

# The Journey to Interoperability in BC Healthcare

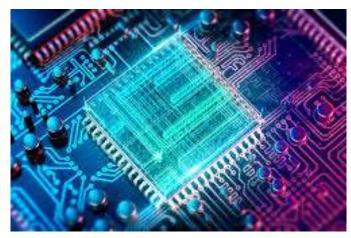
Oliver Thompson, Director, Provincial eHealth Projects Brian Lefebvre, Senior Manger, Provincial eHealth Projects

February 23<sup>rd</sup>, 2022



Information Management / Information Technology Services, PHSA Serving BC Health Authorities and the BC Ministry of Health





Advanced Technology

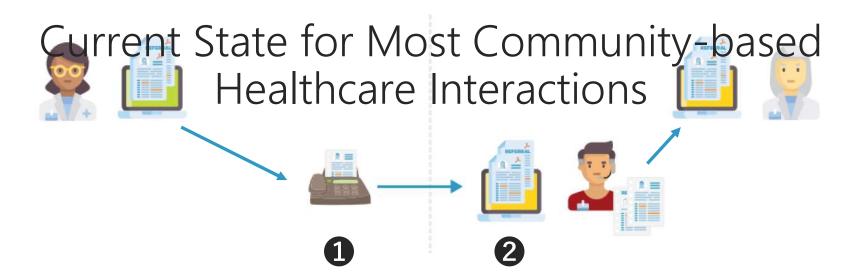
Antiquated Transport System



Brute-force Manual Labour Workforce

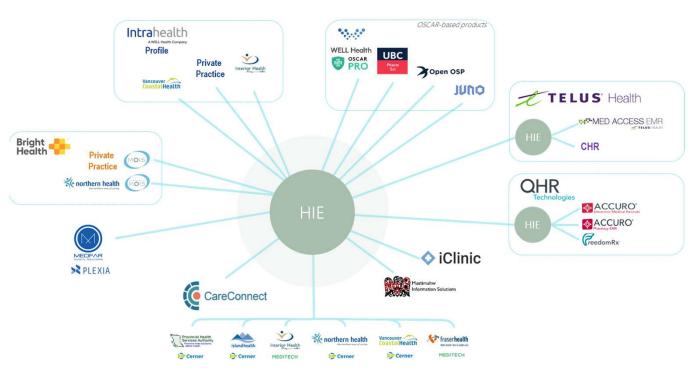


### A world where fax is King!





# BC's Clinical System Environment



Care teams are distributed, and often not all on the same system.

BC's health system comprises the following disparate and disconnected systems:

- 14 different EMR products (over 16 instances) used by community-based physicians, Clinical Pharmacists, and HA Community organizations
- Two different Clinical Information Systems (over five instances) used by HAs

Most systems rely on fax to share information, which leads to workflow integration challenges, poor resource utilization, increased clinical risk, and difficulty sharing clinical information with patients.

# **BC Primary Care Strategy**

"As part of our primary care strategy, we're putting networks of health professionals at the centre of our primary care transformation, making life better for everyone in B.C..

These teams of health-care providers will include family physicians, nurse practitioners and health-care professionals, ranging from registered nurses, traditional wellness coordinators and cultural safety facilitators to allied health-care professionals, social workers and clinical pharmacists." 1

Adrian Dix, Minister of Health



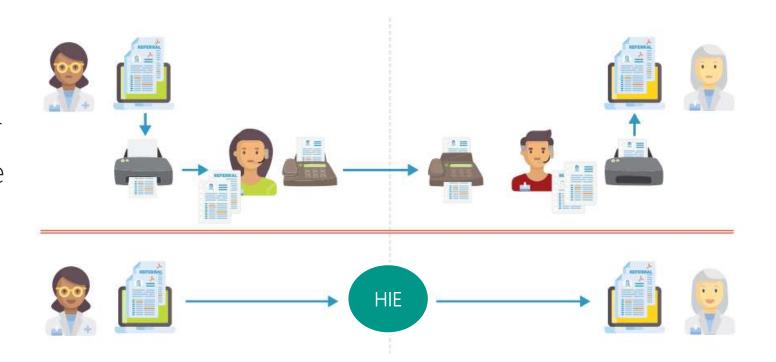
However, clinicians face significant barriers to providing team-based care due to their inability to efficiently and safely share health information and their reliance on manual faxbased workflows.



