



ICSN2023

Cancer screening: in the present, the future

Data System and Legal Framework

Torino, Italia

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Population Cancer Screening with Health Connect



Population Cancer Screening with Health Connect

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Population Cancer Screening with Health Connect

Project Background

- 2018 – *The Newfoundland & Labrador Cancer Care Registry (NLCCR)* designated an Official Registry under the regulations of the Personal Health Information Act .
- First designated registry in the regulatory framework of the Act.
- Registry designation enabled the NLCCR to gain access to:
 - Provincial Population Registry
 - Provincial Electronic Health Record

Population Cancer Screening with Health Connect

The need for a consolidated solution evolved over time from the deployment of five separate data repositories

- Cancer Registry – circa 1950
- Cytology Registry – circa 1960
- Breast Screening – 1996
- Colon Screening – 2012
- Systemic Therapy Data Repository – 2015



Population Cancer Screening with Health Connect

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- Breast Screening – 1996
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- Systemic Therapy Data Repository – 2015

Cancer Screening
Project (Health Connect)

Population Cancer Screening with Health Connect

Project Background

- Developed the Registry Model of Population Cancer Screening
- Concept presented at “Dragon’s Den” event in 2019
- Partnership with Deloitte to design and implement our solution (they had done previous work with New Zealand)
- Absolute requirement – solution had to be consolidated, remove the data silos



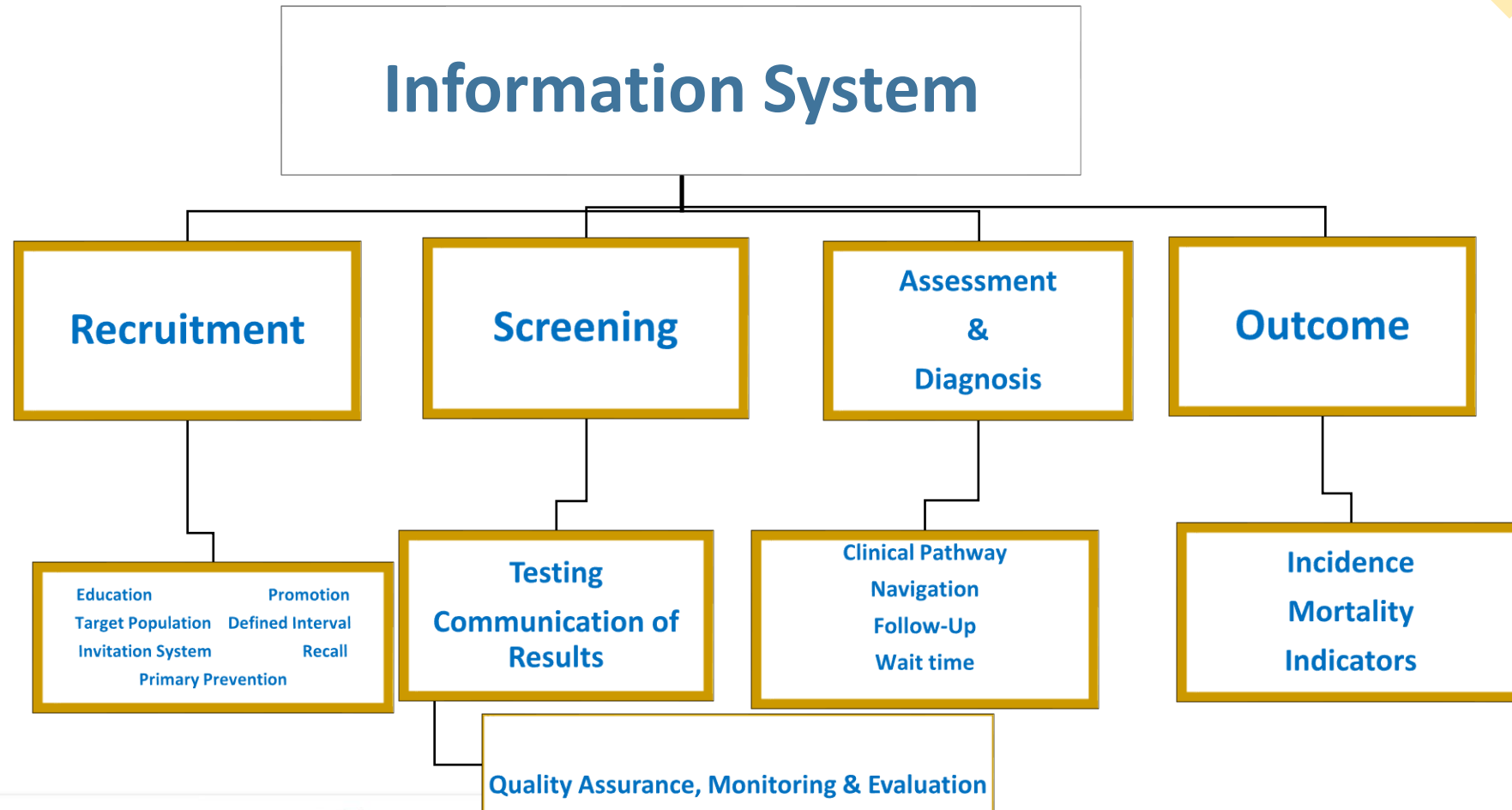
Population Cancer Screening with Health Connect

