

Clinical Context Coding Scheme

Describing Utilisation of Services of Island Health between 2007-2017



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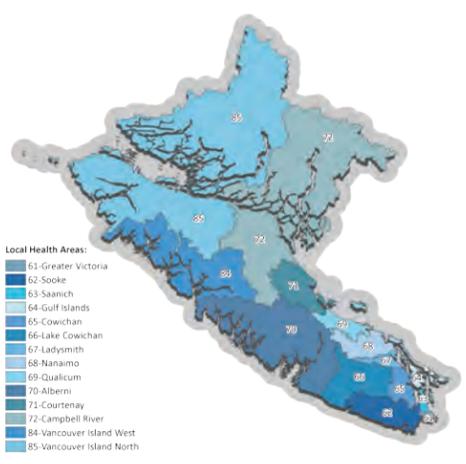
Vancouver Island Health Authority (VIHA, aka **Island Health**) is one of 5 health authorities of British Columbia.

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.

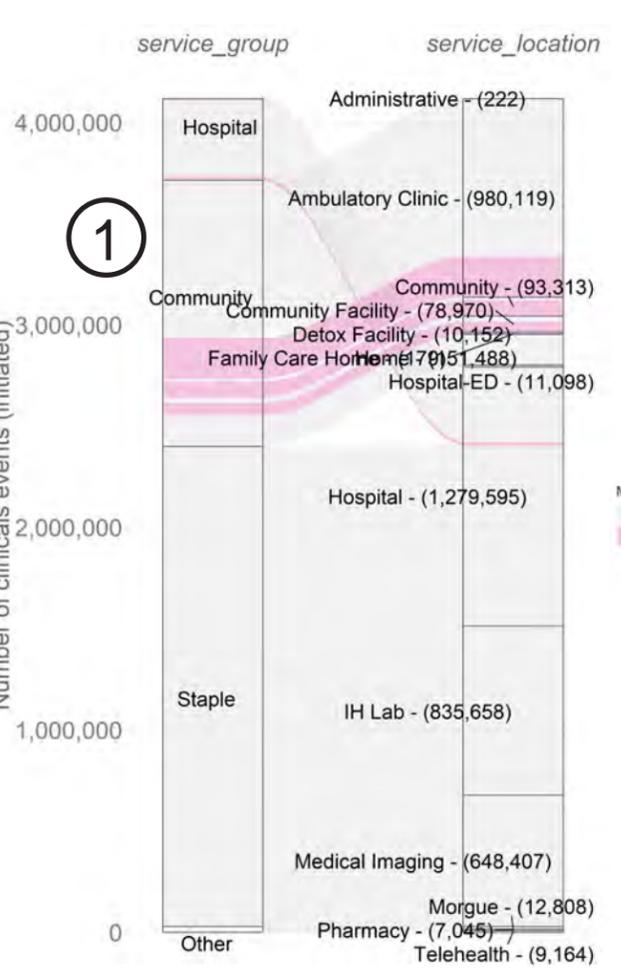
To make encounter data less granular and less cryptic, we have grouped programs according to the **similarity of services** they provide (e.g. "Medical Imaging", "Detox", "Crisis Response Team", "Endoscopy", etc.)

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).

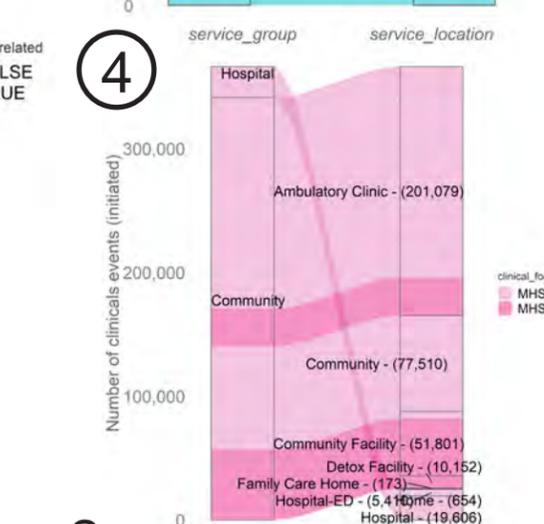
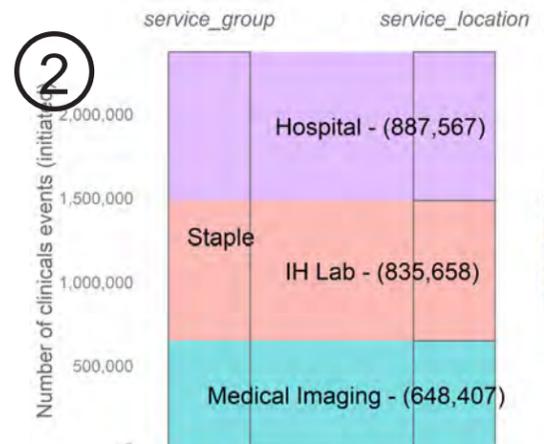
While we need to be aware that service classes are **groups of individual locations** (programs), the latter are unlikely to be relevant for purposes of understanding patient trajectories (unless you are a system planner in VIHA).



