Electronic Endoscopy Reporting

Dr Scott Cowie

3 January 2018

Disclosures

- None to report

Learner Centred Objectives

- Review the standards for electronic endoscopic reporting
- Review challenges in setting up systems

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FHA

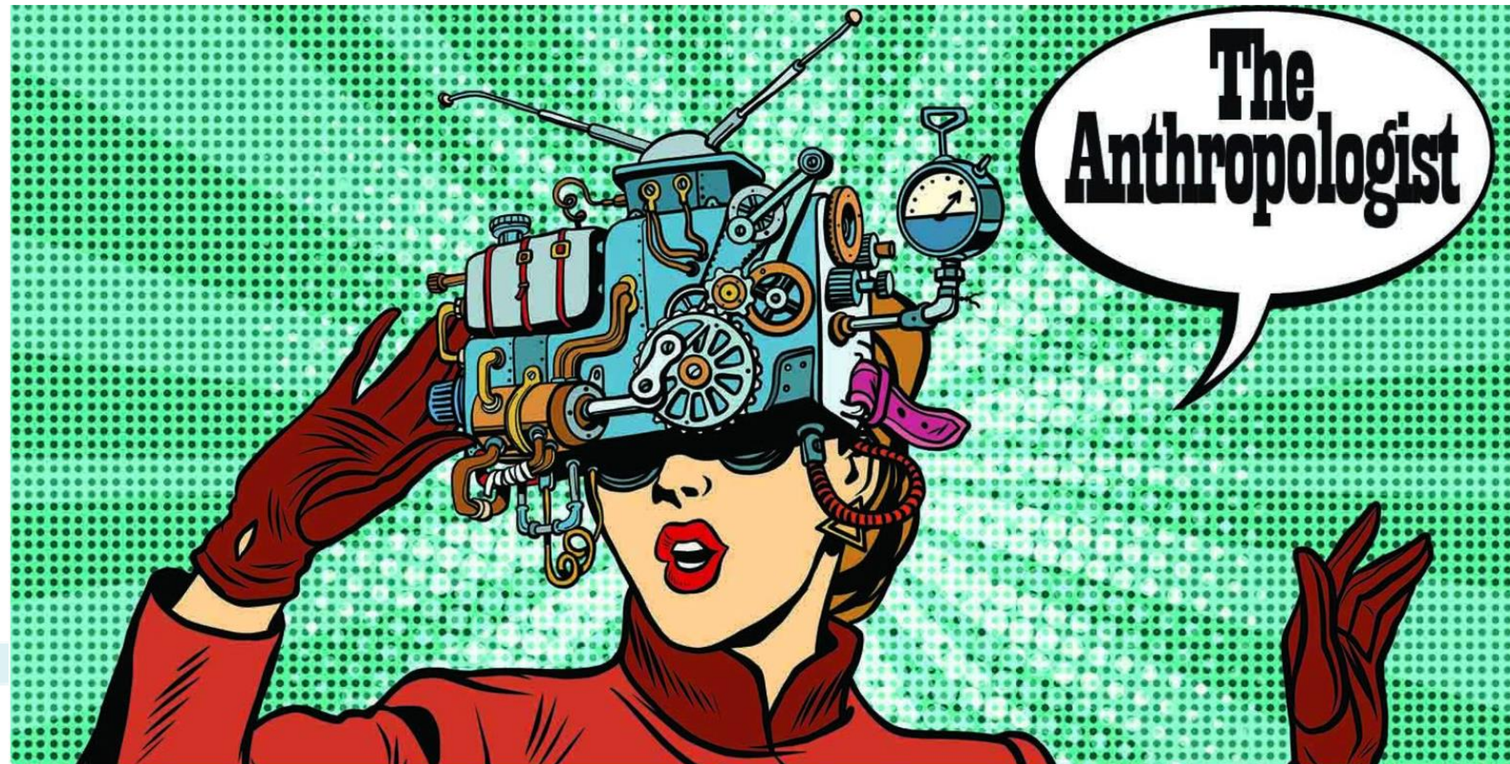
- First site go-live March 2018.
- Phase 1 and 2 completed
  - Currently at 8 sites in FHA
  - Used by 92 physicians
  - Average of reports per day: 204
  - Total number of reports: 62315