- Partnership with Deloitte
- Health Connect Chosen as the solution framework
 - Salesforce CRM and Salesforce Health Cloud,
 - Amazon Web Services (AWS)
 - Solution hosted at AWS Montreal Data Centre



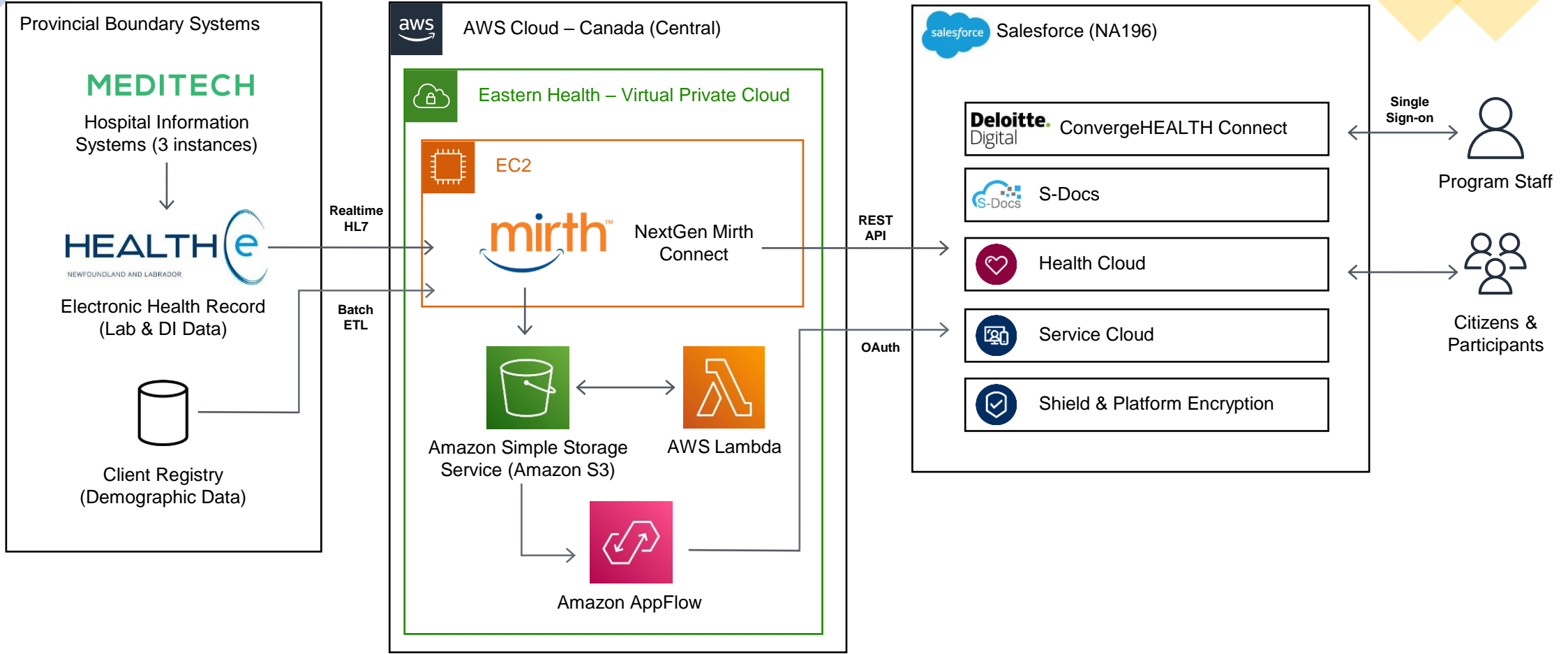
Population Cancer Screening with Health Connect

