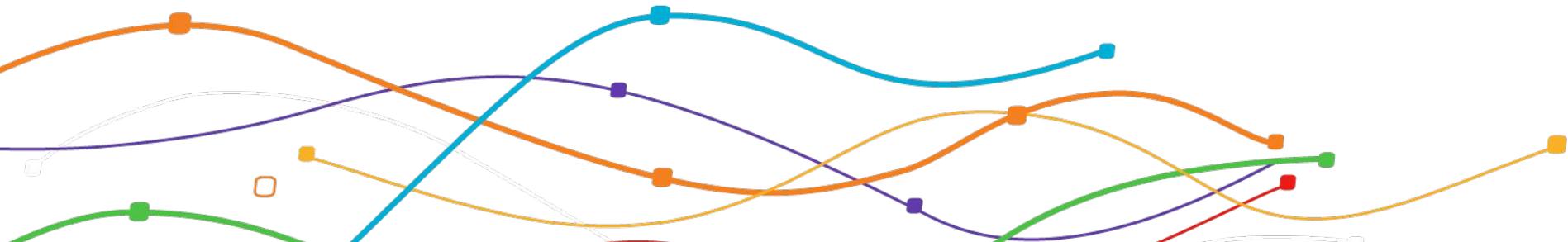


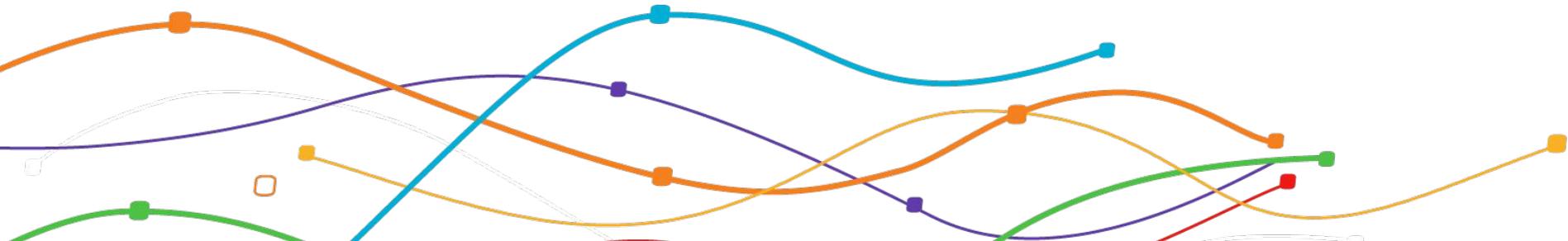


NIITA Symposium 2023

October 17-19, 2023 in Whitecap,
Saskatchewan

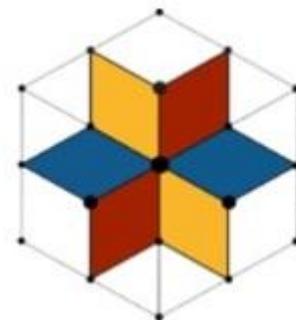


Indigenous Health Information Data Sovereignty

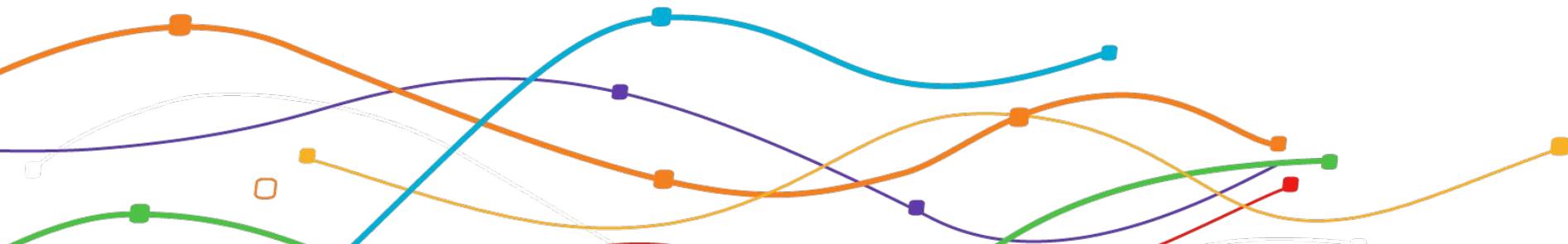




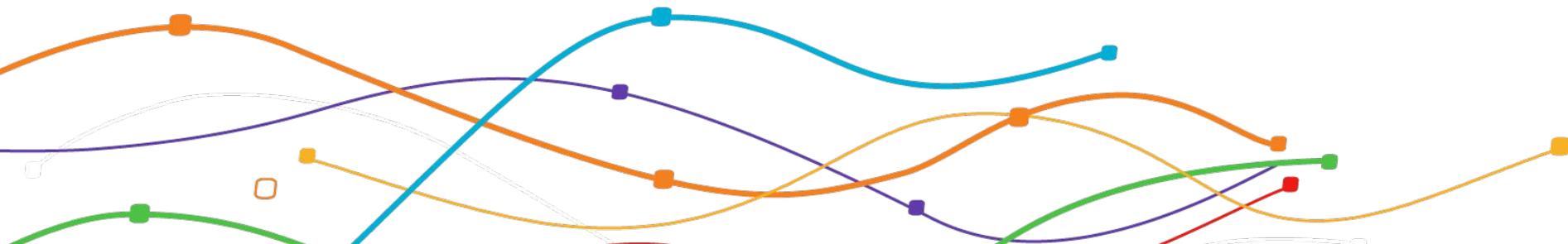
FIRST NATIONS HEALTH AND SOCIAL
SECRETARIAT OF MANITOBA



NATIONAL INDIGENOUS
INFORMATION
TECHNOLOGY ALLIANCE
L'ALLIANCE NATIONALE
AUTOCHTONE DE LA
TECHNOLOGIE DE
L'INFORMATION



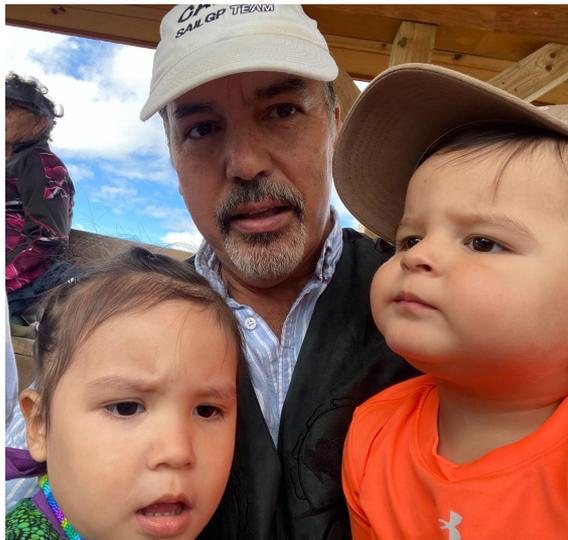
Welcome - Smile Partners Speaking at this event.



