

# GEVITY

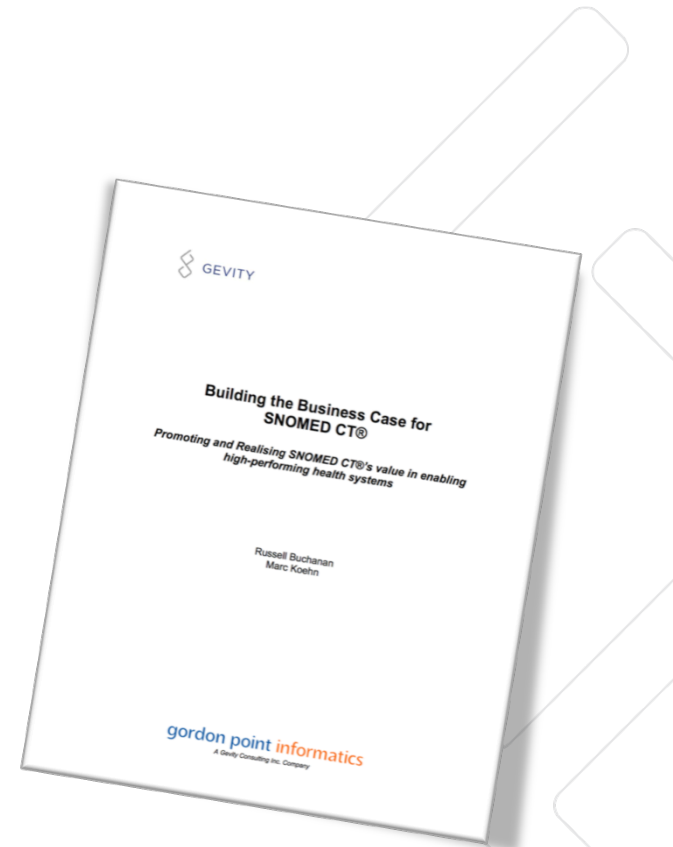
## Using SNOMED CT® to enhance the benefits of EHR Investment

Russ Buchanan

Informatics for a healthier world

# Session Objectives

- Explore some ways that SNOMED CT can help increase return from investments in EHR related systems.
- Highlight some available frameworks in the IHTSDO document *Building the Business Case for SNOMED CT*.



# About me



## Russ Buchanan

Management Consultant / Terminology Practice Lead

Project work focuses on the operational use and management of vocabularies and ontologies to support clinical data capture, processing and secondary use.

### Experience Highlights:

- Led Kaiser Permanente's Convergent Medical Terminology (CMT) team through its transformation into a shared service organization;
- Projects at Canada Health Infoway and the IHTSDO to support SNOMED CT adoption;
- Design and implementation of terminology tools to support eHealth Ontario's infrastructure programs; and
- Facilitated the definition of engagement model and operating procedures for eHealth Ontario's Architecture and Standards Program Office.

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# Backdrop: Significant investment in EHR systems