Cancer Screening Program Pathway



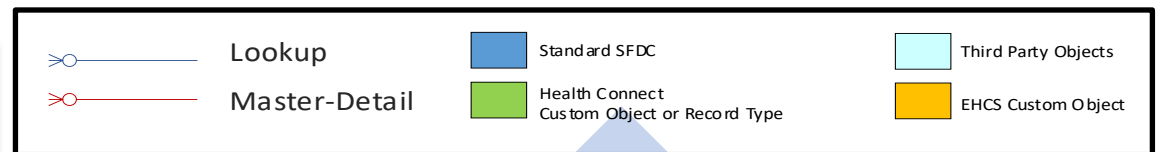
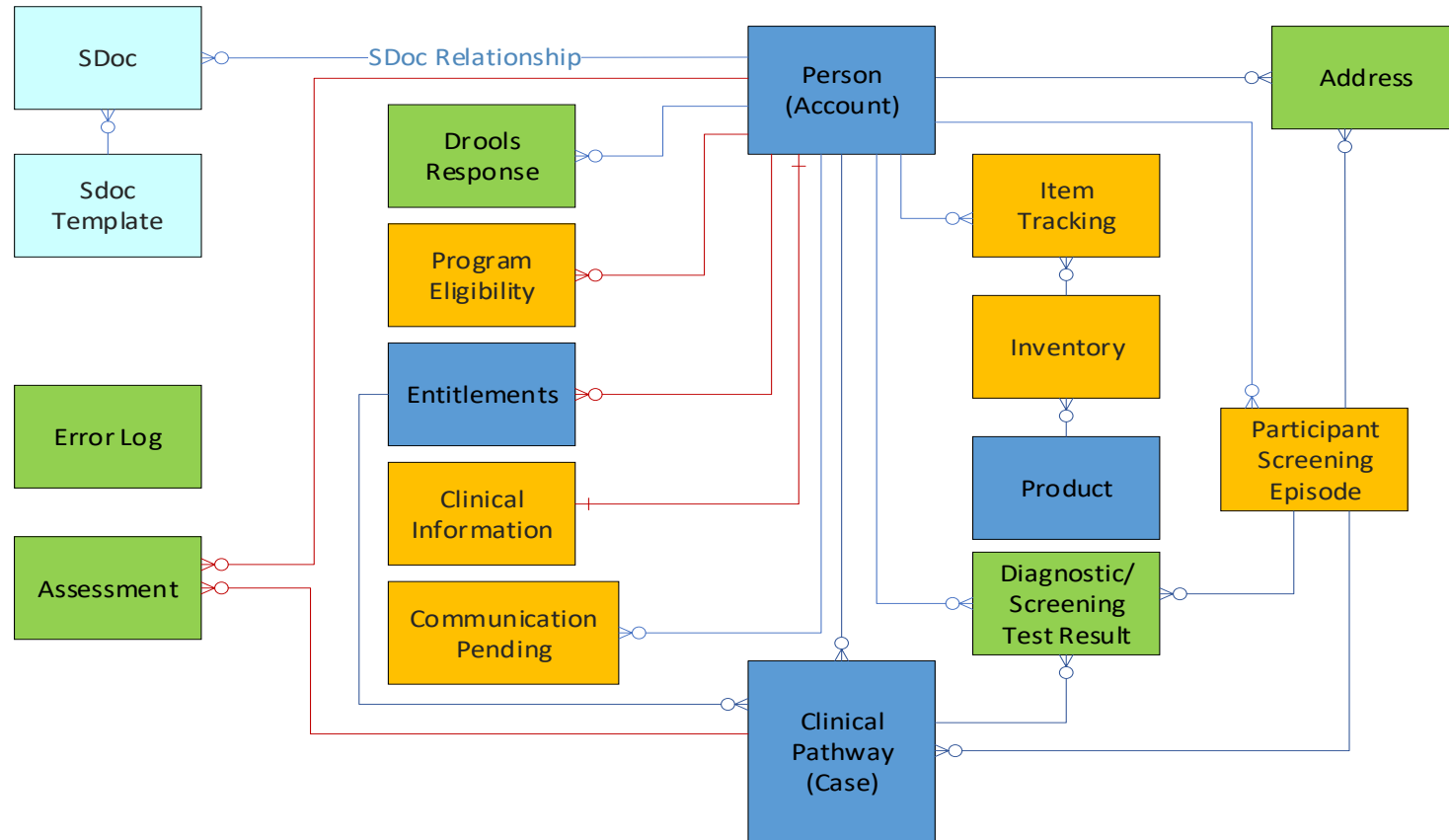
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Solution Architecture