Why

Latest Generation of the Morrison Family
Big Grassy River Reserve

smileTM
DIGITAL HEALTH



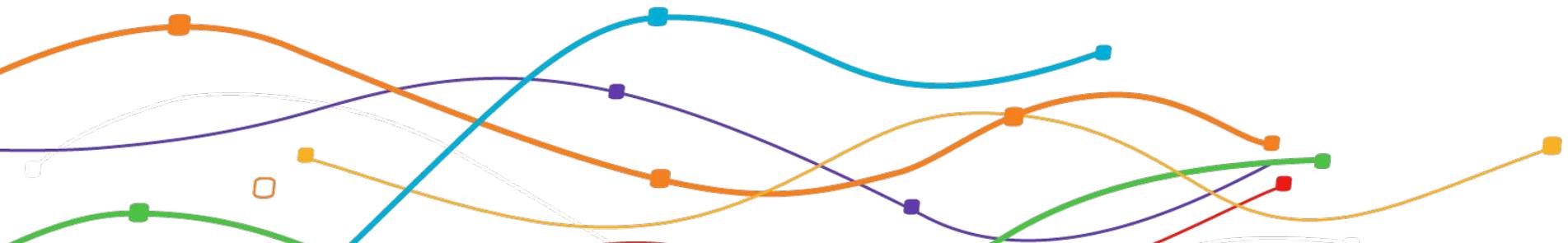
Amber

Eden

Ziigwan

**Do you have a good
imagination?....**

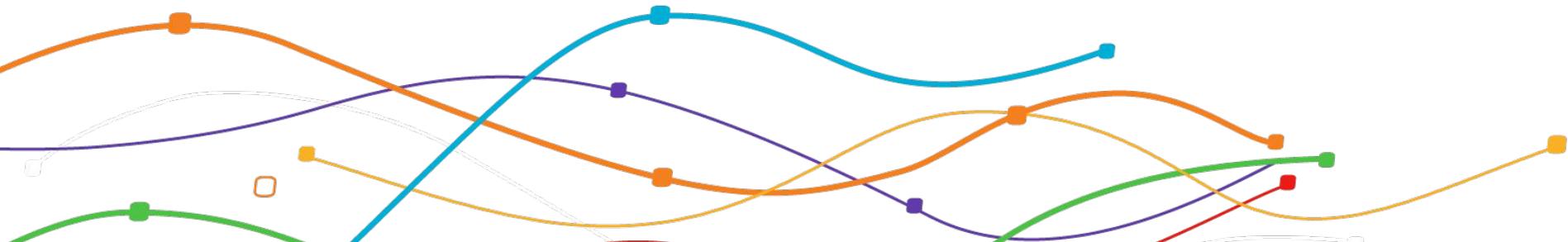
I do!

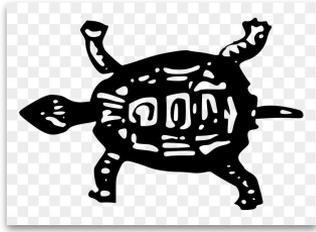




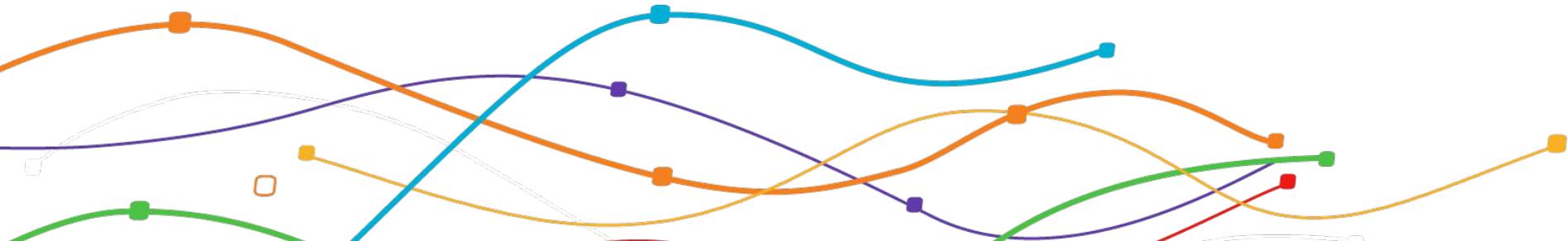
I have a dream....

**Please indulge with me for a brief moment
in my vision of an interconnected
Indigenous Health System.**



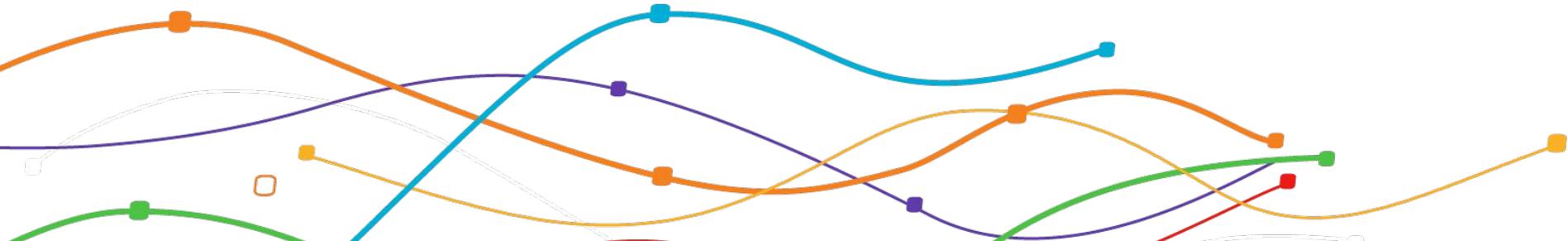


Imagine an Indigenous Managed Health Information Exchange, where the Indigenous health data is centralized safely and readily available to a number of Indigenous Health Applications across the land, even on the most remote communities across Turtle Island





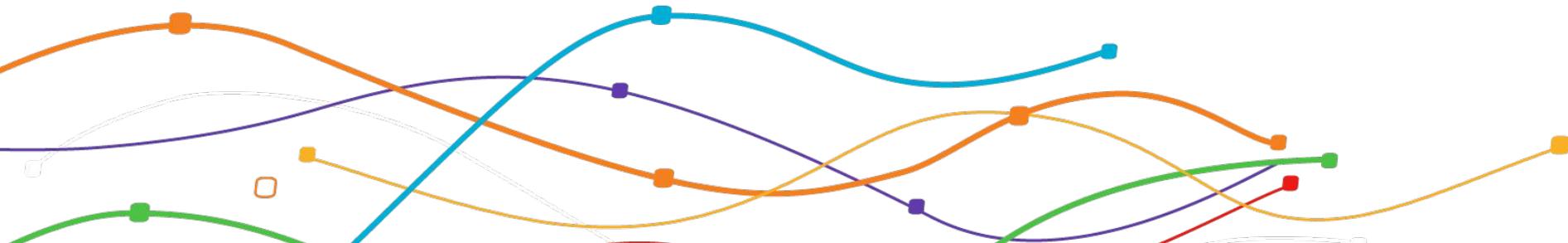
A study involving 266 organizations that work with human trafficking survivors and sexually exploited women and girls in Canada reported that 51% of trafficked girls were or had been involved with the *child welfare system*, and 50% of trafficked girls and 51% of trafficked women were Indigenous. Imagine a way to monitor and alert us when one of our women is treated at a Hospital or Clinic, this could only be possible if we have a centralized location to store Indigenous Health Data.



According to the Canadian Medical Association Journal report on : **Reconciliation and Canada's overdose crisis: responding to the needs of Indigenous Peoples**

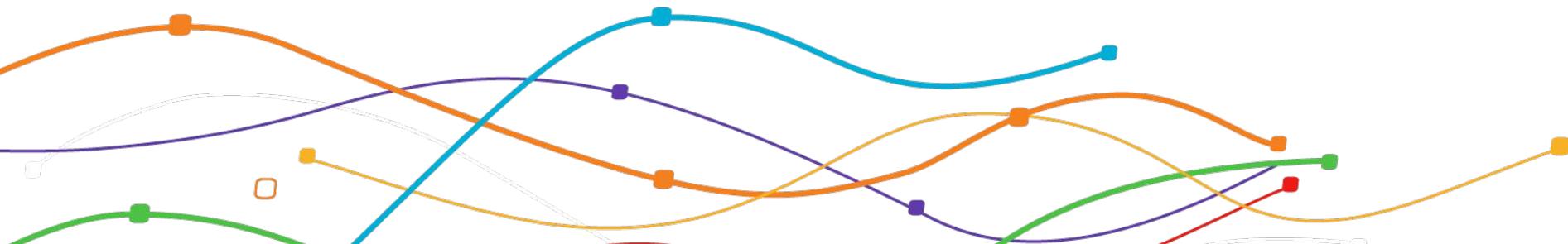
Key Points: Canada's drug overdose crisis disproportionately affects Indigenous Peoples differently owing to a legacy of colonialism, racism and intergenerational trauma.

