

BC Critical Care Database

Provincial Critical Care Working Group

Nov 29th, 2018

Agenda

- Summary
- Accomplishments (2018)
- Roadmap (2019)
- Partnership with Ministry of Health

Summary

2017

2018

2019

Critical Care Dashboard

Dashboard Survey

Early Mobilization Dashboard

Website on BCPSQC

Account Consolidation & clean-up

New Improved Server Hardware and Software

Dictionary Update & CCOT Dictionary creation

Minimum Dataset and Database Clean-up

Database Connectivity and Communication with Hospital Admissions Systems

Budget for long-term sustainability

Partnership with the Ministry of Health: leveraging the database

Research: innovative research to enhance operational/clinic aspects of patient care

Ongoing regular maintenance: server, data exports, data entry screens, issue resolution and PIA compliance

Expansion of Governance Committee

Further Dashboard Development:

- As per feedback from survey
- Unit Scorecards
- Physician Metrics (to be discussed further)
- PAD and other themes

Accomplishments

➤ Budget for long-term sustainability

Approved Budget Model: This is based on a minimum cost (\$5,000) plus incremental cost associated with 'activity' levels at each Health Authority					
Health Authority	Average of Activity Measures, Excluding VCH-PHC	Fixed Cost	Incremental Cost	Total for Fiscal Year	
FHA	55.4%	\$ 5,000	\$ 13,844	\$ 18,844	✓
IHA	28.4%	\$ 5,000	\$ 7,107	\$ 12,107	✓
VIHA	12.1%	\$ 5,000	\$ 3,019	\$ 8,019	✓
NHA	4.1%	\$ 5,000	\$ 1,031	\$ 6,031	✓
Sub-Total	100.0%	\$ 20,000	\$ 25,000	\$ 45,000	
VCH-PHC	VCH-PHC already provides \$60,000 in-kind funding			\$ 60,000	✓
Total Grand Cost for Database				\$ 105,000	

Roadmap 2019

2017

2018

2019

Early Mobilization Dashboard

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New Improved Server
Hardware and Software

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Committee

Roadmap 2019

➤ **Dictionary Update**

- Whole dictionary was updated (last update was in 2015)
- Final minor revisions under way

➤ **Minimum Dataset & Database Clean-up**

- Now fully developed
- Being incrementally communicated/implemented
- Sites to review and decide

➤ **CCOT Data Dictionary Creation**

- Led by Vini Bains (SPH CNS)
- To be shared with sites interested in collecting CCOT data

Roadmap 2019

- **Further Dashboard development** (input: dashboard survey)
 - Further enhancement of Early Mobilization dashboard
 - Unit ICU Scorecards
 - To promote visibility for front-line
 - *Pushing* reports to leadership – dashboard only accessible on HA network
 - Physician Metrics
 - First need data entry screen programming for physician schedules
 - PAD & Other themes
 - Existing RASS & Delirium indicators on dashboard
 - Development and integration of Pain metrics
 - Patient clinical descriptors, confidence intervals, spread

Roadmap 2019

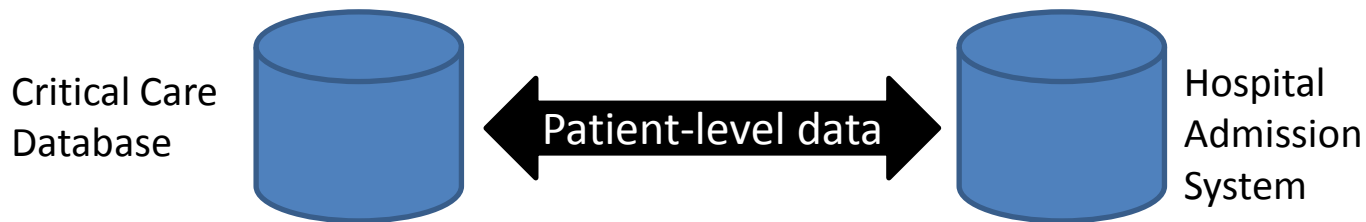
New Improved Server – led & managed by CHEOS

- Upgraded Hardware and Software
- Enhanced system stability and response
- Better software capability
 - Data Entry & Exports
 - Dashboard development & capabilities
- Better disaster recovery

Roadmap 2019

Database Connectivity

- Two-way data transfer between database & hospital admissions systems
- Initial scoping done with CHEOS consultation:
 - High need for project management & programming resources
 - Leads needed from each Health Authority (decision support/IMITS)
 - Information Access & Privacy Compliance & Consultation
- FHA – CHEOS: agreement for two-way data transfer
 - Existing data exports to be pushed from Critical Care Database to FHA Enterprise Data Warehouse
 - Demographics & Visits information to be pushed from FHA into Critical Care Database
 - Additional FHA requests subject to proposal presented by FHA at Governance Committee, given high anticipated resource needs



Roadmap 2019

Partnership with the Ministry of Health

- Proactive discussion with MoH related to:
 - Promoting Critical Care metrics transparency
 - To Critical Care Leadership, site, public (?), MoH (?)
 - Consider upcoming BCMQI related to physician metrics

- Extend accountability structure
 - From site/HA leadership to MoH?