Population Cancer Screening with Health Connect

Population Cancer Screening Data Model



Population Cancer Screening with Health Connect

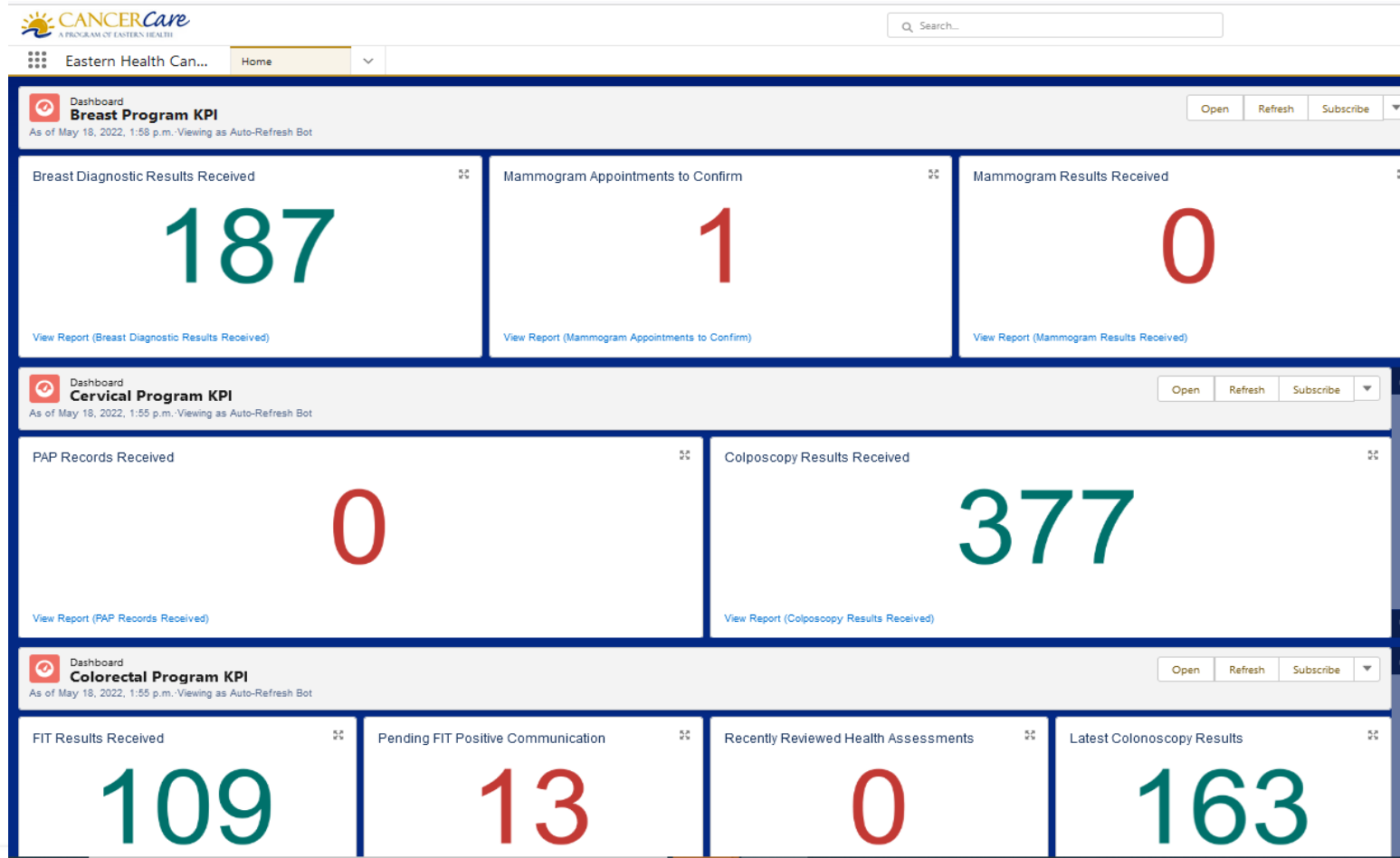
Development of Clinical Pathways

Cancer Screening Project (Health Connect)– Data repository for:

- provincial breast screening and provincial routine and diagnostic breast imaging
- provincial FIT testing and provincial routine and diagnostic colonoscopy
- provincial PAP testing results and fact of colposcopy

Population Cancer Screening with Health Connect

User Dashboards



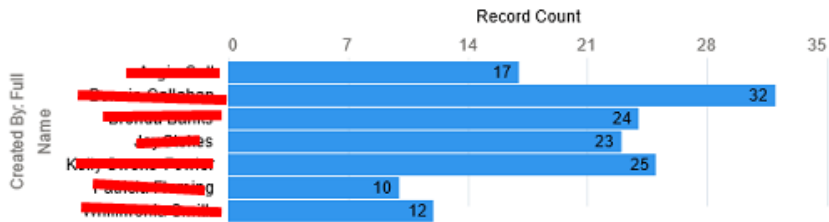
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Key Operational Performance Indicators in real time

Dashboard
Breast Program KPI (Today)

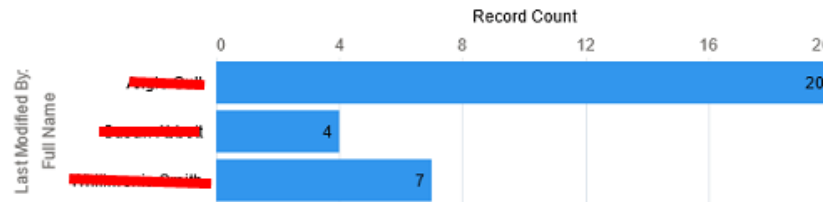
Refresh Edit Subscribe

TodayBSCAptBook(Staff)