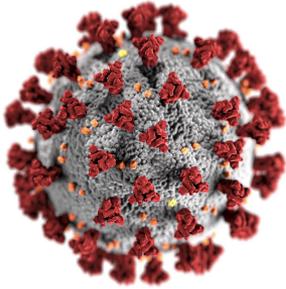
Disaggregated data on Indigenous people is needed to understand more clearly how Indigenous Peoples are affected by drug overdoses.



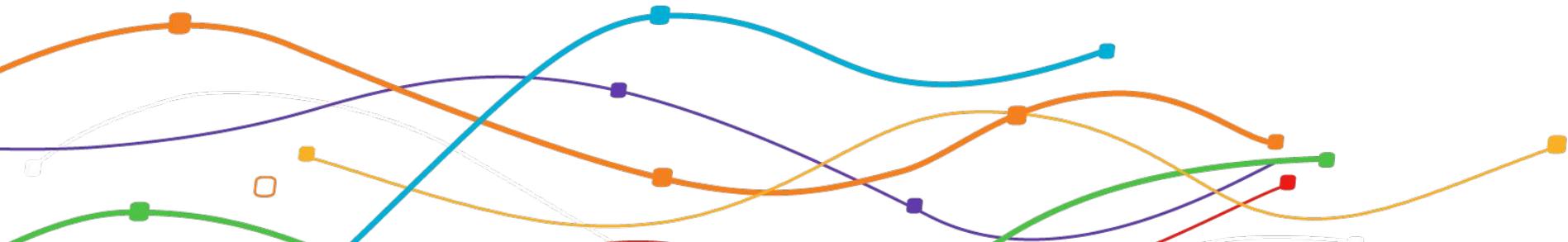


***Imagine* that our Indigenous Research Applications can use the centralized data to better understand and help our members. *Imagine* a live dashboard to track live overdose episodes on specific regions to activate emergency procedures to find the source of the poisoned pills.**



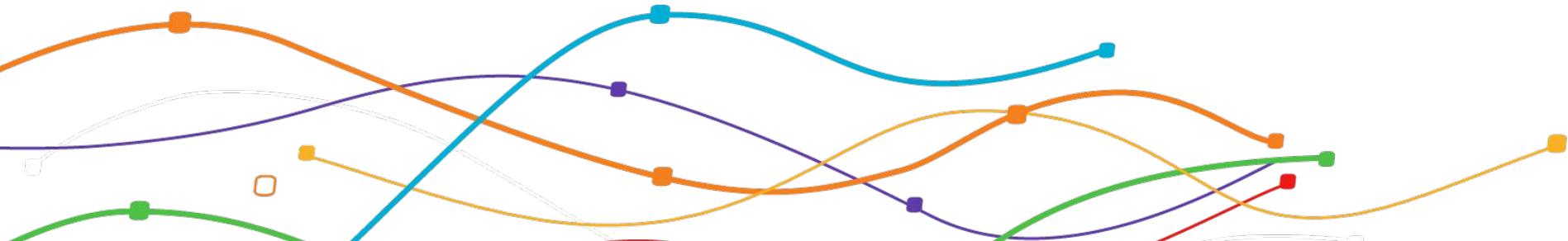


Imagine, that when the next *pandemic* hits us, we are able to have accurate data from our many Indigenous Communities across the land and are able to quickly react to their needs. Imagine creating a Smart on FHIR application in Months instead of Years to create solutions that we can even think at this time.





Imagine Indigenous Health Information Data Sovereignty. The capability of securing and safely sharing data with other indigenous regions is available soon. Having a consent engine that allows you to control your data at the data level



Imagine not being locked-in with someone's proprietary solution, but have the freedom of Open Source Data

1. FLEXIBILITY AND AGILITY

IT leaders must fundamentally provide flexibility and agility for their enterprise.

2. SPEED

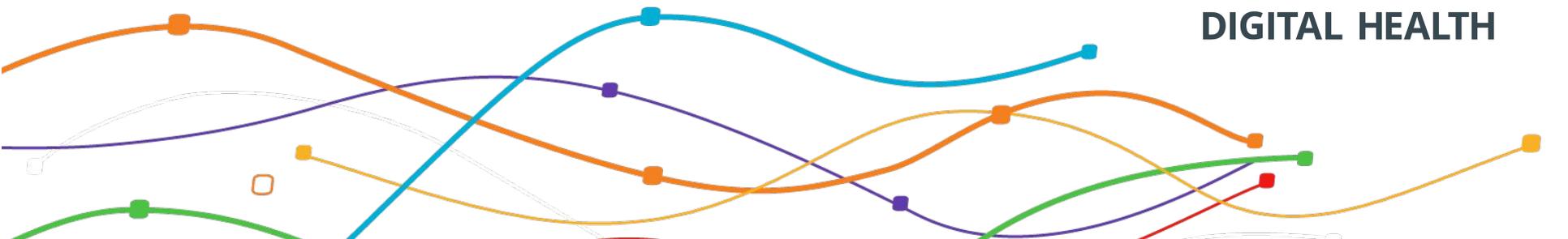
Your enterprise will soon be competing on speed, if it isn't already. Open source enables speed.

3. COST-EFFECTIVENESS

Open source is generally much more cost-effective than a proprietary solution.

4. ABILITY TO START SMALL

5. SOLID INFORMATION SECURITY



smileTM
DIGITAL HEALTH

6. ATTRACT BETTER TALENT

Open source gives enterprises the ability to attract better talent. Most professional technologists are well aware of open source and many believe it's where the industry is headed. Many enjoy creating their own projects and having the ability to interact with others outside their enterprise to develop solutions. Giving developers flexibility and freedom can be an important tool in attracting better talent.

7. SHARE MAINTENANCE COSTS

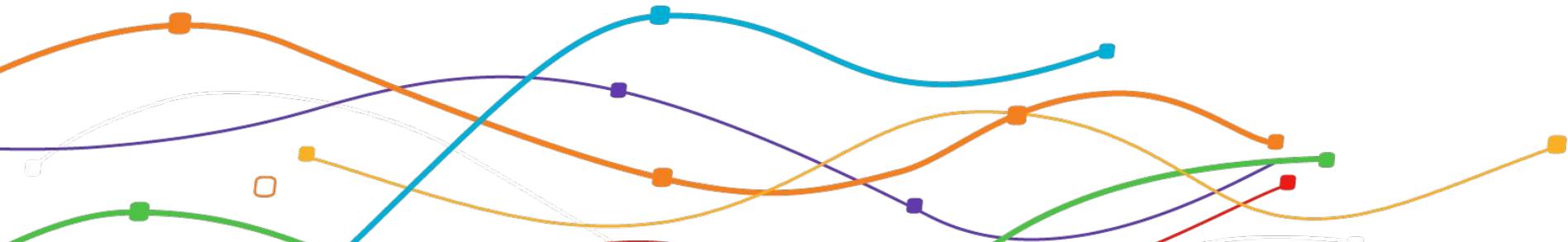
You can solve your enterprise problems while effectively sharing some of the maintenance costs. One of the fundamental advantages of open source is community involvement. Rather than writing an application and having to sustain it yourself, you can share the cost of maintaining and sustaining applications among multiple parties.