: News Release: Transforming primary care in B.C., Sept 15, 2020 https://news.gov.bc.ca/releases/2020HLTH0280-001735

### Workflow Inefficiencies

~3.7 million referrals per year in BC. And these are just a subset of all interactions!



### **Provider Frustration**

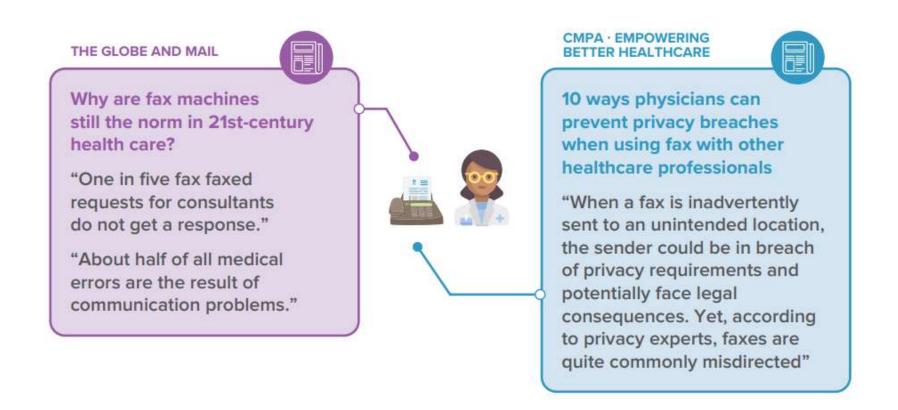
- Two-thirds of family physicians noted that ... communication problem was a main source of frustration; ... not being informed about: referral receipt, the patient's appointment, a treatment plan, etc.
- Similar proportion of specialists noted a lack of basic or supporting information (e.g., reason for referral or lab test results) as a main frustration with referral requests.

Streamlining patient flow from primary to specialty care: a critical requirement for improved access to specialty care, Canadian Medical Association, 2014

Information Management / Information Technology Services, PHS



# Clinical Risk and Provider Liability





# Objectives

 Improve clinical workflows and provider satisfaction by enabling eReferral, eDocument Sharing (e.g. Patient Summary, Care Plan), and eConsult between GPs, Specialists, Clinical Pharmacists, and Nursing and Allied Health Providers using EMR's



### On Clinical Workflows...

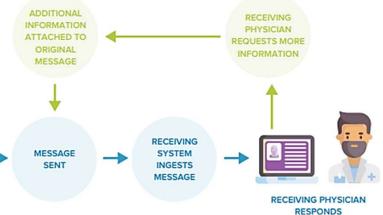
- eReferral: send a referral request, reply with general purpose notification and/or send information request, receive consult report
- eDocument Sharing: send a Patient Summary or Care Plan to another Provider or CareConnect, the Provincial eHealth Viewer
- eConsult: demonstration of concept in partnership with the Electronic Consultative Access to Specialist Expertise (eCASE) team

**OPEN PATIENT** 

CHART



Document Exchange-Based!



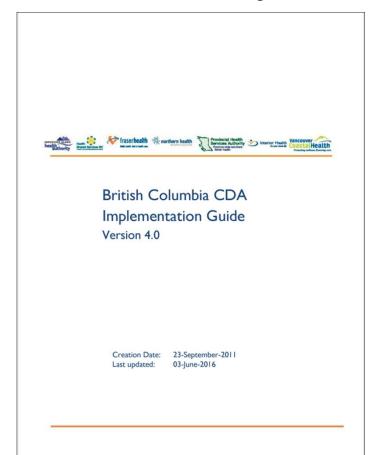
DOCUMENT

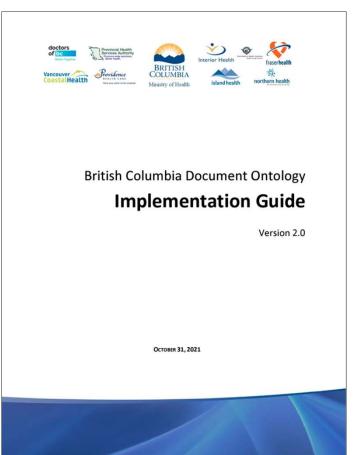
CREATED

LOOP CLOSED

# Leverage Current Health System Assets

- BC CDA
   Implementation
   Guide and
   Provincial
   Document
   Ontology
- CDX Regional HIE



