDH
111	Respiratory Therapy
112	Respiratory Therapy Clinic-CVH
113	Respiratory Therapy Clinic-CRG
114	RJH - ROYAL BLOCK EXT 3 RESPIRATORY (old S3)
115	RJH - ROYAL BLOCK EXT 4 RESPIRATORY (old S3)
129	House 1
130	Mt. Doug Apts
131	House 2
132	A Wing-Cowichan
133	House 3
134	House 1
135	House 2
136	House 3
137	House 4
138	House 4
139	A Wing-Cowichan
140	A Wing
141	Sandringham Community Residential

This is more meaningful!

location_class_code	location_class_description
78	ED - Med-Surg
148	Medical Imaging
146	Lab - Island Health - General
57	H&CC Services
66	Acute Care - Med-Surg - Mixed Ages
34	Clinical Intake - Adult MHSU
140	Surgery - Same Day - Mixed Ages
145	Electrodiagnostics
142	Surgery - Post - Acute Care
135	Med-Surg - Ambulatory Mixed Episodic - Chronic - Mixed Ages
91	Endoscopy
138	Surgery - Prep - Recovery - Mixed Ages
37	Clinical Intake - Older Adults
43	Psychiatric (only) Clinic Services - Adults
16	Time-limited Ambulatory Treatment Services - Mental Health - Adults (secondary level)

Health Programs
N = 1700+

Service Classes
N = 150+



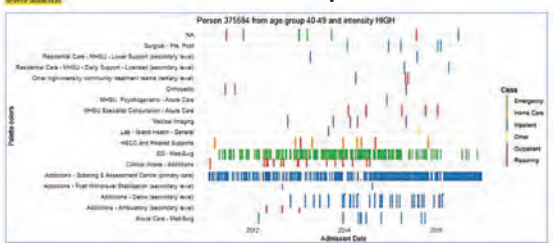
4 Counts of clinical events in MHSU-related services. Notice that most MHSU events occur in community-based services

3 Counts of events in service group "Other", isolated in a separate display. These do not fit into "Hospital vs Community" dichotomy, so we list them here.

2 Counts of events in the service group "Staple". Notice that only three service classes (78, 146, 148) are responsible for a disproportionate amount of service events. They dwarf other classes by comparison, so we isolate them in a separate display

1 Counts of all clinical events generated by the research cohort between 2007-01-01 and 2017-09-01. Our focus is with services related to Mental Health and Substance Use.

View for one person



If we put **time** on the horizontal axis, we can use the vertical dimension to list classes of service the patient engaged at each point in time.

With only 150+ ways a patient can engage VIHA (instead of 1700+) it now becomes manageable to display the entire **history of a patient's engagement** with the health system.

This fictionalized history of a patient with a server substance addition, shows the type of patterns we can now discern and

Research Cohort is defined as anybody who

- had contact with **Mental Health & Substance Use (MHSU)** program
- AND/OR
- had contact with any acute care service (**acute care admission**)
- with an MHSU discharge **diagnosis** established AND/OR
- had an MHSU **procedure** performed

This is how we defined the general cohort of interest (MHSU patients during **2007 – 2017**) in order to formulate the query for data retrieval.

This formulation yielded a cohort of **170,533** individuals who had at least one encounter with at least one of any MHSU programs in Island Health during between January 1, 2007 and September 1, 2017

Once we identified the individuals fitting these criteria we have retrieved **all** their transactions with **all** VIHA services.

5 Counts of MHSU-related services that took place in a hospital setting.

6 Counts of MHSU-related services that took place in a community setting. Each panel colors the (identical) breakdown of service locations into service classes according to four dimensions of the Clinical Context Coding Scheme.

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