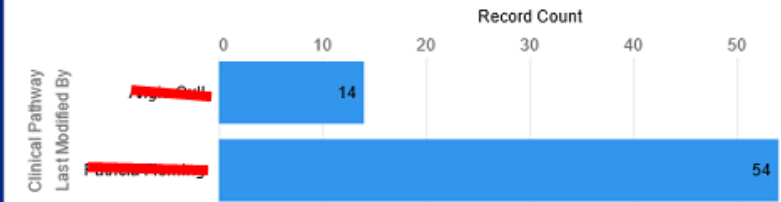
[View Report \(TodayBSCAptBook\(Staff\)\)](#)

DSR's(StaffToday)



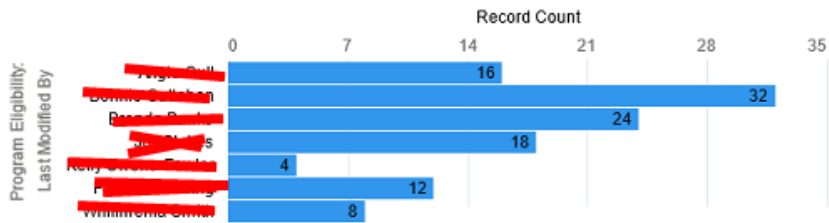
[View Report \(DSR's\(StaffToday\)\)](#)

TodayRegistration(MammoInterview)



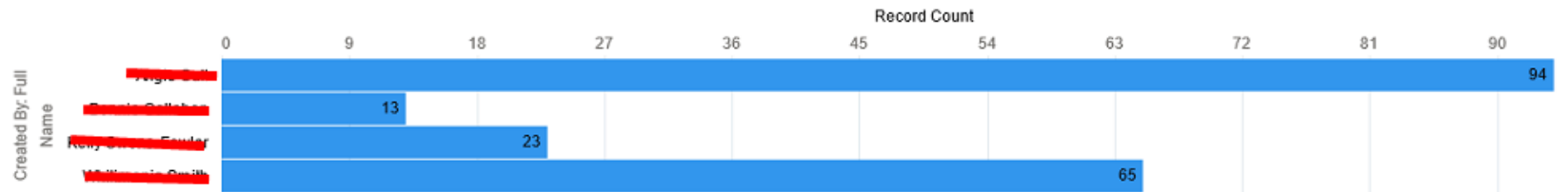
[View Report \(TodayRegistration\(MammoInterview\)\)](#)

Breast Eligibility Today



[View Report \(Breast Eligibility Today\)](#)


BSCLettersToday



[View Report \(BSCLettersToday\)](#)

Population Cancer Screening with Health Connect

Robust Indicator Reporting in real time


 Report: PSEs with Clinical Pathways & DSRs
HolyTrinity(BreastScreening)

Total Records
2,160

<input type="checkbox"/> Specialist ↑	Results ↑	Participant Status ↑	Record Count
<input type="checkbox"/>	Normal 1-year	1-Year Recall	974
		Subtotal	974
	Normal 2-year	2-Year Recall	1090
		Subtotal	1090
	Abnormal	-	3
		Discharge	13
		1-Year Recall	51
		2-Year Recall	29
	Subtotal	96	
	Subtotal	2160	
Total		2160	

Population Cancer Screening with Health Connect

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	Subtotal		
Total			2160

Abnormal Call Rate

4.4%

Population Cancer Screening with Health Connect

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	Subtotal		2160
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Cancer Detection
Rate
6 per 1000 screens