- *…a **comprehensive information management and image capture system** that supports all stages of the endoscopy suites' clinical workflow, streamlining patient care and operational performance **from patient arrival to patient discharge**.*

Part 1: Setting expectations

Expectation is the only seed of disappointment

Mokokoma Mokhonoana



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Pathway

Healthcare's path to computerization has been strewn with landmines, big and small

R. Wachter

- Implementation of electronic medical records seems to lead to inevitable disappointment

$$UX(cp) \neq UX(EEMR)$$

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Nanaimo doctors say electronic health record system unsafe, should be shut down

Cindy E. Harnett / Times Colonist
MAY 27, 2016 06:00 AM

IHealth computer terminal cart
Photograph By ISLAND HEALTH

Implementation of a $174-million Island-wide electronic health record system in Nanaimo Regional General Hospital — set to expand to Victoria by late 2017 — is a huge failure, say senior physicians.

Adrian Dix says he will appoint a mediator to help broker a solution for the $230 million IHealth digital records system, following the release of a critical report by Ernst and Young last week.

- **Review urges changes to Nanaimo hospital records system**
- **B.C. to conduct review of IHealth system at Nanaimo General Hospital**

The report found half of doctors and nurses believe the $230 million platform is unsafe and even more said it reduced their productivity.

"Seventy-three per cent of doctors and 66 per cent of nurses said their productivity had been reduced by a system that was supposed to improve productivity. That's a pretty significant drop," Dix told *On the Island* host Gregor Craigie.

He said Vancouver Coastal Health's Clinical Systems Transformations Project and other major IT projects launched by the previous Liberal govern have the same fundamental problem as Nanaimo's IHealth project.

The IHealth workstations on wheels allow doctors and nurses to put patient information directly into an electronic health record. (Island Health)

"They spend way too much money they put forward on projects that are too big," Dix said. "They have no way of dealing with problems when they started to go wrong, and they didn't involve the people who had actually used them enough."

In December 2017, Dix announced the appointment of former London Drugs CEO Wynne Powell to take over as chair of the Vancouver-area IT project, which is about $130 million over its $842 million budget.

Dix said despite the missteps to date, everyone in the health system agrees the move to electronic health records must go ahead.

What is the goal?

Software Tools in Endoscopy - Nice to Have or Essential? - O.Moschler

- Documentation
- Imaging
- Software integration
- Dealing with histologic findings
- Materials and personnel logistics

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- All of this costs (time):
  - direct patient care 12% of overall time (ave 8 mins per patient)
  - 64% of time spent charting or discussing with 40% of time spent in front of a computer

- J Gen Intern Med. 2013 Aug; 28(8): 1042–1047

Table 1

Percent of Time Spent in Each Activity by Site.

	Total	Site 1	Site 2
Total time (hours)	873	439 (50.3 %)	434 (49.7 %)
Activity			
Direct patient care	12.3 %	11.4 %	13.3 %*
Initial patient evaluation	3.8 %	3.6 %	4.1 %
Follow-up patient visit	7.2 %	6.5 %	7.8 %*†
Patient education	0.1 %	0.1 %	0.1 %
Family meeting	0.5 %	0.4 %	0.6 %
Procedures	0.7 %	0.8 %	0.6 %
Education	14.7 %	18.8 %	10.6 %*
Educational conferences	2.3 %	2.8 %	1.8 %
Reading about medicine	2.1 %	2.8 %	1.3 %*†
Rounds	9.7 %	12.2 %	7.3 %*†
Teaching students	0.6 %	1 %	0.3 %
Indirect patient care	63.6 %	61.2 %	66.1 %*
Reviewing patient chart	14.5 %	14.7 %	14.3 %
Writing notes	16.1 %	13.1 %	19.1 %
Talking with providers	20 %	20.5 %	19.5 %
Paperwork	3.8 %	1.5 %	6.1 %*†
Writing orders	6.4 %	7.3 %	5.4 %
Handoffs	2.9 %	4 %	1.7 %*†
Miscellaneous activities	9.3 %	8.6 %	10 %
Eating	1 %	0.8 %	1.3 %
Social/recreation	1 %	2.4 %	1.7 %
Walking	5.9 %	5 %	6.8 %*
Sleeping	0.3 %	0.3 %	0.2 %