8. THE FUTURE - OPEN SOURCE

Open source is the future. Web, mobile, and cloud solutions are increasingly built predominantly on open source infrastructure. Some data and analytic solutions are only available in open source.



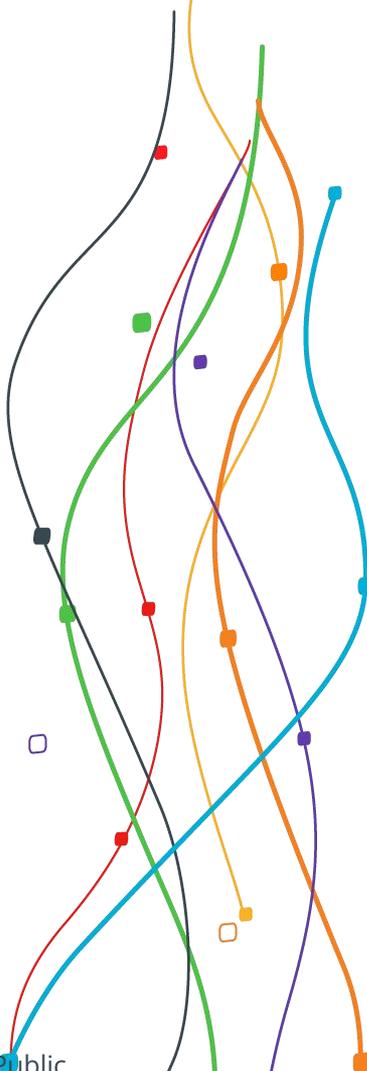
Imagine being able to connect your existing systems to a **central repository**, not needing to waste any of the energy already invested. Imagine being able to create **Open Source Smart on FHIR** solutions to complement and enhance existing solutions.





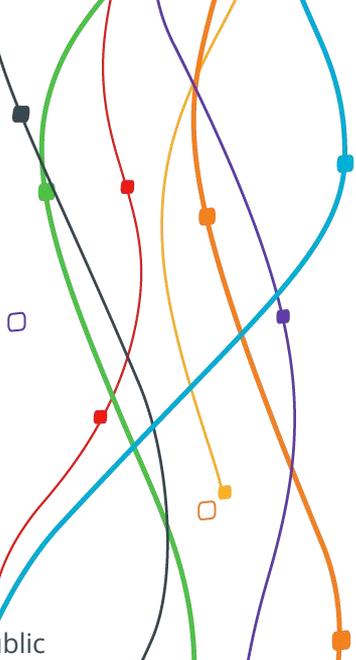
**Imagine the power to have
access to Clinical Reasoning**

What is Clinical Reasoning?

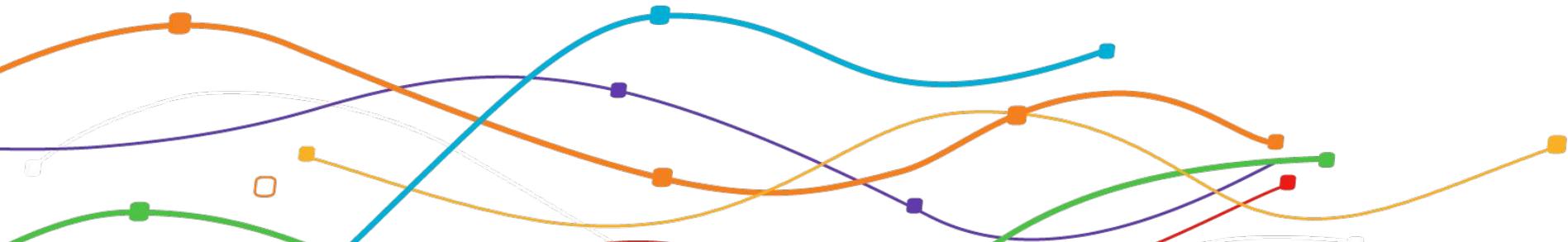
An abstract graphic on the left side of the page consists of several overlapping, wavy lines in various colors (black, green, red, orange, purple, blue) that flow from the top left towards the bottom right. Small, solid-colored squares and circles are scattered along these lines, and some lines terminate in small open squares.

Imagine having a Suicide **Early Warning System** available, using the proposed Indigenous centralized data?

Well, During our Intelligent Data Symposium 2023 this summer, Ben Cushing, from Red Hat discussed how the combined functionality of artificial intelligence (AI) and machine learning (ML) can be used to assess patient medical data to pinpoint and flag the early warning signs of suicide.



Benefits of having an interoperable Indigenous led health information system



Centralized:

Vaccine Repository

Drug Repository

ePrescribe

Mental Health Information

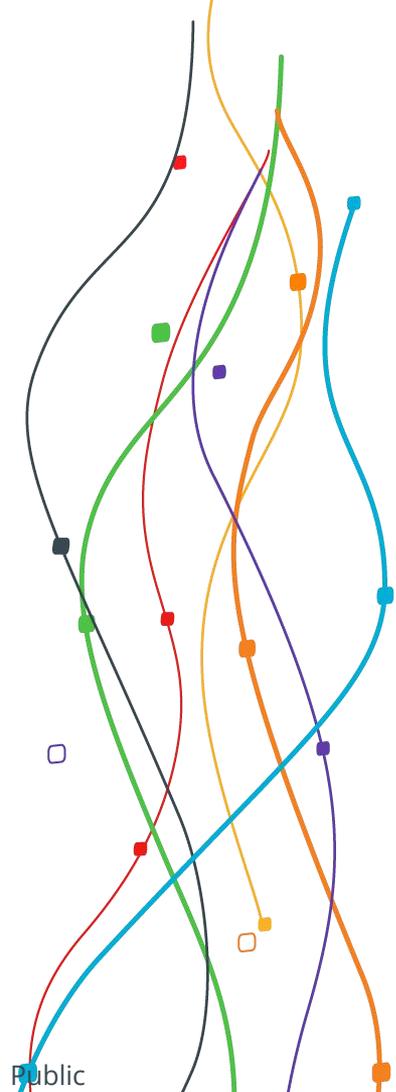
Lab Reports

Covid-tracking

Patient Access

Access to Research Data

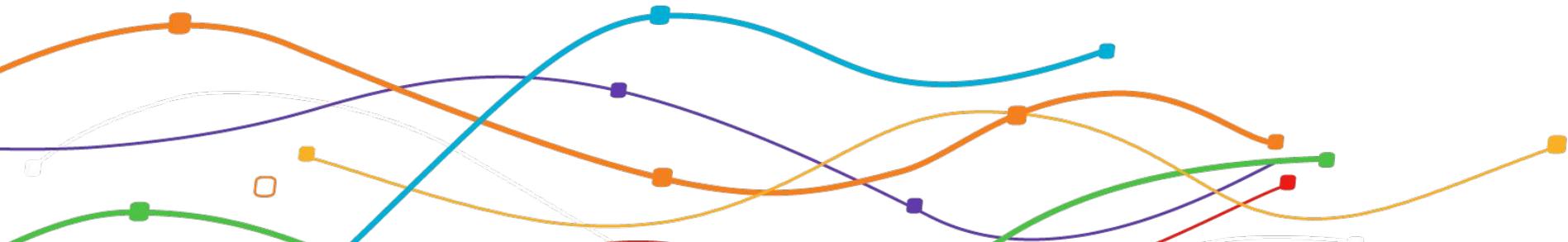
Etc.