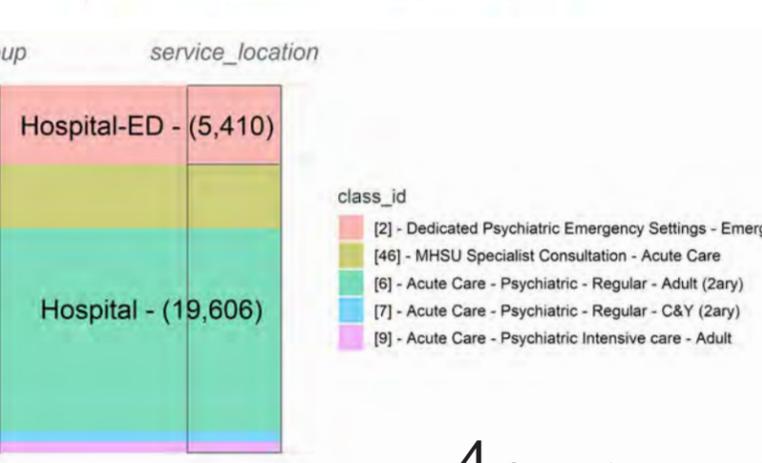
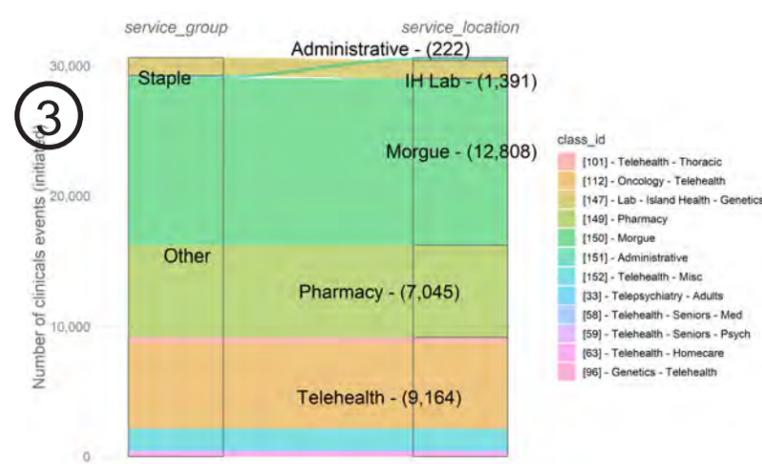
Health Programs $N = 1700+$ → Service Classes $N = 150+$



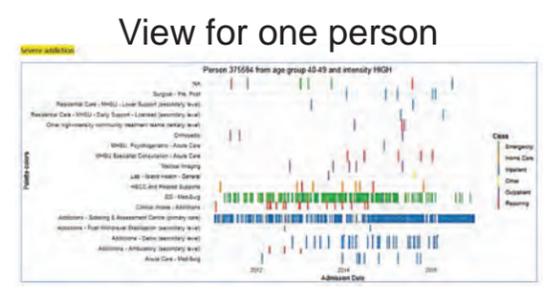
1 Counts of all clinical events generated by the research cohort between 2007-01-01 and 2017-09-01. Our focus is with services related to Mental Health and Substance Use.



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



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.



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.