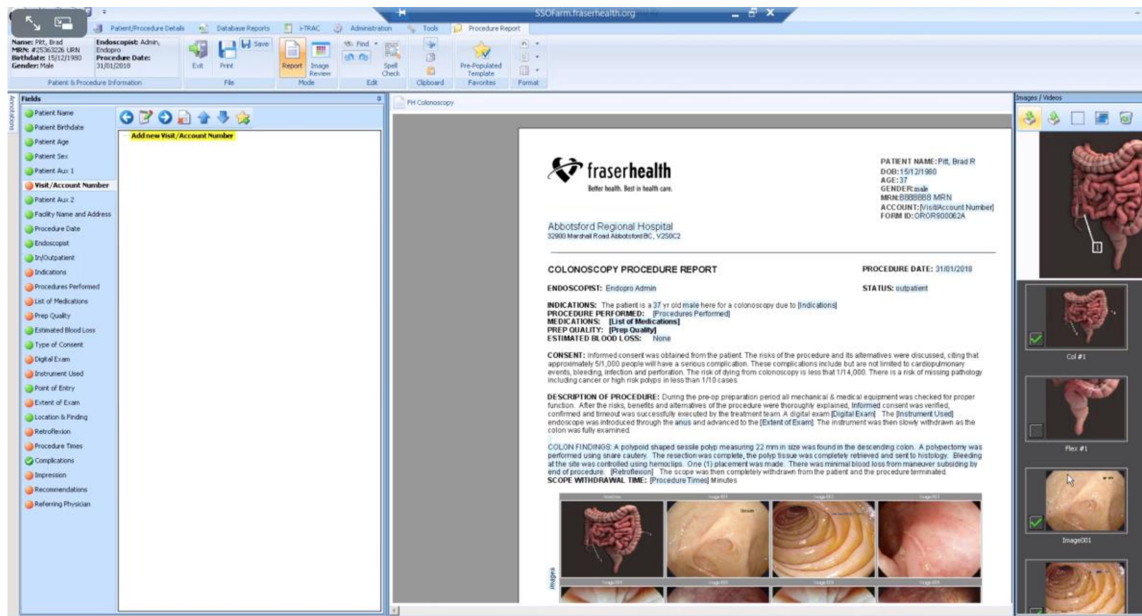
This is not the goal!

- “It is a mistake to conceptualize the record as a more or less adequate representation of events…the record is actively involved in shaping the very events it ‘represents’.”

M. Berg

Documentation

- "Endoscopic procedures should be reported in a standardized electronic format, including mandatory reporting fields". CAG consensus 2012



- Free text capability enabled

Table 2 – Discrepancy in Reporting

Discrepancy in Reporting:	Number of Cases	Percentage
Indications for colonoscopy	34	5.7%
Presence of assistants	94	15.9%
Extent of colonoscopy and verification technique	Nil	Nil
Quality of bowel preparation	35	5.9%
Findings & impressions	33	5.6%
Total Colonoscopies	592	

Table 3 – Omissions in the Impression

Nature of Omissions	Number of Cases	Percentage
Polyp		
No mention of polyps, although it was present	5	0.85%
Number of polyps reported	2	0.34%
Description of polyp (i.e. location, size)	6	1.0%
Description of melena/BRB stool visualized	2	0.34%
Diverticulosis	4	0.68%
Comment on mucosa (i.e ulcerated, erythema)	11	1.9%
Hemmorhoids	2	0.34%
Strictures	1	0.17%

Rahman et al 2019

Documentation time

- Studies have shown electronic endoscopic reporting is no more time-consuming that dictation
  - Prepopulation of patient demographic via ORM scheduling
  - Standardized phrasing
  - Automatic generation of patient discharge summaries
  - Ability to create shortcuts
    - Favourites (eg combination of common medications with doses) and report templates
- colleague 6 random screening colonoscopy procedures:
  - containing 18 polypectomies, 2 clip usages, 1 biopsy
  - Average report generation time 1 minute, 54 seconds
    - Complete esigned report, efaxed, and printed patient discharge summaries