50%



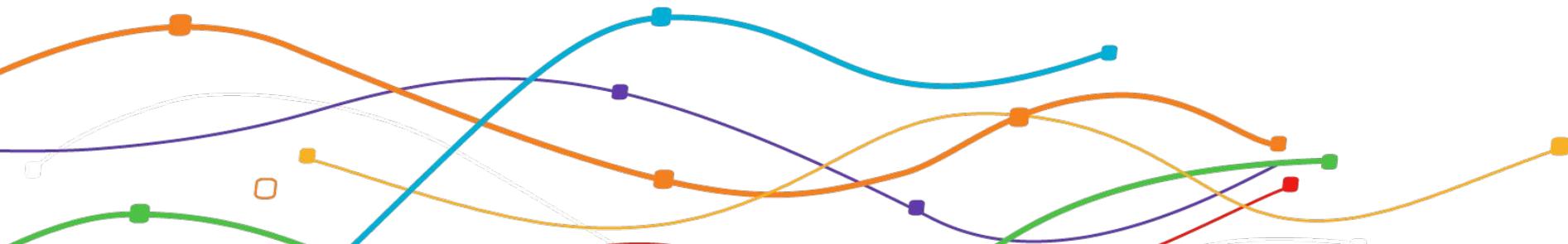
**Of the human trafficking victims in
Canada are Indigenous women
(even though they represent less than 5% of
the population)**



Trafficking of Indigenous individuals in Canada is a problem that the healthcare system has a role in addressing.

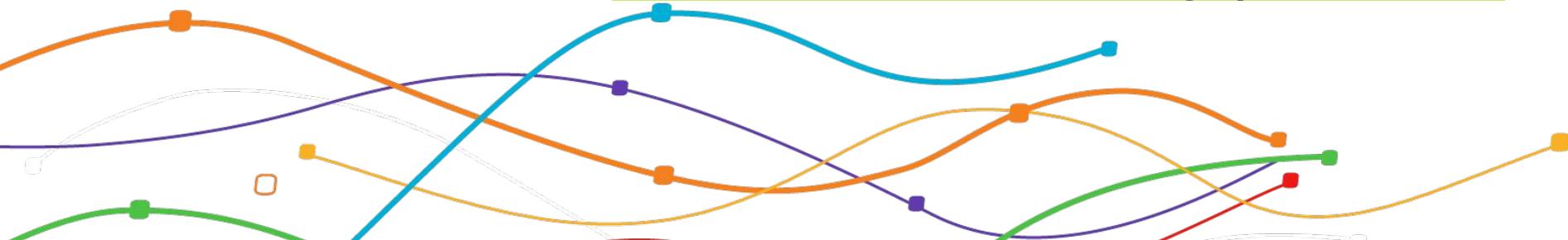
Health care is one of the few places where the lives of trafficking victims intersects with the general population

**Due to bias, lack of training, and a
burdened healthcare system 96.7%
of them are never given resources**



- **Knowledge automation - systematic screening with tools such as the Greenbaum Survey**
- **Data automation - sharing data across silos helps build a complete profile of a person and provides context and situational awareness**
- **Clinical Reasoning automation - enables better understanding of a patient's risk levels**
- **Workflow automation - for follow through on at-risk patients**

...and it all starts with choosing open standards



HUMAN TRAFFICKING

550

police reported incidents of
human trafficking in 2021
(likely under-reported)

50%

Of the human trafficking
victims in Canada are
Indigenous women
(even though they represent less than
5% of the population)

88% of trafficking
victims make
contact with the
healthcare
system

63% of them
show up in the
Emergency
Department at
some point

Due to bias, lack
of training, and a
burdened
healthcare
system 96.7% of
them are never
given resources

Even under
normal
circumstances
Indigenous
people report
dismissive and
insensitive
treatment by the
healthcare
system

Trafficking of Indigenous individuals in Canada is a problem that the healthcare system has a role in addressing

- Health care is one of the few places where the lives of trafficking victims intersects with the general population
- Healthcare systems that are able to leverage automation are better equipped to help
 - **Knowledge automation** - systematic screening with tools such as the Greenbaum Survey
 - **Data automation** - sharing data across silos helps build a complete profile of a person and provides context and situational awareness
 - **Clinical Reasoning automation** - enables better understanding of a patient's risk levels
 - **Workflow automation** - for follow through on at-risk patients

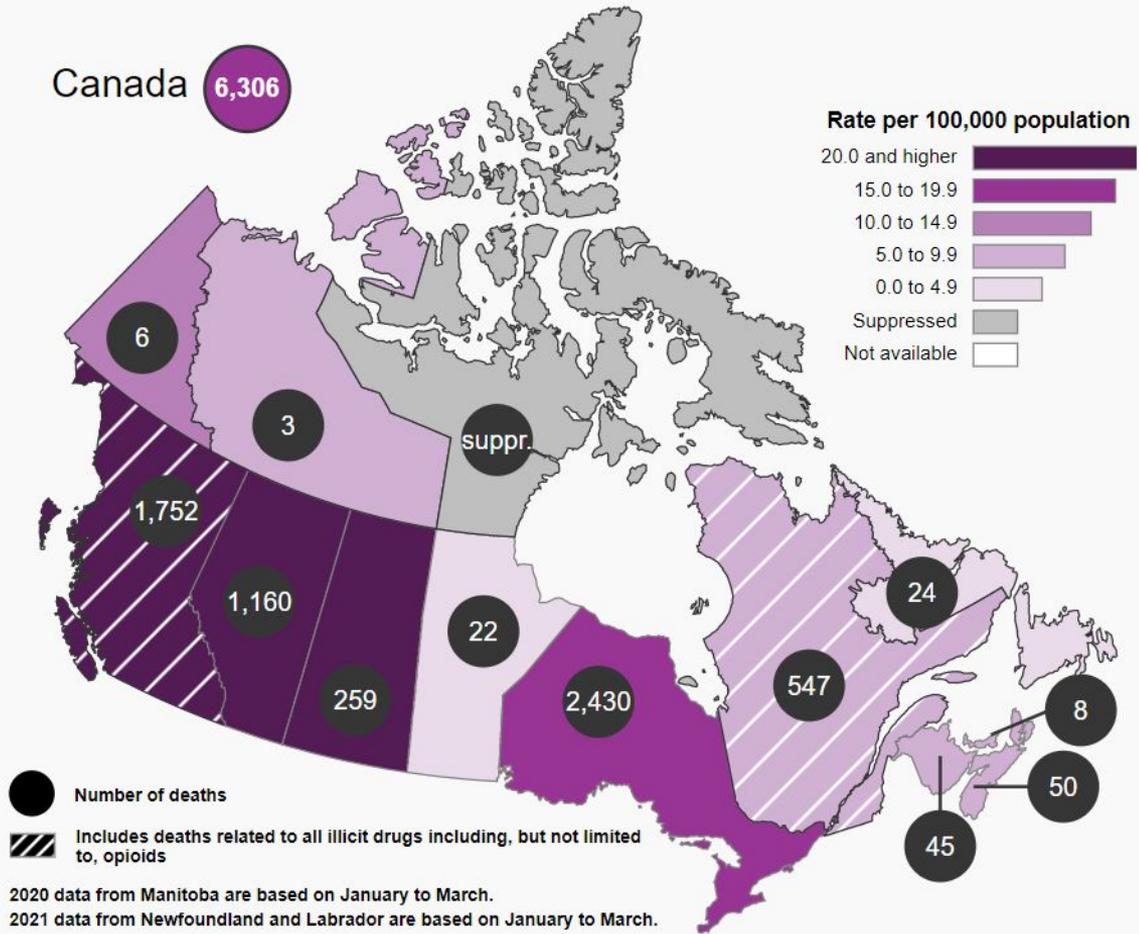
...and it all starts with choosing open standards

Opioid Crisis

The age-standardized rate of opioid poisoning hospitalizations among First Nations individuals living on reserve was **5.6 times higher** than the rate among the non-Indigenous population. The rates among Métis and Inuit were each **3.2 times higher** than the rate among the non-Indigenous population.



Canada 6,306



2020 data from Manitoba are based on January to March.
2021 data from Newfoundland and Labrador are based on January to March.