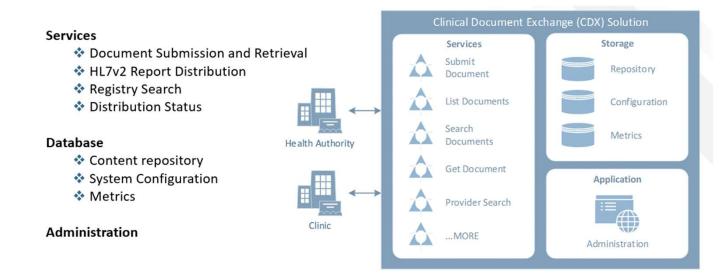


# Leverage Current Health System Assets

- BC CDA
   Implementation
  - Guide and
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  - Document
  - Ontology
- CDX Regional HIE

### **CDX**

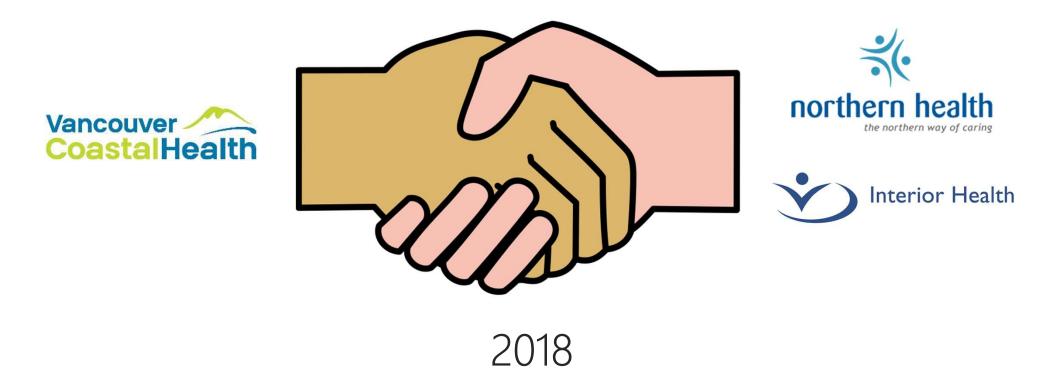
### Clinical Data eXchange







# Short Term EMR to EMR Interoperability Strategy



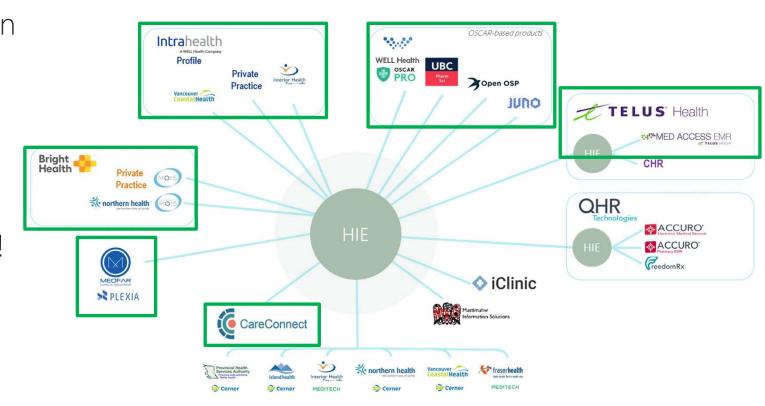
# Short Term EMR to EMR Interoperability Strategy

 Most clinical scenarios relevant to primary carecentric multidisciplinary team-based care are supportable by a small set of core interactions...



# Short Term EMR to EMR Interoperability Strategy

 ...as long as this can be supported across multiple EMRs and if the initial focus is on human-readability!