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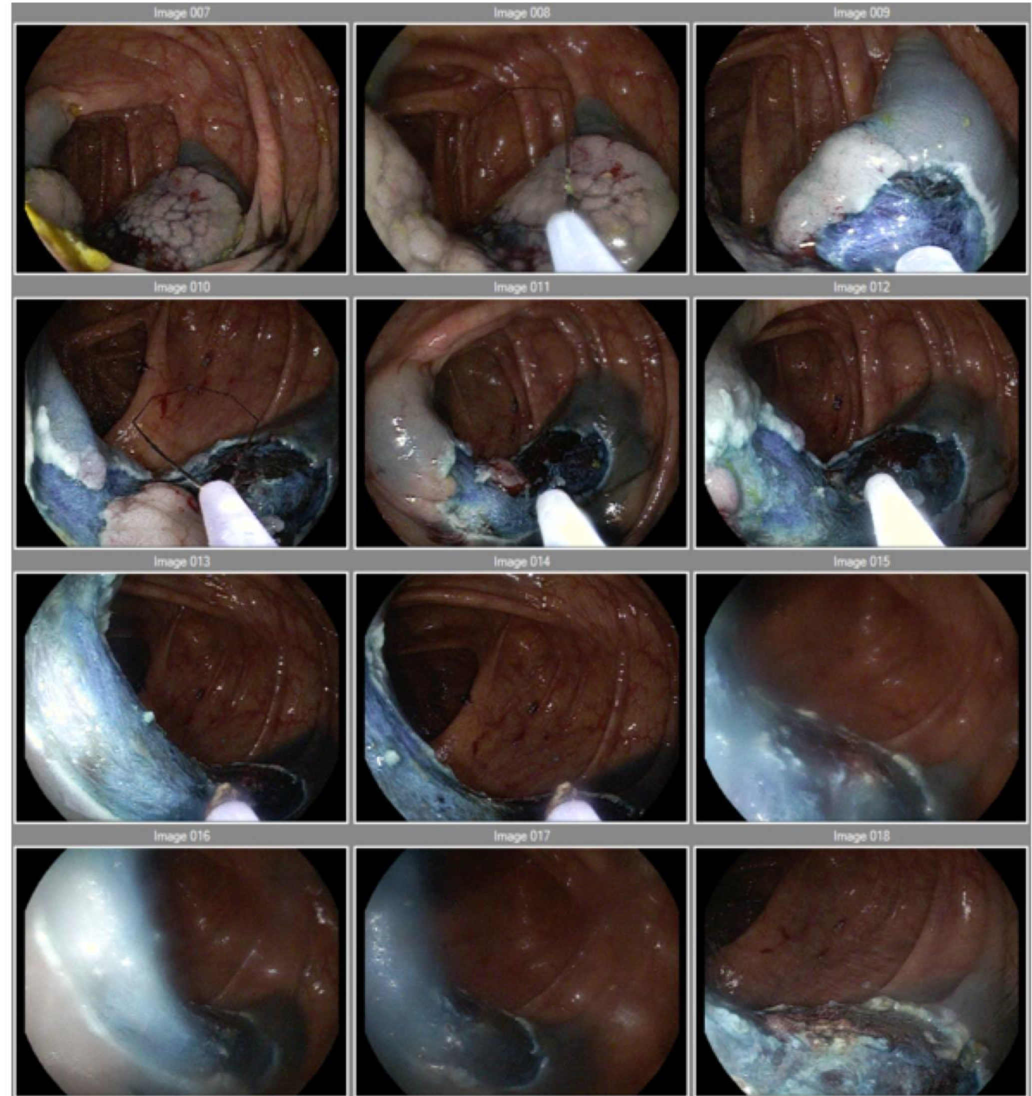
Documentation images

- capture and annotate images (an video)
- Cost savings



Software integration

- Integration into regional EHR (meditech)
- Immediate distribution of reports to EMR of referring physicians and specialists
- Business case created in FH to create a HL7 interface with PHSA
- Have not incorporated pathology modules

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Materials and personnel logistics

- Not currently implemented
- Workflow efficiency
- Inventory management

Site	Current Inventory		Recommended Inventory Required (200)		Suggested to purchase (250)		Suggested to retire		Suggested to Keep	
	Colonoscope	Gastroscope	Colonoscope	Gastroscope	Colonoscope	Gastroscope	Colonoscope	Gastroscope	Colonoscope	Gastroscope
ARH	22	6	27	10	0	2	0	0	27	12
BH	13	7	22	10	9	4	4	3	9	4
ERH	13	6	20	3	6	0	3	0	11	6
LMH	12	5	19	6	3	0	0	0	12	5
RCH	21	18	27	16	4	0	4	4	18	14
RMH	8	8	12	10	4	1	3	4	5	4

