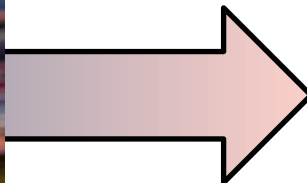# Advancing the Use of Health Analytics in Canada

Mark Nenadovic, Group Director, Emerging Technology, Canada Health Infoway

Kelly Moran, Executive Director: Information Management and Knowledge Services, Government of British Columbia

Advances in patient record digitization
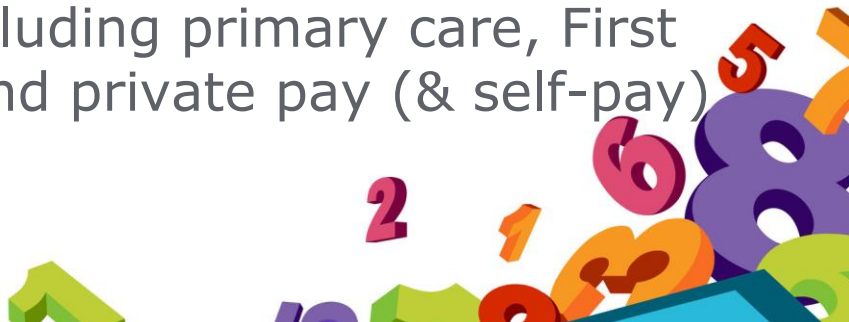
Massive amounts of stored data

Limited, meaningful information

Turning Data into Knowledge

"…the problem was one the Panel continues to see in Canadian healthcare – fragmented effort, and lack of collaboration and coordination."
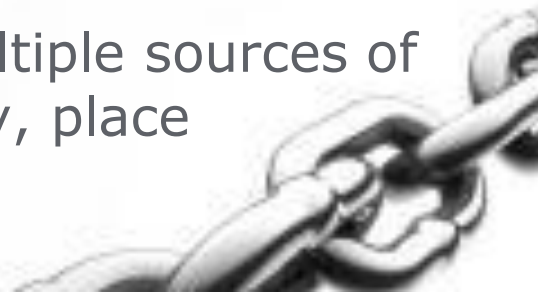
Common concerns

- **Lengthy data lags** lower the utility of performance information

- **Indicator 'chaos'** as a result of multiple organizations reporting multiples levels of outcomes

- **Data gaps** in important areas including primary care, First Nations and Inuit communities, and private pay (& self-pay) markets
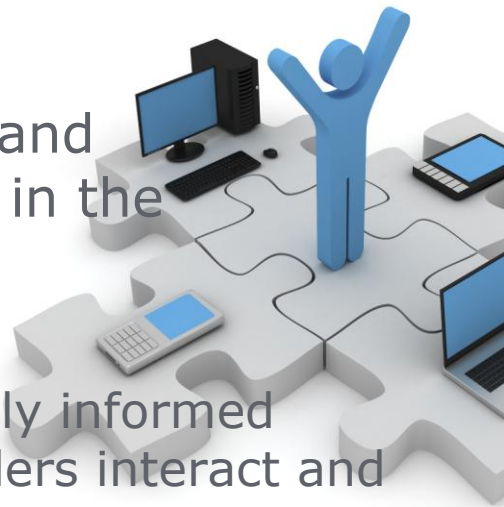
Common requirements

- The need for information systems to provide actionable intelligence in **real-time or near real-time** to inform decision-making

- **Improved access to data** and information among patients, providers, researchers, and policymakers

- **Better data linkage** – bringing together multiple sources of data that relate to the same individual, family, place or event

Data-driven innovation

- Increasing calls to open up data to innovators and entrepreneurs in order to drive transformation in the healthcare system

    – **'Democratization of healthcare'** – increasingly informed patients changing the way they and their providers interact and share information, treatment decisions …

    – **Link data sets** to recognize patterns that may have not been visible previously in order to deliver optimal and targeted health service

Data Linkage

- Creates value by producing a more complete picture of individuals from longitudinal administrative & point of care datasets

  - Enables the study of clinical conditions and population health research
  - Cost-effective relative to data collection

- Challenges
  - Linking data sets under the custody and control of different data stewards has both technical and organizational/procedural challenges

Data Sources – Partial List

- In British Columbia:
  - Medical Service Plan Fee data
  - Vital Events Data
  - Discharge Abstract (Hospital) Data
  - Client Registration (PHN) Data
  - Pharmanet Data
  - Genomics Data
  - BC Cancer Agency Data

Enabling Sharing

- Enhanced system security and controls increase organizational confidence for information sharing
  - Sharing of personally identifiable information is facilitated through:
    - Agreed upon standards for technical security against external threats
    - Appropriate effective models of access control
    - Appropriate logging and monitoring, "real time" oversight of data use

Enabling Sharing

- Organizations that share data regularly need to consider common standards and processes – sharing of data that will be de-identified is enabled by:
  - Establishing common approaches and standards for de-identification
  - Common/shared Meta data needed to ensure consistent use and interpretation of data

Enabling Sharing – Options

- A "federated" model where the conditions and permissions for sharing data are agreed to in advance
  - Shared governance, clear roles and responsibilities to achieve shared outcomes
  - Understanding of which data can be shared without further negotiation among parties

- Considerations
  - Neutral "third party" data hosting/data linkage environments to mitigate concerns over custody and control
  - "Transitory" data holding with data moved to a de-identified, publishable format and source files eliminated

Data are being generated at increasing volumes from data intensive technologies

Analytics should be regarded as a **core functionality**

Need for data governance processes within and outside the health enterprise

Data linkage can **add new value** from existing sources and **improve access** to information

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Questions ?

Connect with and follow us

E-mail: mnenadovic@infoway-inforoute.ca

Website: www.infoway-inforoute.ca

Blog: http://infowayconnects.infoway-inforoute.ca/

Twitter: @Infoway   https://twitter.com/infoway

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Thank you