Population Cancer Screening with Health Connect

Robust Indicator Reporting in real time

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	Subtotal		
Total			2160

Positive Predictive Value
13.5%

Population Cancer Screening with Health Connect

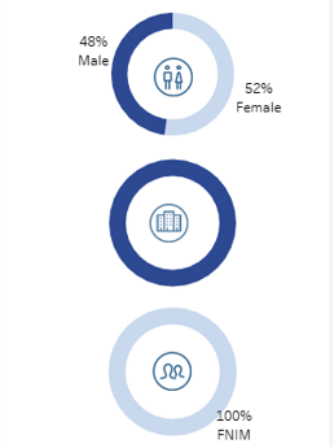
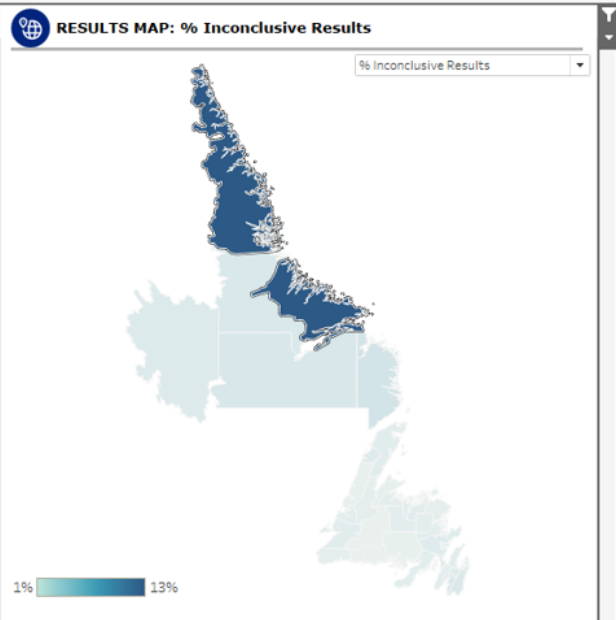
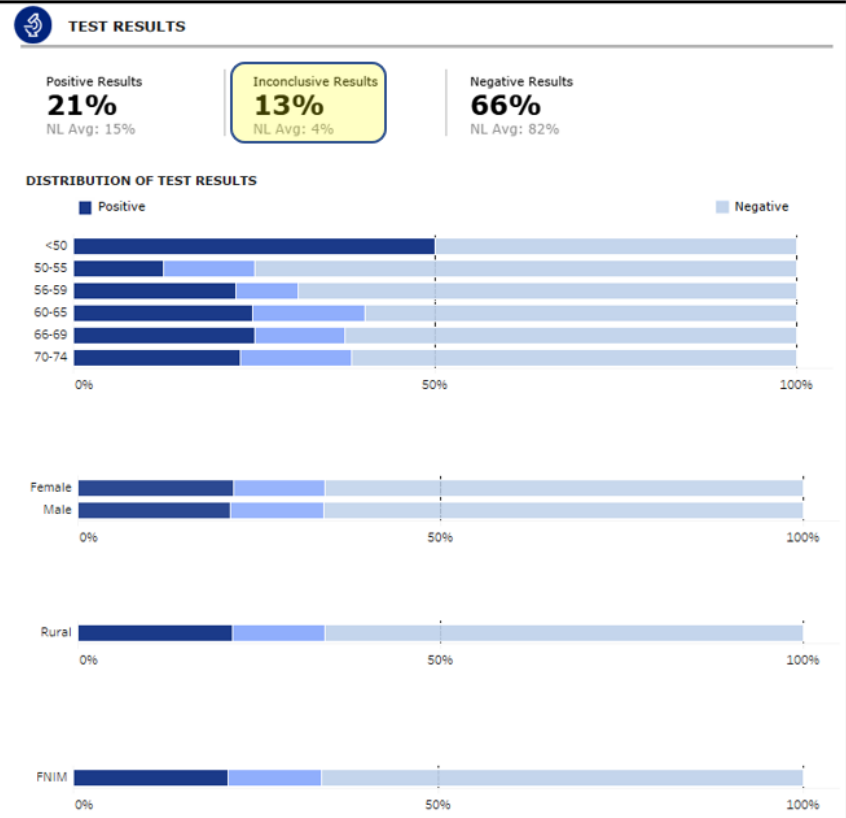
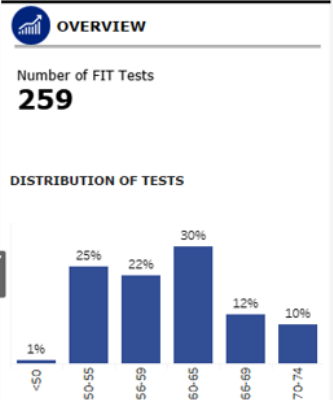
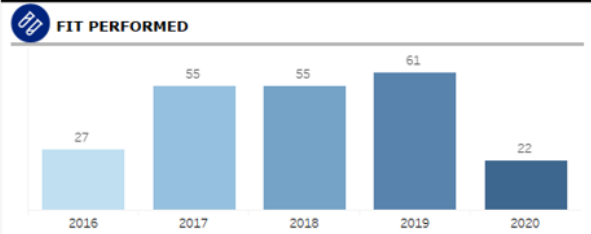
Sophisticated Analytic Capabilities

COLORECTAL CANCER SCREENING ANALYTICS FIT Overview



Filters

- 1. Region
(All)
- 2. PHC Area
(All)
- 3. Year
(All)



Population Cancer Screening with Health Connect

Resulted in the development of wordless instructions

FITKit

INSTRUCTIONS FOR SAMPLE COLLECTION

THIS FIT KIT CONTAINS:

A Two (2) FIT collection tubes - one for each stool sample

B Two (2) folded sample collection tissue papers

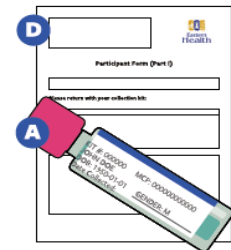
C One (1) plastic biohazard bag and orange cloth

D One (1) participant form. Please be sure to complete and return with samples

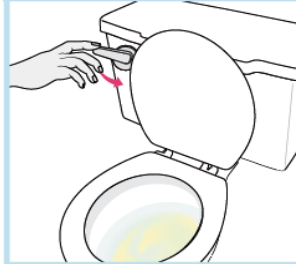
E One (1) protective envelope and return mailing envelope

Be sure to have all your supplies ready and in one place before you begin.