ARH – Purchase recommendation:

Colonoscope	CFHQ190L	$39,690.00	0	$0.00
Gastroscope	GIFH190	$29,716.00	2	$59,432.00
	GIFHQ190	$30,736.00	3	$92,208.00
TOTAL :				$59,432.00
TOTAL:				$92,208.00

All colonoscopes/gastroscopes on TSPP service contract
NOT INCLUDED IN INVENTORY COUNT:
5 - 180 series colono and 5- 180 series gastro exclusively used in OR (after hours procedures)
2 - Low use Pediatric colonoscopes and 4 specialty gastroscopes
**Note: All 180 series scopes (5 colono and 5 gastro) will be retired/replaced under OR integration project
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BH – Purchase recommendation:

Colonoscope	EC38i10NL	$30,000.00	9	$270,000.00
Gastroscope	EG29i10	$25,599.00	4	$102,396.00
	EG16k10	$28,938.00	4	$115,752.00
TOTAL :				$372,396.00
TOTAL:				$385,752.00

Max # of procedures/day = 32 total (Colon and Gastro) / day
Recommendation to retire 4 colonscopes based on repair history = Current inventory = 8
Recommendation to retire 3 gastroscopes based on repair history = Current inventory = 4
**NEED A MORE PRECISE MAX # OF PROCEDURES/DAY (Average) in order to make purchase recommendation
*Ultraslim, Transnasal

ERH – Purchase recommendation:

Colonoscope	CFHQ190L	$39,690.00	6	$238,140.00
TOTAL :				$238,140.00

Recommendation to retire 3 colonoscope based on repair cost history
Max # of procedures/day = 19 - Recommendation to purchase 10 colonoscopes
*Note: 1 new colonoscope approved for purchase from Foundation (Aug 16, 2019)

LMH – Purchase recommendation:

Colonoscope	EC38i10NL	$30,000.00	3	$90,000.00
Gastroscope	EG29i10	$25,599.00	0	$0.00
	EG16k10	$28,938.00	0	$0.00
TOTAL :				$90,000.00
TOTAL:				$90,000.00

NOT INCLUDED IN INVENTORY COUNT:
Colonoscopes: 2 - Loaner, 2 Pediatric, 1 Ultraslim, 1 declined repair
Gastroscopes: 2 - not used by Dr., 1 declined repair
**Missing max # of procedures/day count
*Ultraslim, Transnasal
\\FraserHealth.org\HomeDir\HomeDir05\SBath3\

RCH – Purchase recommendation:

Colonoscope	CFHQ190L	$39,690.00	4	$158,760.00
Gastroscope	GIFH190	$29,716.00	0	$0.00
	GIFHQ190	$30,736.00	0	$0.00
TOTAL :				$158,760.00
TOTAL:				$158,760.00

Recommendations:
Colonoscope - Max # of procedures/day = 23, Recommended inventory = 27
Recommended to retire 4 and current inventory = 17, **Recommendation to purchase = 9**
Gastroscope - Max # of procedures/day = 12, Recommended inventory = 16
Recommended to retire 4 and current inventory = 12, **Recommendation to purchase = 2**
**Note: Replacement of 3 CV180 processors /2 CV160 and CV 180 light sources required
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H:\Scope Reviews\RCH\Copy of RCH SCOPE ANALYSIS

RMH – Purchase recommendation:

Colonoscope	CFHQ190L	$39,690.00	4	$158,760.00
Gastroscope	GIFH190	$29,716.00	1	$29,716.00
	GIFHQ190	$30,736.00	1	$30,736.00
TOTAL :				$188,476.00
TOTAL:				$189,496.00

H:\Scope Reviews\RMH\RMH - SCOPE ANALYSIS - 5 Sep

No Scopes Suggested to Purchase - 2019

Site	Current Inventory		Recommended Inventory Required		Suggested to purchase		Suggested to retire		Suggested to Keep	
	Colonoscope	Gastroscope	Colonoscope	Gastroscope	Colonoscope	Gastroscope	Colonoscope	Gastroscope	Colonoscope	Gastroscope
DH	30	5	19	3	0	0	0	0	30	5