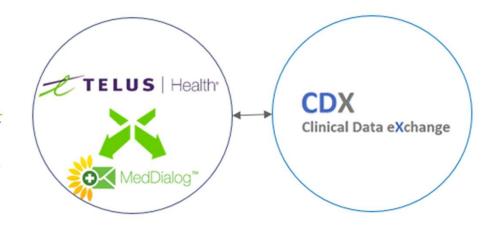


## South Okanagan Similkameen (SOS) Innovation Hub

### **BC Innovation Hub** Phase 1 & 2

Digitally enabling Primary Care Networks to improve coordination among interdisciplinary health care team services and provide a seamless patient experience.

South Okanagan Similkameen (SOS) Innovation Hub











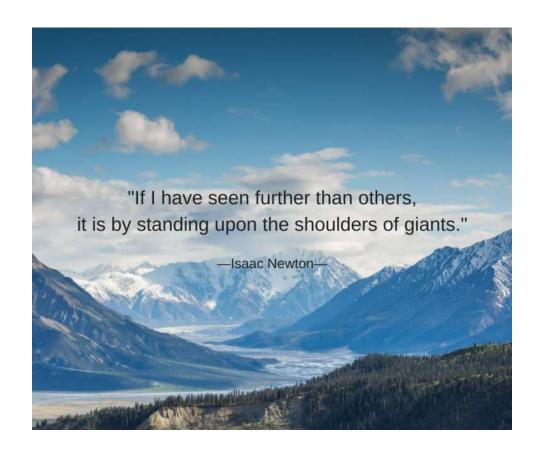






**2020 Canadian Health Informatics Awards (CHIA)** - Innovation in Care Delivery Award

# An Important Moment In Time...



 Clinical Committee and Workflows

- Clinical Validation and Workflow Simulation
- Findings



General Practitioner (GP)

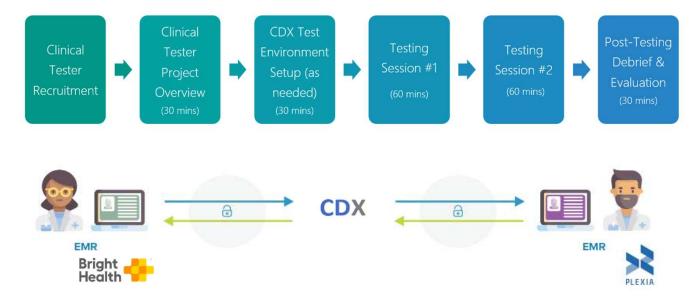
Specialist Physicians (SP)

Medical Office Assistant (MoA)

Primary Care Clinical Pharmacist (PCCP)

Nursing and Allied Health

- Clinical Committee and Workflows
- Clinical Validation and Workflow Simulation
- Findings



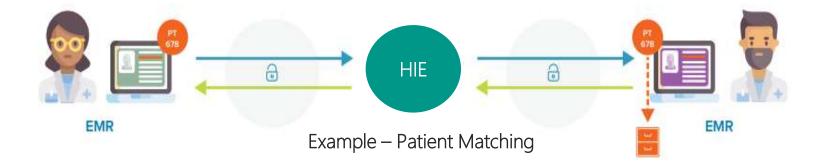
- Actual EMR environments integrated with CDX
- > Simulated clinic and patient data
- ➤ Outcome → near to real life simulation; minus the RISK for clinical testers!

- Clinical Committee and Workflows
- Clinical Validation and Workflow Simulation
- Findings

	Evaluation Focus Areas	Average	% Perceived Improvement
•	Efficiency of workflow in sharing documents	Moderately Improved	89%
•	Number of manual and paper-based steps needed	Moderately Improved	86%
•	Ease of transferring documents	Moderately improved	78%
	Accessing the information needed to support clinical decision making	Moderately Improved	78%
• ;	Security of the information being exchanged	Slightly Improved	67%
	Ease of matching incoming documents to patient records/files	Slightly Improved	56%
	Number of clicks (steps) involved in sharing clinical documents	Moderately Improved	44%
•	Number of 'missing' documents	Slightly Improved	33%