The Importance of Covid Tracking



***No one was prepared
for the last
Covid-19 crisis!***

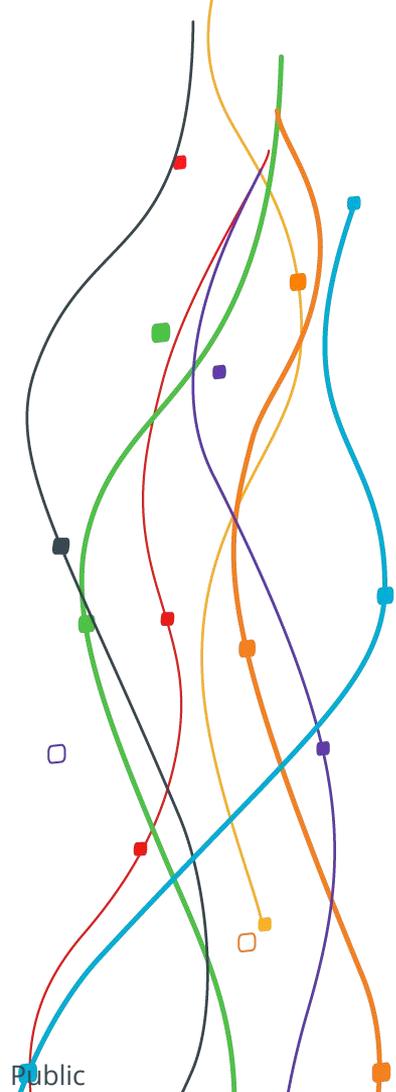
What is a Data Fabric ?

The data fabric is an emerging data architecture that enables an organization to integrate and distribute data more efficiently and decrease time to value for new initiatives.

Smile's data platform enables data exchange via multiple industry standards. More importantly, data is stored in a **native FHIR data model** for standardized future interactions to reduce risks of vendor lock-in, expensive point-to-point integrations, and enabling participation of other stakeholders and innovators.

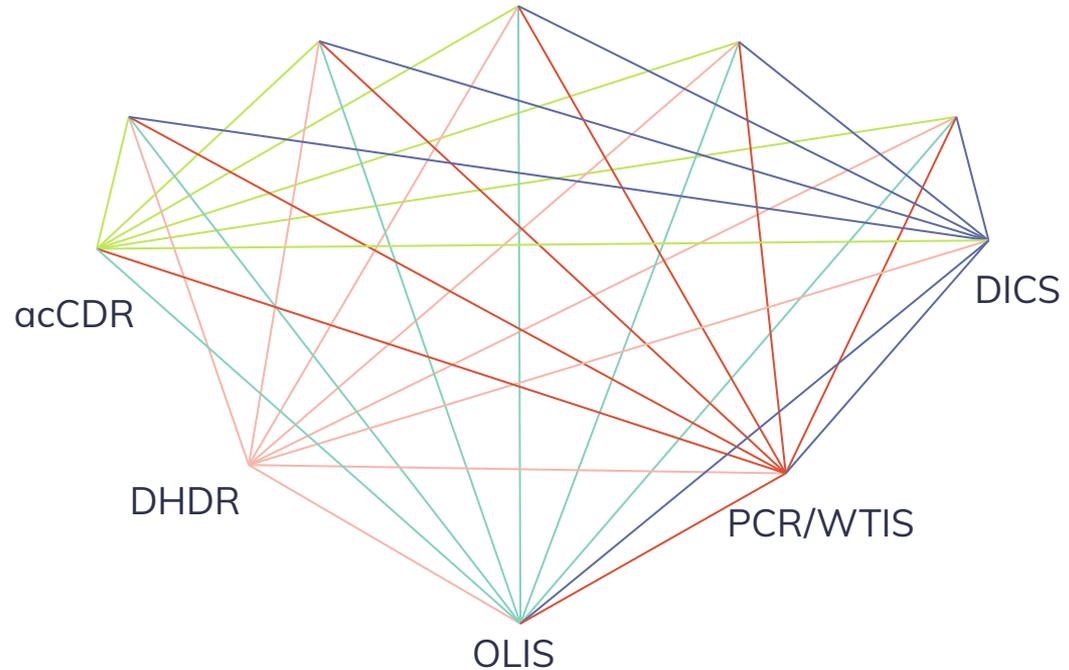
Gartner

Ultimately, a health data fabric is key to digital transformation of healthcare systems and enabling the **Internet of Health**.



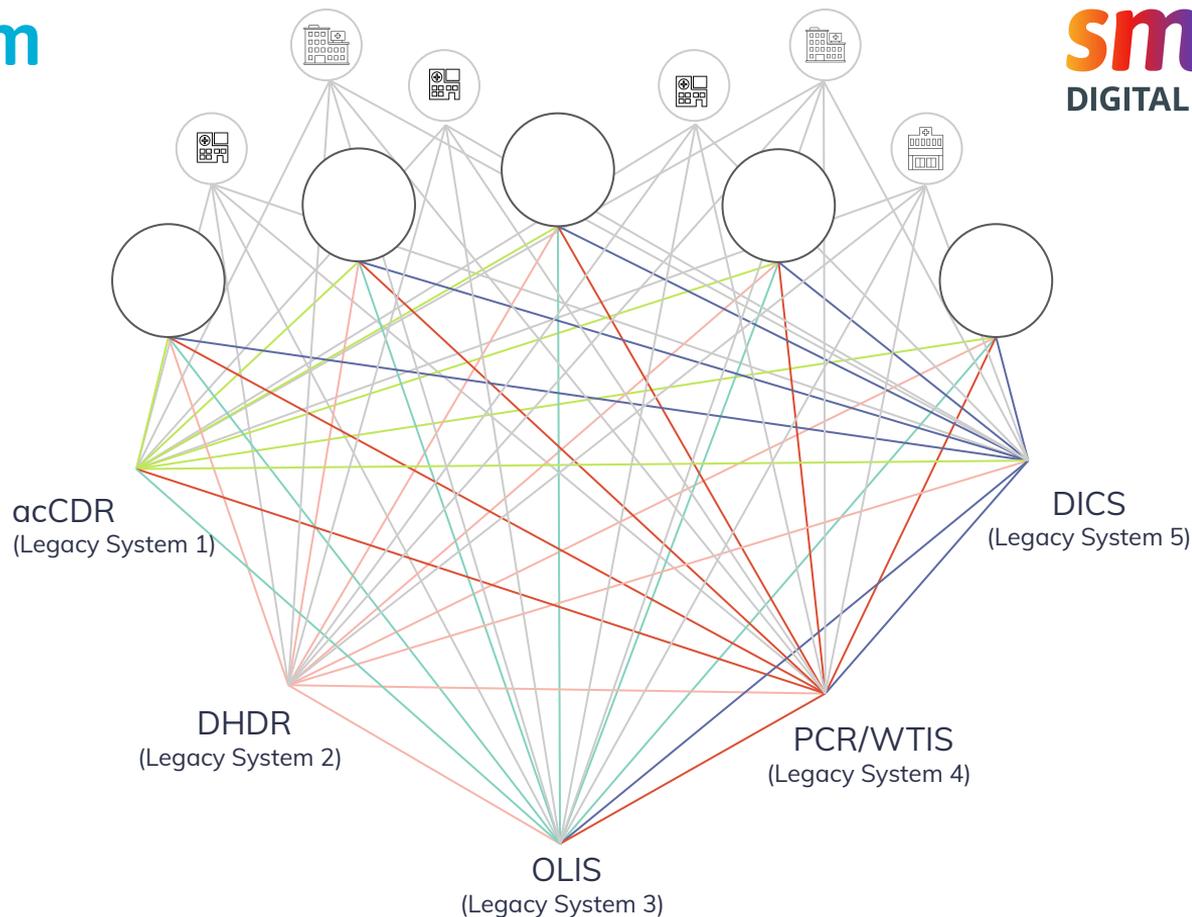
Ontario Problem

- Point to point integrations are costly
- Each point communicates with other endpoints in 1:n ratio.
- Different data formats at each endpoint.