NOT INCLUDED IN INVENTORY COUNT:
Colonoscopes - 6 declined repair
Gastroscopes - 4 declined repair
*Note: 13 of the Colonoscopes used at DH are at least 9 years old
*Note: 2 of the Gastroscopes used at DH are at least 9 years old

Part 3: Go Live

In all science, error precedes the truth, and it is better it should go first than last

Horace Walpole, fourth earl of Oxford, 1717-1797

- Excelleris
- Training
  - Targeted education sessions
  - Online course/videos
  - Notification of new credentialing
  - IT support
- Addendums
  - Correction of inaccurate demographic (clerks)
  - Correction of inaccurate clinical (physician)
- Unscheduled cases
  - Streamline data entry requirements
  - Enable wifi on travel carts
  - Enable “always networked” wifi
  - Address site level issues

1. REVISION LOG 2
2. GLOSSARY OF TERMS 4
3. OVERVIEW AND PURPOSE 6
   3.1. Purpose 6
   3.2. System Overview 6
   3.3. System Description 7
4. IMPLEMENTATION MANAGEMENT 9
   4.1. Deployment strategy 9
   4.2. Points of contact 9
   4.3. Implementation schedule 10
   4.4. Security and Privacy 12
      4.4.1. Security and user permissions 12
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5. IMPLEMENTATION DETAILS 13
   5.1. Hardware 13
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   5.3. Go-live task list 13
   5.4. Facilities & material 1
   5.5. Go Live Change management process 1
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6. GO LIVE SUPPORT 3
   6.1. Support resources 3
7. OPERATIONAL SUPPORT (AFTER GO LIVE) 4
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8. DOCUMENTATION 5
9. DOWNTIME PROCEDURES 6
10. IMPLEMENTATION VERIFICATION AND VALIDATION 7

Revision Log

FH Pentax endoPRO Education

Your progress

Welcome to the Pentax endoPRO Education Course

This course provides informative videos on the Pentax endoPRO IQ system and its use. It is available for use by those in Fraser Health Authority that will interact with the system for endoscopy procedures.

OPTIONAL: Please complete the quiz at the bottom of the list of videos.

Terms and Conditions

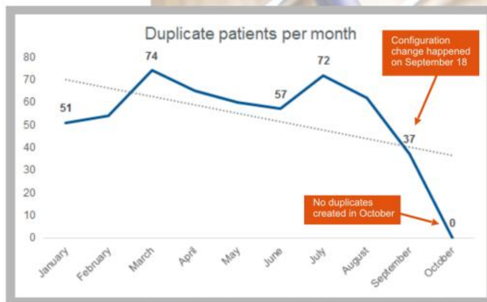
Videos

- Video 1 : Log In (1.41 min)
- Video 2: Scheduler / Whiteboard Basics (4.28 min)
- Video 3: Adding a Manual Appointment (1.51 min)
- Video 4: Basic Image Review (5.35 min)
- Video 5: Advanced Image Review (7.03 min)
- Video 6: Procedure Report Walkthrough: Colonoscopy (8.18 min)
- Video 7: Template Favourites (2.57 min)
- Video 8: List Favourites (2.43 min)

Addendums

endoPRO stats

After changing configurations **duplicate patients are no longer created.**

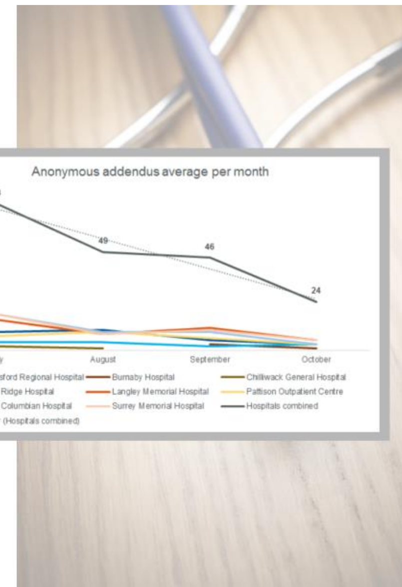


endoPRO stats

The majority of anonymous addendums are for demographics corrections.

Because duplicates are no longer created, we are now seeing:

- Less patient reconciliation
- Less anonymous corrections required



In summary

We usually overestimate what can be done in one year and underestimate what can be done in a decade

Unknown

Clinicians need to be engaged in the roll-out and refinement of these integral systems

Build metrics and capabilities serially

Learn from each other

BC CAN