Appendix



Example of Critical Care Scorecard

Critical Care Scorecard								
Site ICU 2017/18								
	Indicators	Status					Evaluation	
		Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Goal	Action
Effective	ICU Mortality (%)	Green	Yellow	Red	Green	Green	<18%	
	Hospital Mortality (%)	Green	Yellow	Red	Green	Green	<25%	
	Standardized Hospital Mortality (APACHE IV)	Green	Yellow	Red	Green	Green	<100	
	Median ICU LOS (days)	Green	Green	Green	Yellow	Green	<4.5	
	% Admission Actual < Predicted LOS	Green	Green	Green	Yellow	Yellow	>65 %	
	48 hour Reintubation (extubation Failure)	Green	Red	Yellow	Yellow	Red	<5%	
Efficient	Avoidable Days	Red	Red	Red	Yellow	Red	<100	
	Overflow Days	Red	Red	Red	Red	Red	<200	
Safe	Unplanned Extubations (100 MV days)	Green	Green	Red	Yellow	Green	<0.4	
	72 HR Readmission (%)	Red	Red	Red	Yellow	Yellow	<4%	
	CRBSI	Green	Green	Red	Green	Green	0	
	Weeks free of MRSA (in Quarter)						13	
Accessible	No of Admissions	Green	Green	Green	Green	Green	>350	
	ED Triage to ICU Transfer (hours)		Red	Red	Red	Red	< 4h	
	ED Triage to Admit Decision (hours)	Red	Red	Red	Yellow	Red	< 2h	
	Occupancy						<85%	
Work-Life	Overtime							
	Doubles (Avg/ quarter)							
	Turnover							

BC Patient Safety and Quality Council is currently supporting this work:

- Design and format of scorecard
- So that it can be published and shared with relevant stakeholders

Budget

BC Provincial Critical Care Database Budget (Dec 7th, 2017)

Line	Item/Personnel	Fiscal Year		
1	Database manager (Steve) and Medical Leadership	\$50,000	in-kind VCH-PHC	
2	Programming (Nada)	\$10,000	in-kind VCH-PHC	Current maintenance programming costs
3	Systems and Network Administrator (operation of hardware and network related operations, security, back-ups)	\$20,000		
4	Oracle server operating software	\$5,000		
5	Additional programming support for Nada / CHEOS	\$20,000		This amount is for ongoing database development.
		Total Annual Costs for the Database	\$105,000	
		In-Kind Funding from VCH-PHC	\$60,000	
		Amount to be distributed to all other Health Authorities (FHA, VIHA, NHA, IHA)	\$45,000	

Note: The above budget does not include any major system upgrades or major database changes

Budget

Activity levels and funded beds for all Health Authorities

Health Authority	2015/16				Current as of 16 Nov 2017			Average of Activity Measures	Average of Activity Measures, Excluding VCH-PHC
	Number of Admissions*	% of Admissions	Patient Days**	% of Patient Days	Funded Beds	% of total funded beds	Physical beds		
FHA	7,459	43%	37,368	42%	122	40%	NA	42%	55.4%
IHA	4,213	24%	16,983	19%	64	21%	66	22%	28.4%
VCH-PHC	3,572	21%	23,720	27%	79	26%	100	24%	
VIHA	1,583	9%	7,660	9%	29	10%	30	9%	12.1%
NHA	552	3%	2,825	3%	9	3%	10	3%	4.1%
Grand Total	17,379		88,556		303			100%	100.0%

* Includes admissions to Units 1, 3, 6 (ICU ,HAU, CCU (Coronary Care Unit)

**Patient days also include any overflow

Data activity levels may be measured by # admissions, # patient days and # funded beds.

Given that there is no single benchmark measure of activity in the database and the three above measurements of activity are very similar, e.g. for FHA (43%, 42%, 40%), we calculated an average of all three activity level measurements, e.g. FHA (average: 42%)

\$45,000 is to be distributed equitably within the four Health Authorities.

Fixed Cost: \$5,000 for each Health Authority (total: \$20,000)

Incremental Cost (\$25,000) is based on the average of activity measures.



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