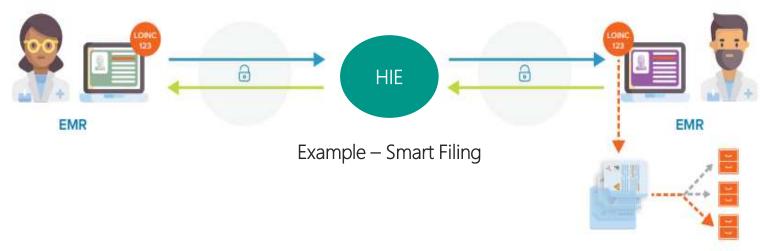
- Clinical Committee and Workflows
- Clinical Validation and Workflow Simulation
- Findings

"Appreciated seeing how EMR to EMR Interoperability will streamline some of the extra steps we do currently when sending faxes"



- Clinical Committee and Workflows
- Clinical Validation and Workflow Simula
- Findings

"Made me more confident in how easy the solution will be to use in our EMR system"



# Status and Next Steps

- Focus on readiness for BETA Testing – i.e. use in real clinical practice settings
- Confirm plans for BETA testing with EMR Vendors, CDX, and Provincial Partners (MoH, Doctors of BC)

Vendor	Bright Health	MEDFAR	Intrahealth	TELUS Health	Well Health	Colcamex
Product Name	MOIS EMR	Plexia EMR	Profile EMR	MED ACCESS EMR	OSCAR PRO	UBC Pharmacy
Clinical Validation Complete	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>√</b>	<b>✓</b>	✓
eReferral - BETA Ready	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>√</b>
eDocument Sharing - BETA Ready	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>√</b>	<b>✓</b>	<b>√</b>
Send to CareConnect - BETA Ready	<b>✓</b>					
Instances:	Community	Community	Community	Community	Community	UBC
	NHA		IHA, VCH/PHC			

Status by 01 April 2022

### Thank You...

- Sponsors
- EMR Vendor and Development Partners
- Partners at CDX
- EMR to EMR
   Interoperability
   Program Team





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   Interoperability
   Program Team

















# IHA/NHA CDX Team

### **Northern Health**

#### **Robert Conway**

Regional Manager, HIN Standards & HIE

#### **Operations**

- Vacant HIE Analyst (Hiring)
- George Wu HIE Analyst

Natalie Schweizer Interop

Mani Samani – Information

Ramandeep Dhanoa - Interop

Standards Specialist

### **Interior Health**

#### **Mark Leier**

Manager, Application

Development

#### **Development**

- Jeremy Chapmea for ftware Architect
- Benson Lott Senior Software Develope
- Jakee Khan Senior Software Develope
- Shane Sobus Senior Software Developer
- Brice Wilkie Software Developer
- Jane Huajing Quality Assurance Analyst
- Vinoda Balpunoori Quality Assurance

### **Interior Health**

#### **Rob Landry**

Manager, Health Information Exchange

#### **Shane Wells**

Assistant Manager, HIE

#### **Operations**

- Vacant HIE Analyst (Holding
- Dian Zhang HIE Analyst
- Troy Clark HIE Analyst

#### Project

- Andrew Barton CDX Product Owner
- Marta Lubaszewski HIE Project
   Manager
- Cea Mavritsakis HIE Scrum Master
- Jay Martens Senior HIE Analyst
- Matt Hansen HIE Analyst
- Lynn Lavoie Senior HIE Analyst
  - Vacant HIE Project Analyst (Hiring)



### Thank You...

- Sponsors
- EMR Vendor and Development
   Partners
- Partners at CDX
- EMR to EMR
   Interoperability
   Program Team

### Project Leadership

- Oliver Thompson, Director
- Brian Lefebvre, Senior
   Manager

#### **Project Leads**

- Luc Holland, Senior PM
- Mauree Matsusaka, Senior
   PM
- Tiffany Chui, Senior PM
- Anton Egorov, Senior PM
- Stephanie Howard, Senior
   PM
- Dilber Pannu, Quality
   Management Lead
- Vacant, Evaluation
   Manager