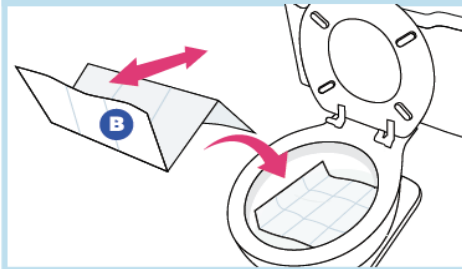
1 CHECK INFO



2 PEE & FLUSH



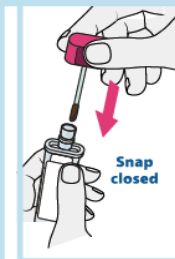
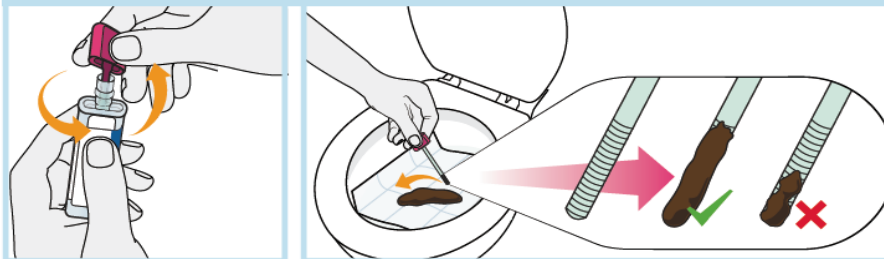
3 PREPARE THE TOILET



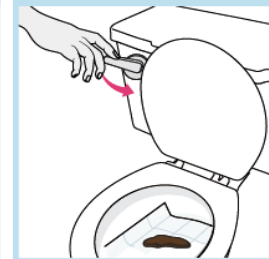
4 POOP



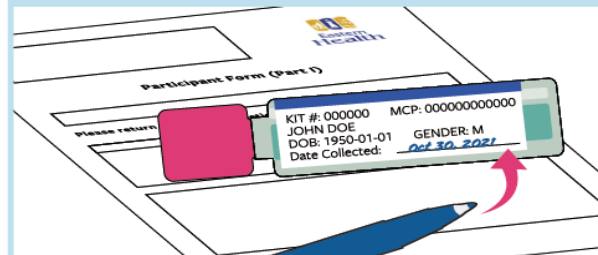
5 COLLECT THE SAMPLE (ENSURE FLUID REMAINS IN THE TUBE)



6 FLUSH



7 WRITE AND STORE

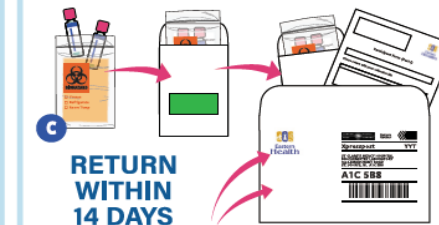


8 REPEAT

REPEAT ON DIFFERENT DAY



9 RETURN



Population Cancer Screening with Health Connect

Opportunity for an online referral portal

[HOME](#) [LUNG SCREENING REFERRAL](#) [COLORECTAL SCREENING REFERRAL](#)

The goal of the Newfoundland and Labrador Colon Screening Program is to reduce the impact of colon cancer on the people of the province. The colon screening program seeks to find colon cancer early when treatment is most effective or find colon polyps before they may grow into cancer.

To get more information on the cancer screening programs at Eastern Health, [click here](#).

The participant must meet the following criteria below:

1. Must be between the age of ≥ 50 and < 74 years old
2. Does not have a personal history of Colon Cancer, Adenomas or Inflammatory Bowel Disease.
3. Does not have a parent/sibling/child diagnosed with colon cancer before age 60.
4. Does not have two or more first degree family members (mother, father, brother, sister, or child) diagnosed with colon cancer.
5. Has not had a colonoscopy within the last five years.

I confirm that I meet all of the criteria list above.