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

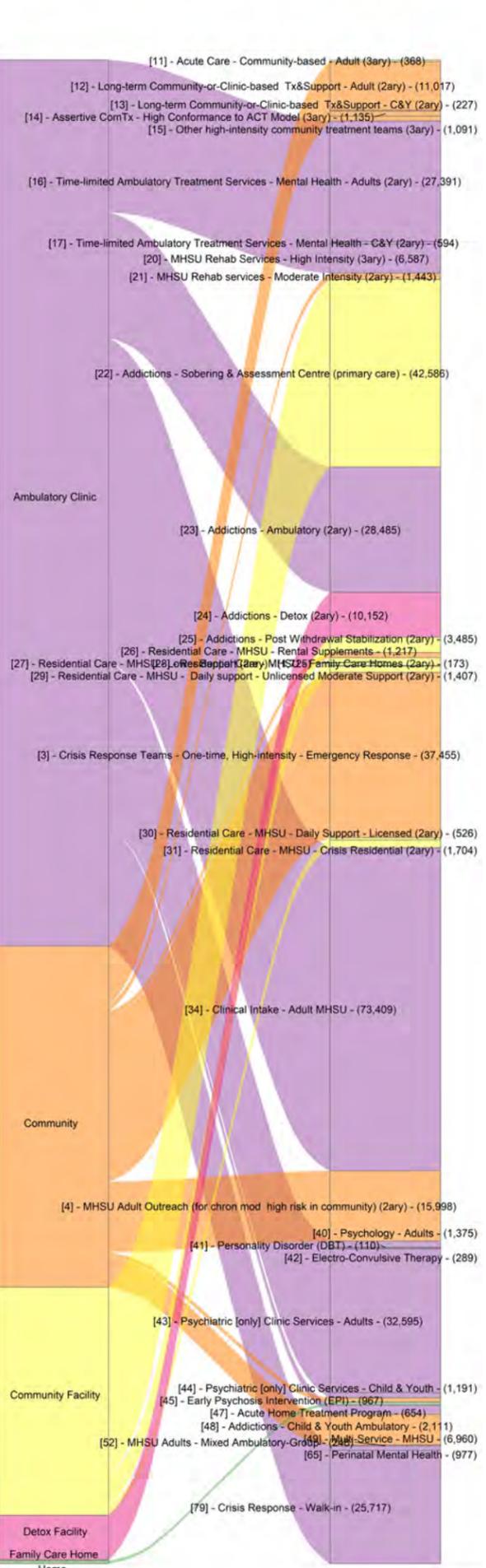
5 Counts of MHSU-related services that took place in a hospital setting.

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.

6

service_location Ambulatory Clinic Community Detox Facility Family Care Home

class_id



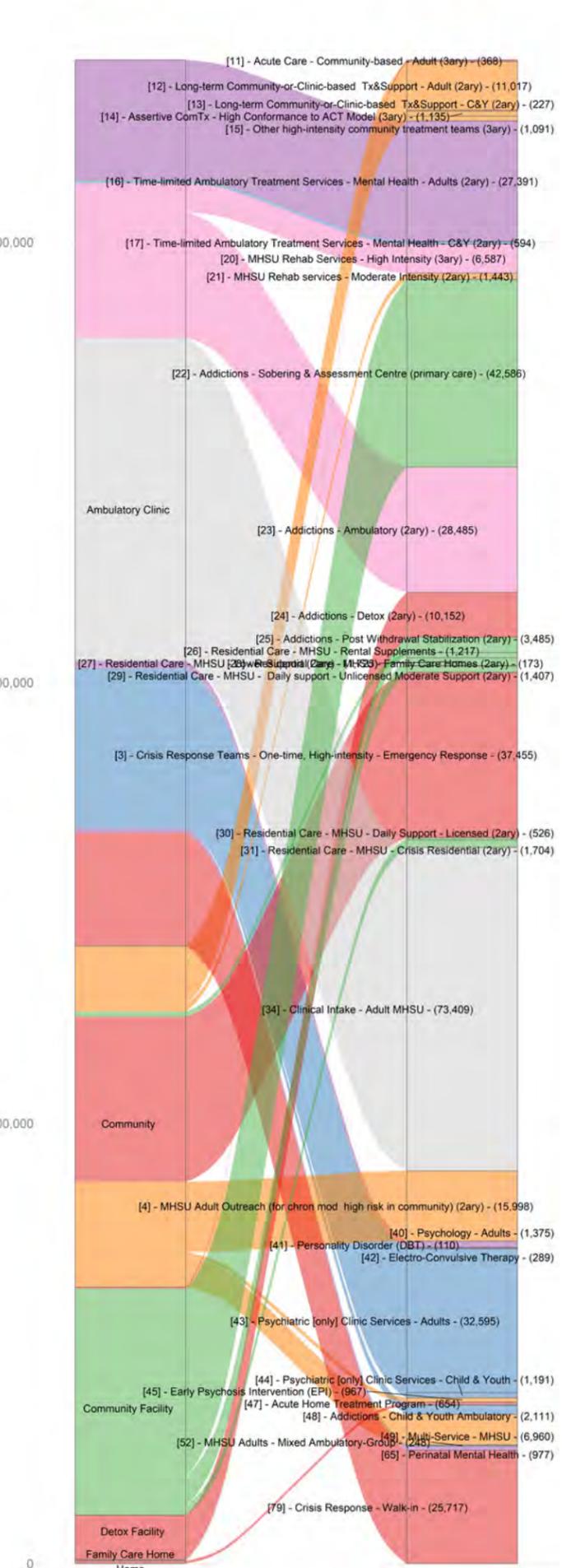
clinical_focus MHSU MHSU-Addictions

service_location class_id



intensity_type Ambulatory-Chronic Ambulatory-Episodic Community Support ED, Urgent Care, Acute Intake, Assessment Residential C

service_location class_id



population_age Adults, some adols, older adults Children, Adolescents Mixed Ages Mother-B

service_location class_id