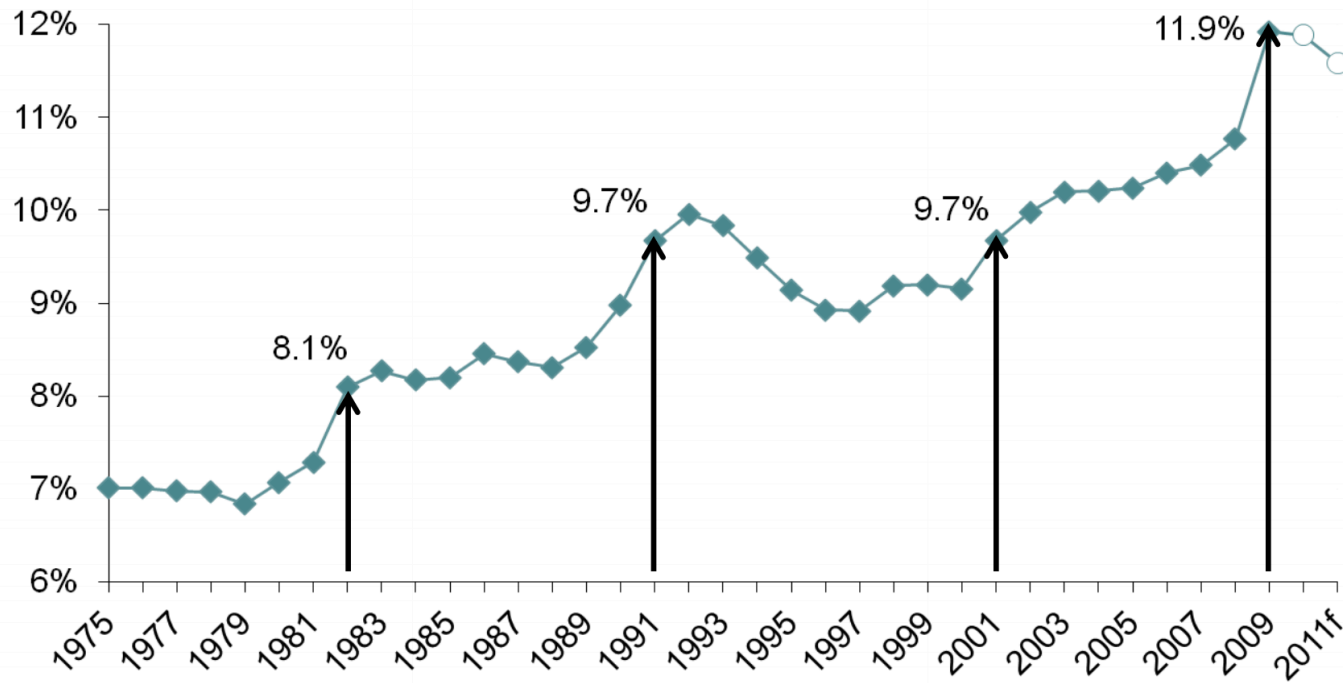
**FEBRUARY 24, 2014**

**Global Market for Electronic Health Records (EHR) Expected to Reach \$22.3 Billion by the end of 2015, According to Accenture**

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U.S. market projected to reach \$9.3 billion

# Backdrop: Rising Health Expenditures



**Note**

f = forecast.

**Sources**

National Health Expenditure Database, CIHI; The Conference Board of Canada.

Source: [Emslie, K. Against the Growing Burden of Disease: Centre for Chronic disease Prevention, Public Health Agency of Canada: Ottawa, Canada, 2012.](#)

# Backdrop: Cost Drivers



Category	Sources
Unnecessary Services	<ul style="list-style-type: none"><li>• Overuse—beyond evidence—established levels</li><li>• Discretionary use beyond benchmarks</li><li>• Unnecessary choice of higher-cost services</li></ul>
Inefficiently Delivered Services	<ul style="list-style-type: none"><li>• Mistakes—errors, preventable complications</li><li>• Care fragmentation</li><li>• Unnecessary use of higher-cost providers</li><li>• Operational inefficiencies at care delivery sites</li></ul>
Excess Administrative Costs	<ul style="list-style-type: none"><li>• Insurance paperwork costs beyond benchmarks</li><li>• Insurers' administrative inefficiencies</li><li>• Inefficiencies due to care documentation requirements</li></ul>
Prices That Are Too High	<ul style="list-style-type: none"><li>• Service prices beyond competitive benchmarks</li><li>• Product prices beyond competitive benchmarks</li></ul>
Missed Prevention Opportunities	<ul style="list-style-type: none"><li>• Primary prevention</li><li>• Secondary prevention</li><li>• Tertiary prevention</li></ul>
Fraud	<ul style="list-style-type: none"><li>• All sources—payers, clinicians, patients</li></ul>

Source: [Best care at lower cost : the path to continuously learning health care in America / Committee on the Learning Health Care System in America. The Institute of Medicine : Mark Smith ... \[et al.\], editors.](#)

# Backdrop: Inefficient Knowledge Translation



**FIGURE S-2** Schematic of the health care system today.

Source: [Best care at lower cost : the path to continuously learning health care in America / Committee on the Learning Health Care System in America. The Institute of Medicine : Mark Smith ... \[et al.\] editors.](#)

# EHR + SNOMED CT



“A system of documentation that enables other things.” - Andy Wiesenthal



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# Value of Health Information