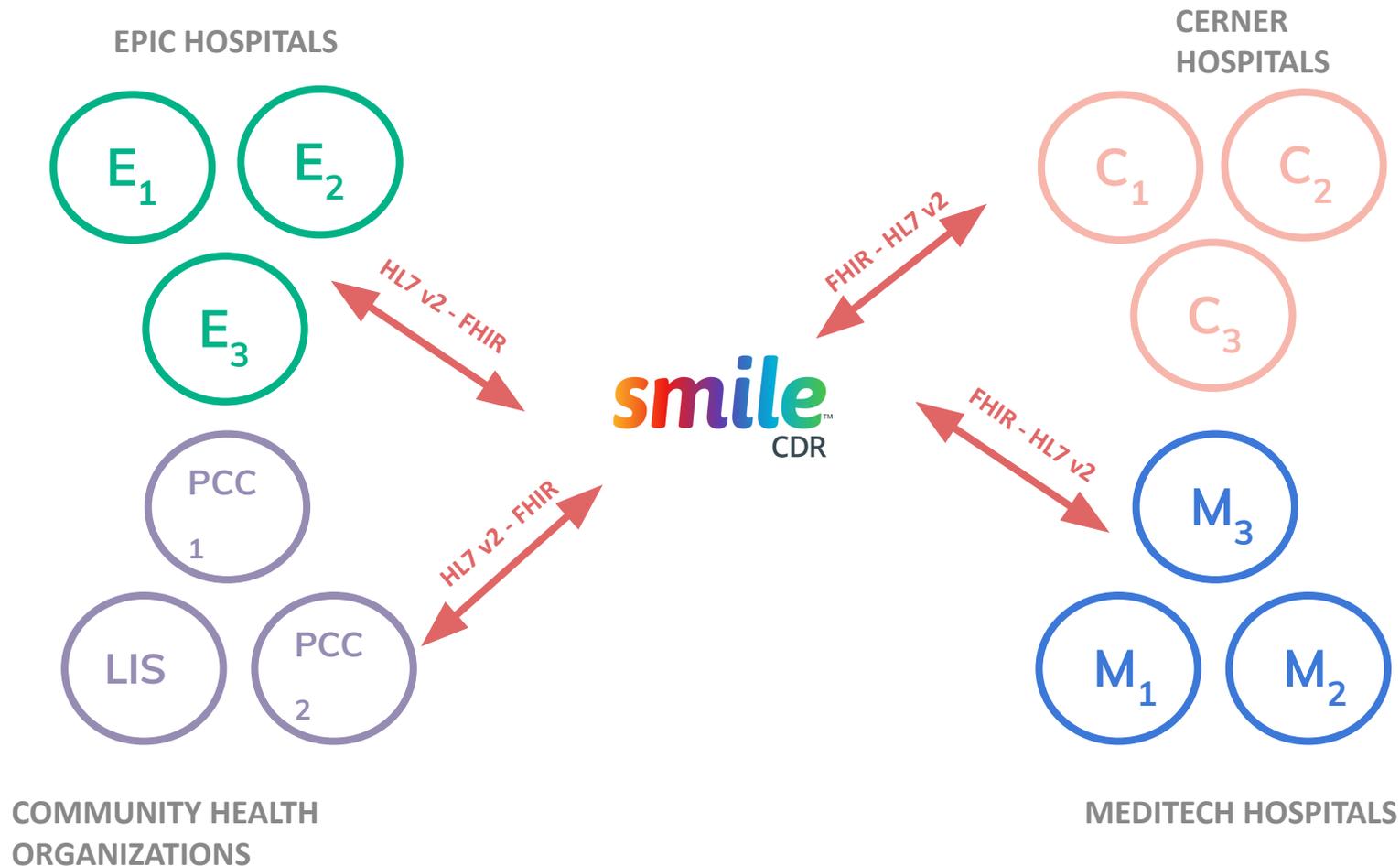


Ontario Problem Compounded

- Massive demand for data
- Each point further communicates with HIS systems
- Fragmented, redundant and de-normalized data
- High cost and non-interoperable legacy systems

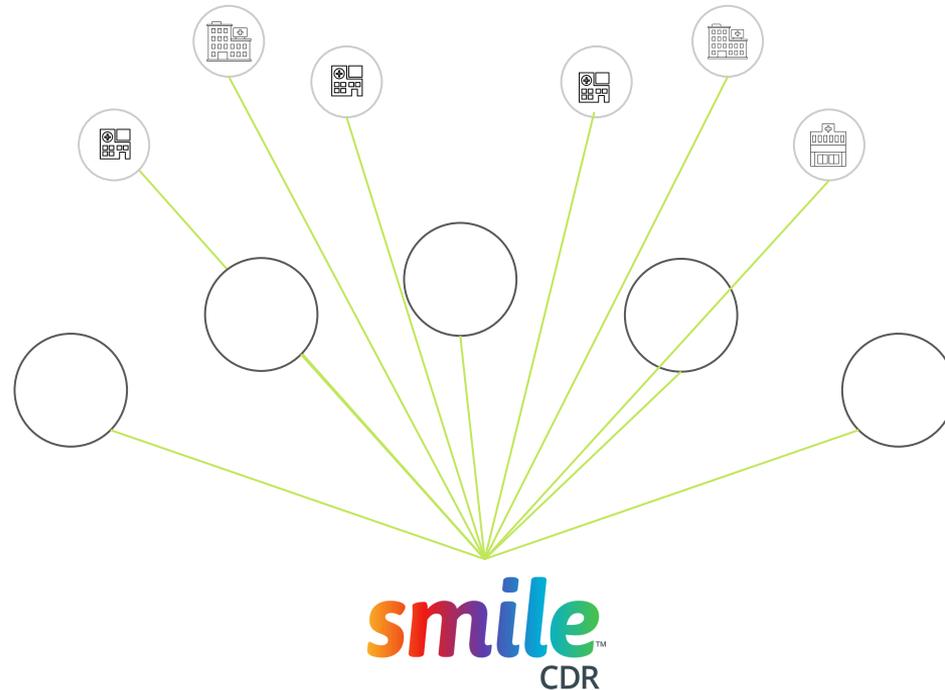


Ontario Solution - Health Data Fabric



Ontario Modernization Strategy with Smile

- Consistent, predictable and reusable Open standard
- Increase capacity to support future health data demands
- Lower adoption cost
- Highly interoperable



Unifying Healthcare via HL7 FHIR

Persistence with FHIR as a standard data model enables true interoperability and acceleration of innovation (e.g. Smart on FHIR, low code app development)

FHIR as the exchange and data model reduces unnecessary point-to-point and bespoke integrations that constantly have to be supported

FHIR as a data model significantly reduces vendor lock-in and costly migrations

FHIR-based CDR can persist EMR and other HIS data to serve as a secure and scalable external-facing data store without compromising/burdening mission critical operational data stores