### Core Project Team

- Vacant, Test Analyst
- Vacant, Test Analyst
- Matthew Sheppard, Senior
   Business Analyst
- Michael Pan, Senior
   Business Analyst
- Aline Alves de Oliveira,
   Senior Business Analyst
- Naved Azhar, Senior
   Business Analyst
- Mia Vorland, Business
   Analyst
- Sarah Siddiqui, Project Coordinator



# Objectives

 Improve clinical workflows and provider satisfaction by improving the way specific data is collected and shared across the Health system



# Leverage Current Health System Assets

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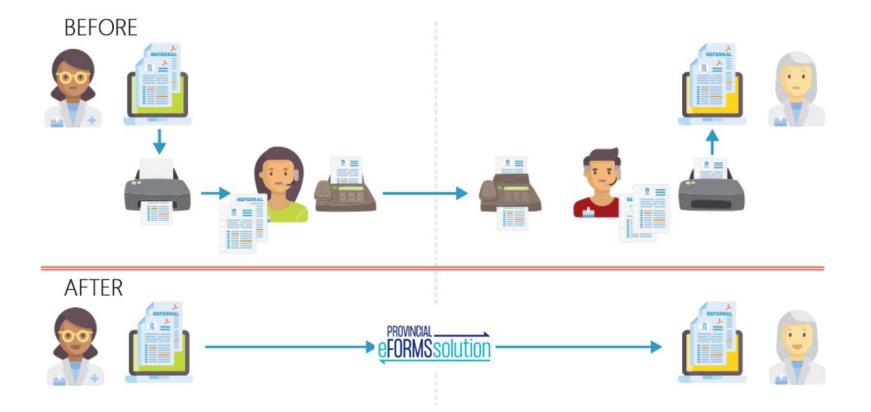
All healthcare forms\*

Always up-to-date

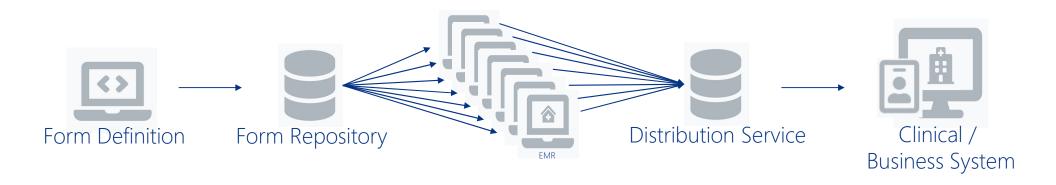
All points of service

Pre-populated where possible Delivered electronically

\*In scope is forms used by community-care providers which are required by HAs and MoH and other organizations that require health-related content (i.e., RoadSafetyBC, ICBC)