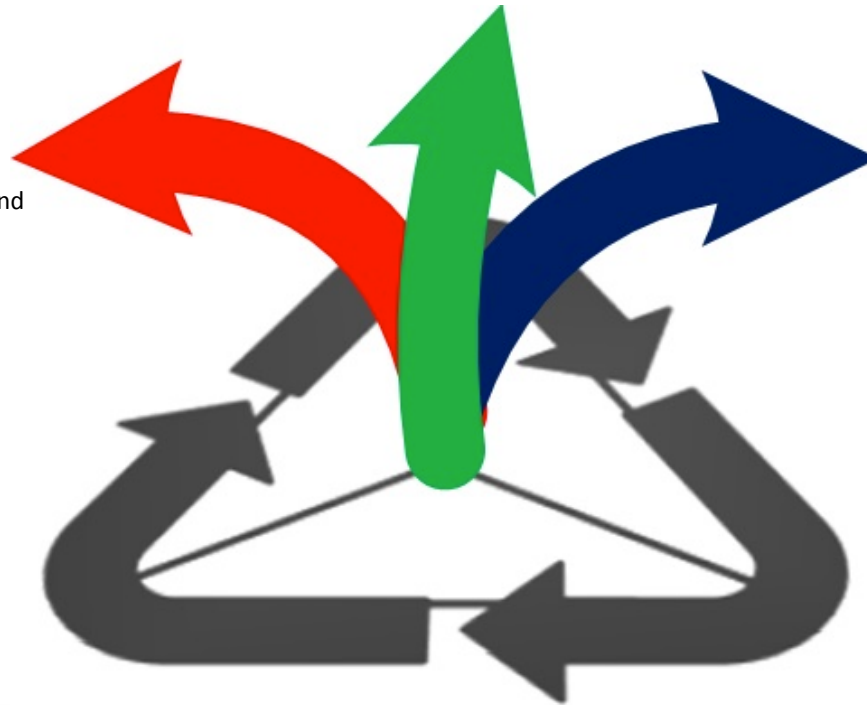
## Healthy People

### Quality Health Care

Responds to changes in technology and incentives.  
Better outcomes.  
Better return on investment.

### Effective Government

Healthy and productive population.  
Successful, transparent programs.  
Effective use of tax dollars.



### (Re) Use

- Patient Information across encounters and care settings
- Medical knowledge resources throughout the health system