I consent to the [privacy and confidentiality policies of Eastern Health](#)

[Previous](#)

Population Cancer Screening with Health Connect

Development Road Map

Planning the ingestion of other data sets:

- HPV Vaccination data from 2007 to 2022
- HPV PCR Testing Panel Results
- Lung Imaging reports – *development complete*
- Pathology results – *development complete*
- Fact of Cancer from Cancer Registry integration



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Health Connect as a central platform

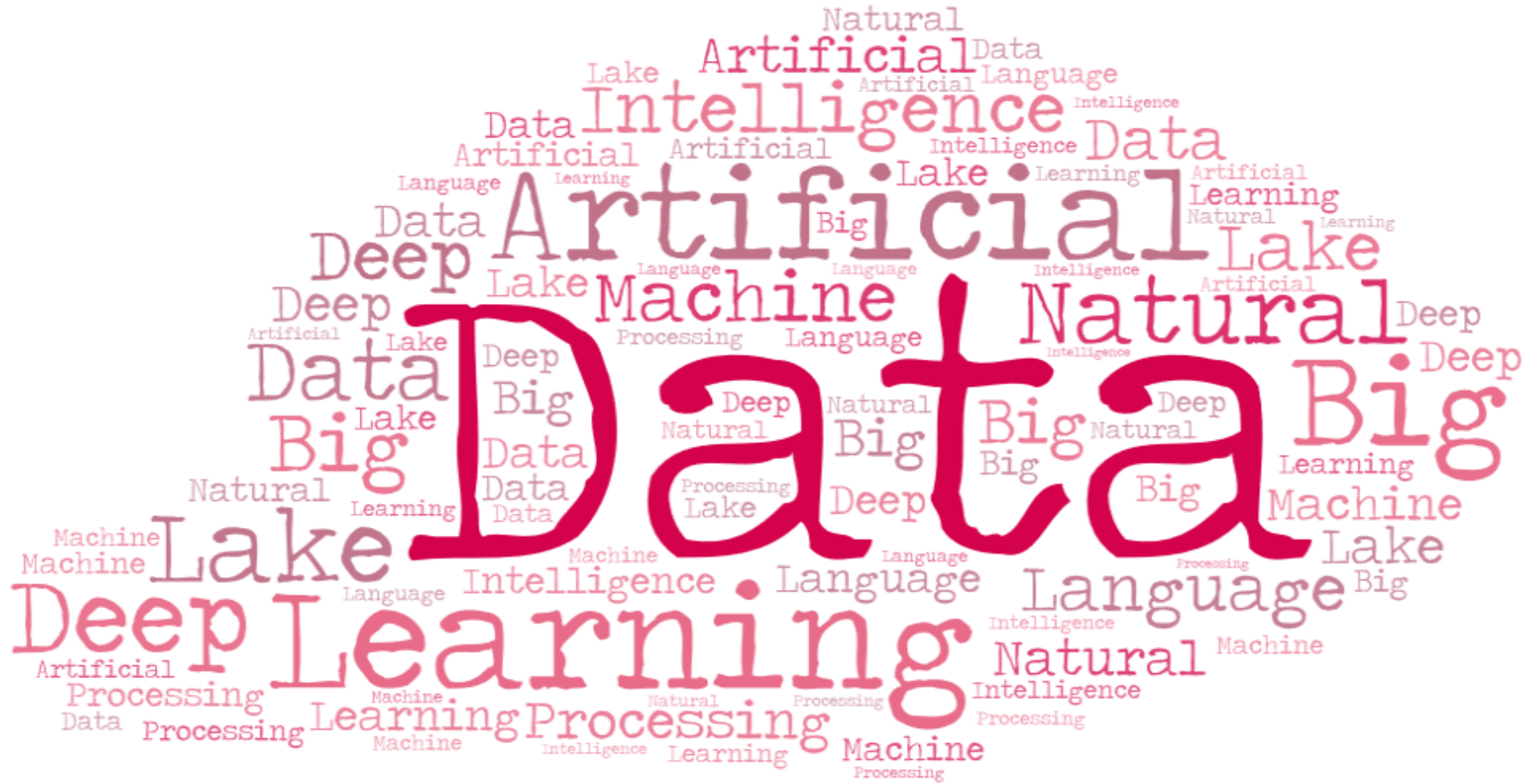
- A very scalable and flexible solution for us
- Allows us to expand on existing infrastructure to add new clinical care pathways with minimal development effort
- Since our initial launch we have developed and deployed
 - Lung screening pathways
 - Thoracic triage
 - Provincial pathology
 - Nurse Navigation

Population Cancer Screening with Health Connect

Current Work

- Expanding our analytics capacity (Tableau)
- Improving our AI algorithms for pathology test result coding (AWS Comprehend Medical)
- Integration to our Health Information System for scanned documents
- Exploring additional use cases for Bilingual Services, Provincial Cancer Registry, other chronic diseases.
- Provincial Lung Cancer Screening
- HPV Primary Screening

Population Cancer Screening with Health Connect



Grazie!



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Cancer screening: in the present, the future

Grazie! Torino.