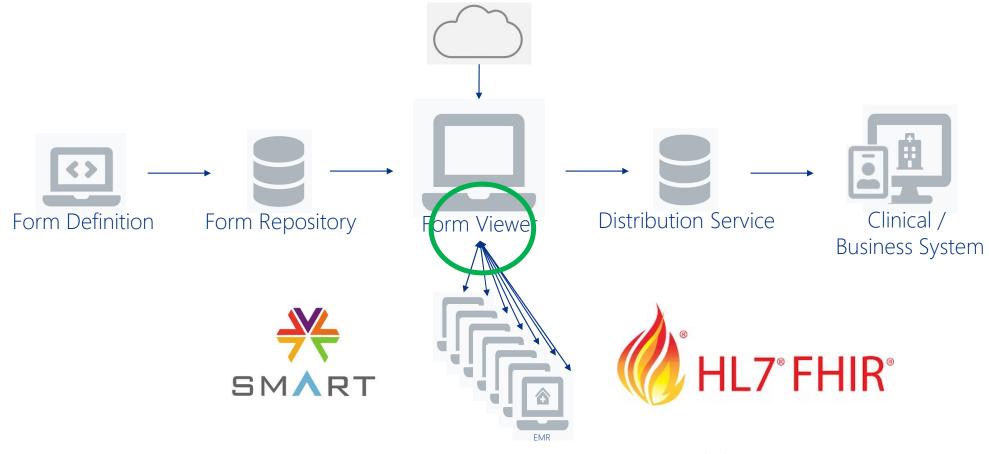


# First Option – decentralized model



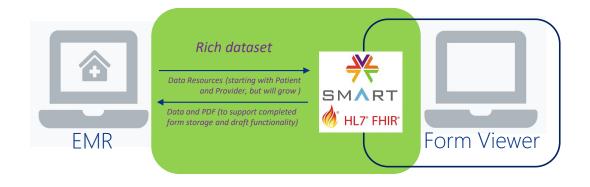
9 complex / single purpose implementations; 9 viewers; 9 distributions

## A Better Option – centralized model



9 relatively easy and reusable implementations; 1 viewer; 1 distribution; + stand alone access

### SMART on FHIR Architecture for eForms Integration

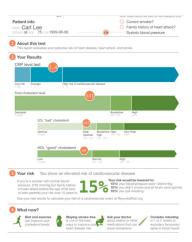


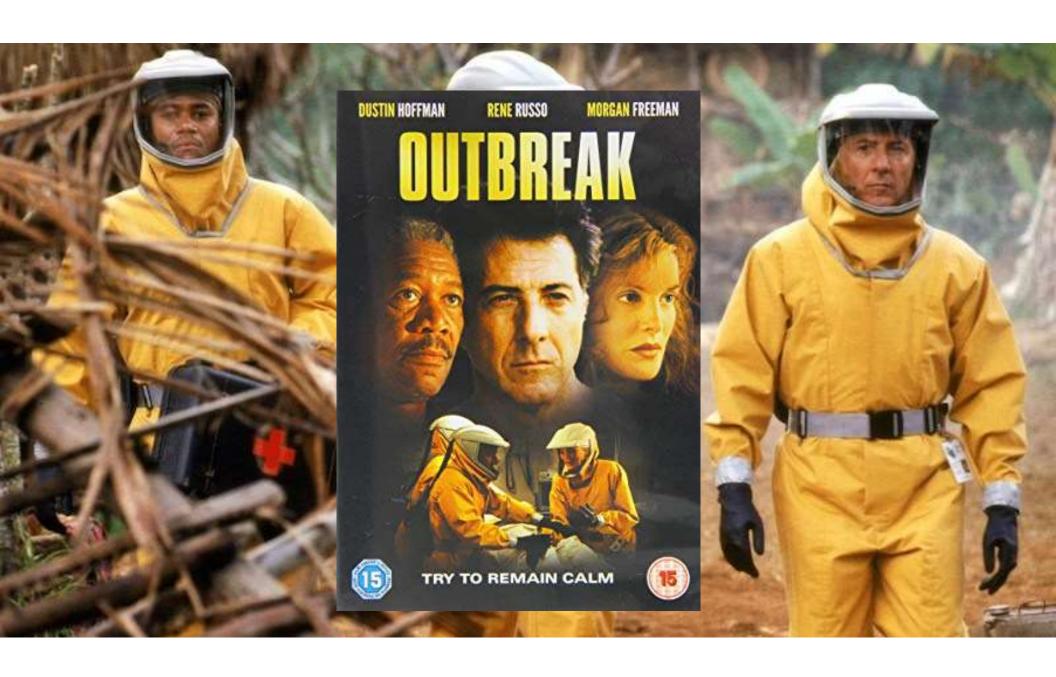
And it is not just eForms ...

SMART on FHIR enables clinical systems to rapid integration third-party applications.