Smile at a Glance



100+
Customers



70mm+
US Lives Covered on
Our Member Portal



300+
Employees

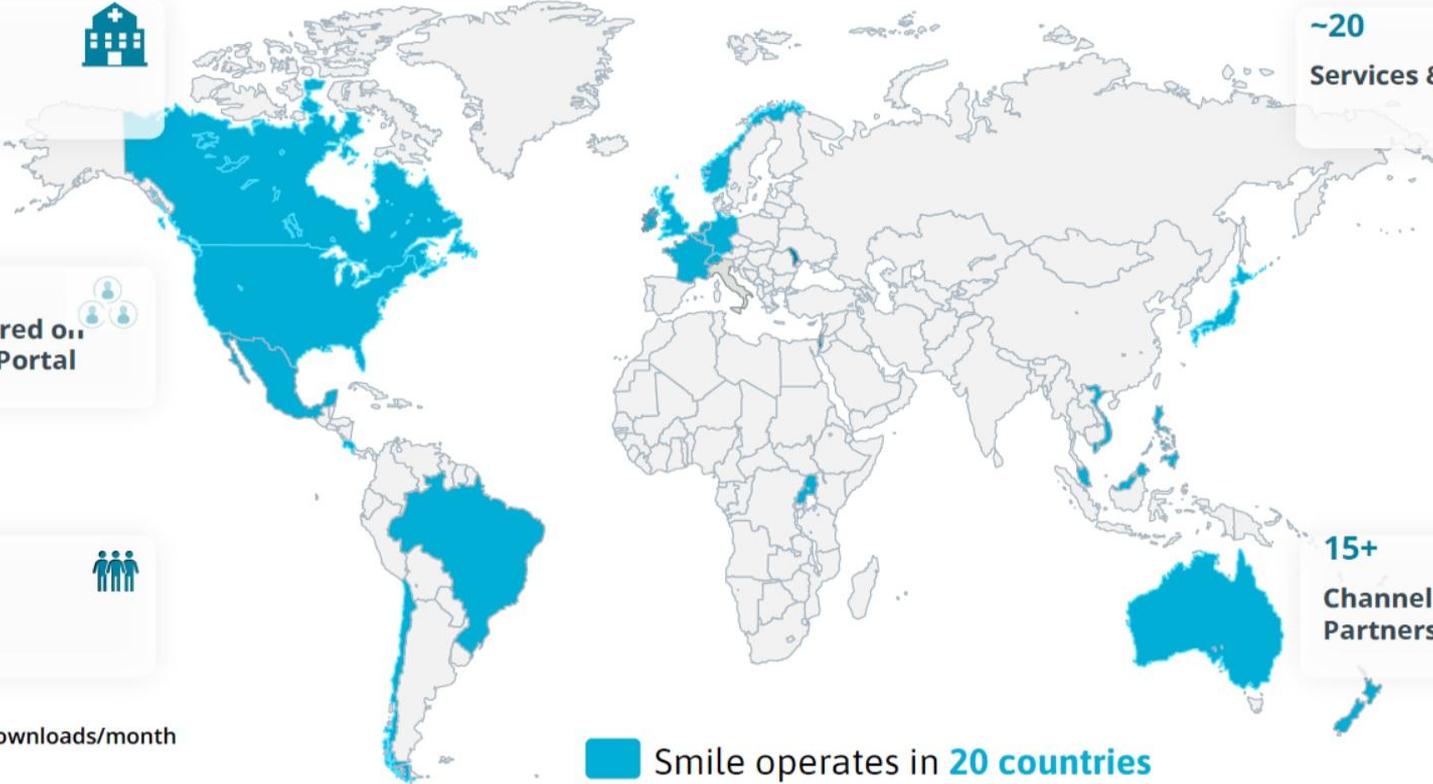


 100,000 downloads/month

~20
Services & Solutions



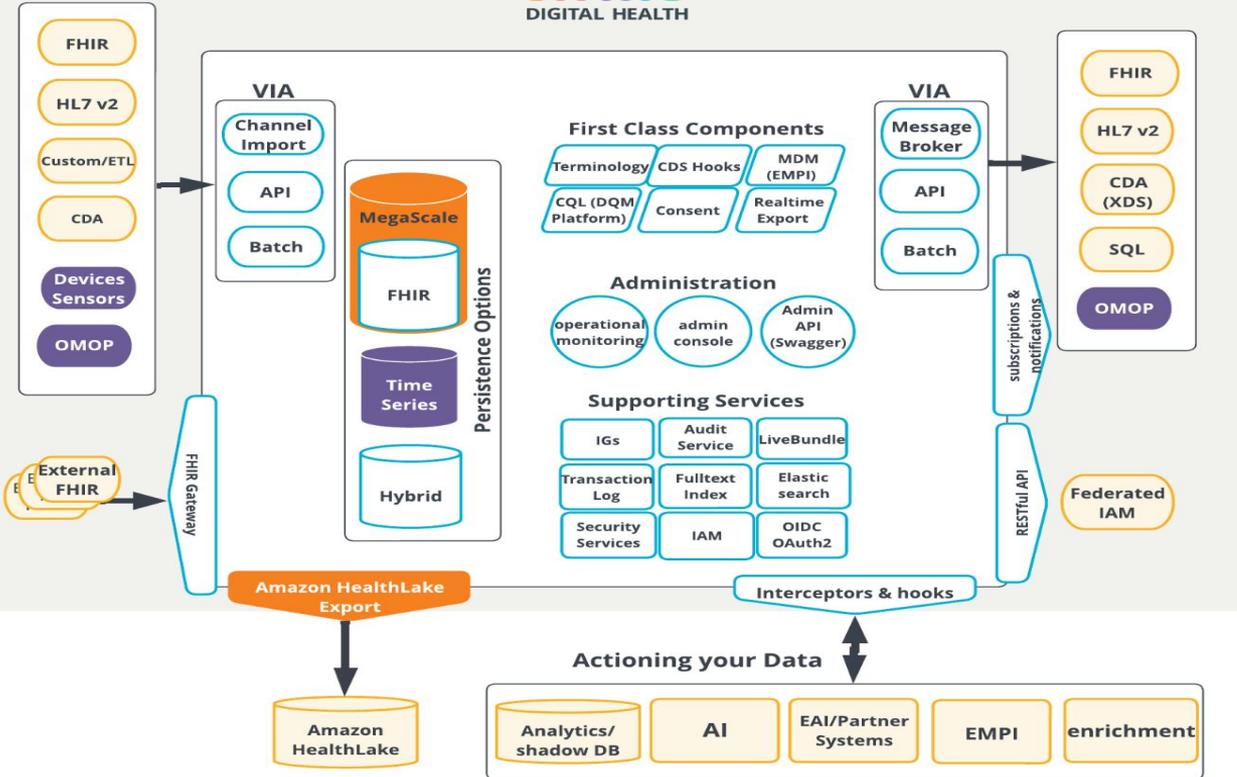
15+
Channel
Partners





Inbound Data

Outbound Data



appSphere
White label app gallery
Developer Portal
App Management Console



Premium Solutions

- Clinical Reasoning
- Forms
- P2P
- PMP
- dQMs/HEDIS
- Burden Reduction (Prior Auth)

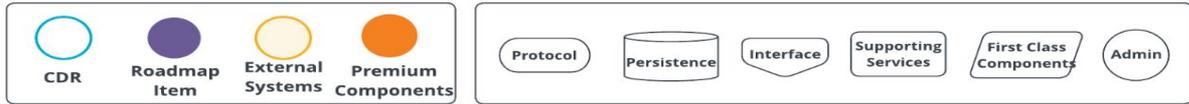
Cloud Platforms

- aws
- Azure
- GCP
- OpenShift
- OCI
- Smile Managed Services

Certifications



Legend



Next Steps

Propose a pilot project to create a Centralized Indigenous Health Information Repository run by the Indigenous community to highlight the following:

- Security
- Connectivity to existing applications
- Scalability
- Open Source - HL7 FHIR Standard
- Smart on FHIR capabilities
- Consent - Interoperability to National System
- EMPI - Electronic Master Patient Index
- Clinical Reasoning
- Forms

My Dream is that one day, Eden's health data is stored and available, perhaps will save his life.



Q&A