Two examples, of 1,000s, are Cardiac Risk Report and Growth Chart, developed by Boston Children's Hospital <a href="https://apps.smarthealthit.org">https://apps.smarthealthit.org</a>





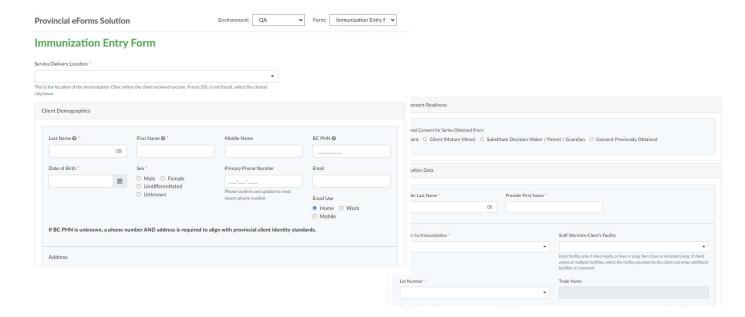


## Covid Vaccine Immunizations eForm

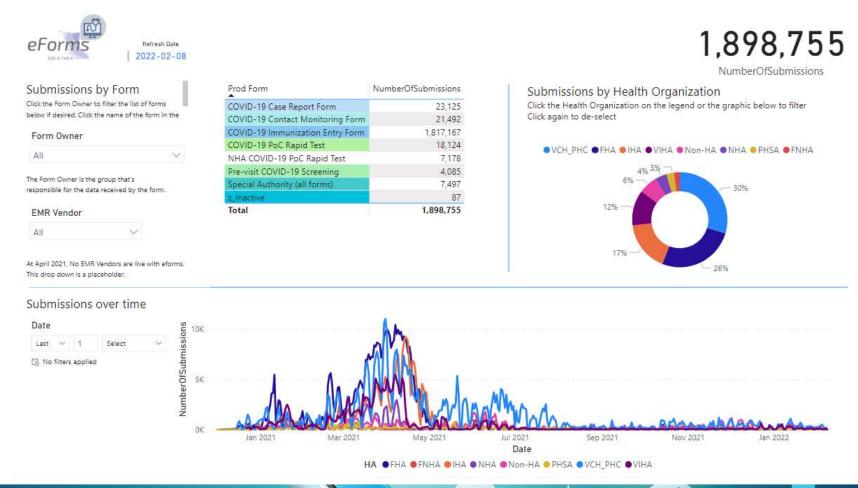
2 years of engagement → 3 months of planning → ∠ days to ...



... develop and implement a single eForm that would be used by all Health Authorities and send discrete data to the Provincial Immunizations Repository



## Report Dashboard



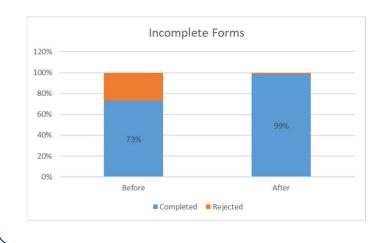
# Getting Back to our Original Vision



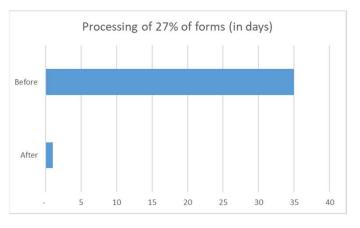
### Second Success

#### Implementation all 300 Special Authority Forms

√95% reduction in submission of incomplete forms (from 27% to 1.4%)!



✓27% of forms automatically approved and submitters informed within 8 hours vs 6-8 weeks



Significantly Improved Patient Care

# EMR Vendor Onboarding Status

Vendor	Status	Comments
iClinic	Golive <u>planned</u> in March 2022	
Bright Health (MOIS)	Golive <u>planned</u> in March 2022	Used by MoH as Provincial EMR
Intrahealth (Profile)	Golive likely in March 2022	Also used by VCH and IH
Mustimuhw	Golive likely in Spring 2022	
WELL Health (OSCAR Pro)	Golive likely in Spring 2022	
QHR (Accuro)	Golive likely in Fall 2022	User base is mostly specialists
Telus Health EMRs (MedAccess, InputHealth, Wolf)	Ongoing discussions	
MedFar (Plexia)	Ongoing discussions	User base is mostly specialists
Other OSCAR-based EMRs	Ongoing discussions	



## Key Messages

- 1. Tremendous progress has been made in the journey to interoperability in BC healthcare notably through EMR to EMR Interoperability via CDX and the Provincial eForms Solution
- Stakeholder Engagement and Partnerships especially with EMR vendors are critical to success
- Hyper-focus on the business problem the technology will come; in some cases it may already be available and in place!