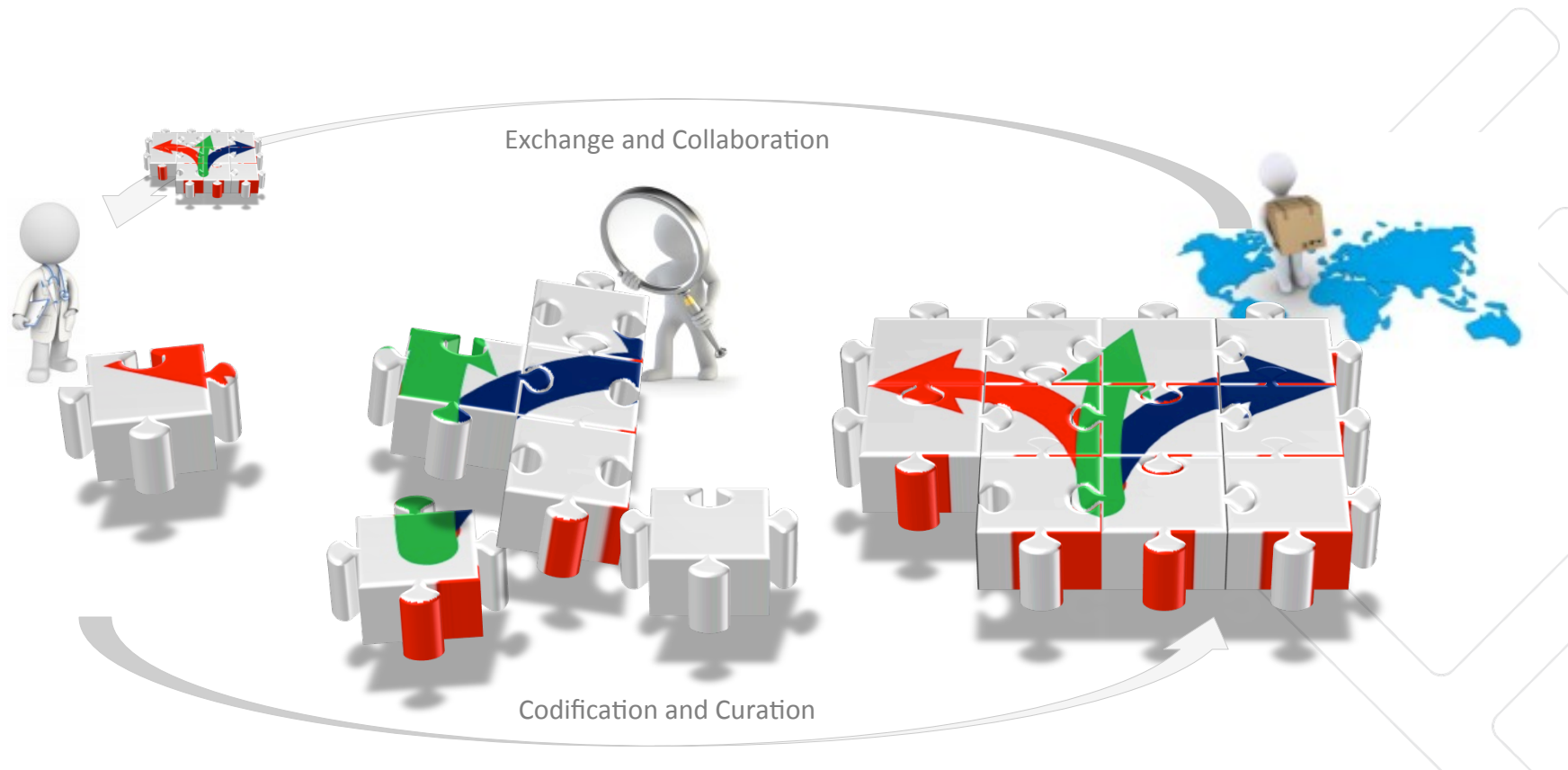
### Reduce

- Effort for providers to stay abreast of medical best practice
- Medical errors
- Unnecessary and redundant care
- Rate of advancement of chronic conditions

### Recycle

- Capture and disseminate best practice throughout the system
- Monitor and fine tune interventions

# SNOMED CT® Enabled C-KM



## Collection and Reuse (Clinical Records)

A *SNOMED CT* enabled application uses *SNOMED CT expressions* to capture clinical information and to present available clinical knowledge to providers at the point of care.

## Interpretation (Aggregation and Analysis)

*SNOMED CT* enables effective retrieval, aggregation and analysis of clinical information.

## Exchange (Knowledge Representation)

*SNOMED CT* expressions are used to tag and index clinical knowledge for distribution to clinical records systems, users and curators.

## Clinical Knowledge Management

### Collection and Reuse

KM Role : User (U)

- Decisions support systems use relationships within clinical information systems to provide Users with available information as it is relevant to their work.

KM Role : Producer (P)

- Healthcare Providers capture information about patient conditions, medical interventions and outcomes in Clinical Records Systems as they care for their patients.

### Interpretation

KM Role: Curator (C)

- Healthcare Providers, Researchers and other Clinical Knowledge Curators collect information from within Clinical Records and other Knowledge Resources to understand health issues and possible interventions.

### Share

KM Role: Distributor (D)

- Medical Journals, Clinical Content vendors and other Knowledge Distributors collect medical knowledge resources for distribution to users.

## Key SNOMED CT® Components

### SNOMED CT® Concepts

- *codes (& expressions)* capture information within patient records. Underlying definitional relationships may be used to develop triggers to provide reminders or information.

### SNOMED CT® Interface Terminology

- *preferred terms and synonyms* allow health care providers to use familiar language to capture coded, structured statements in a patient health record.
- *reference sets* may: constrain data entry to terms and/or concepts appropriate within context of use; and/or operationalize decision support rules.

### SNOMED CT® Reference Terminology

- Definitional *relationships* within SNOMED CT enable logic based computer assisted retrieval, aggregation and analysis of clinical information within patient charts, or tagged knowledge resources.
- Relationships can be inferred as concepts are added or changed.

### SNOMED CT® Concepts

- *codes (& expressions)* may used to tag knowledge resources for distribution to Users or Curators.
- Definitional relationships enable computer assisted maintenance of existing knowledge archives or decision support systems.



# Example



# Potential Benefit Streams



## Administrative & Management Cost Savings

Admin. Cost Reduction	<ul style="list-style-type: none"> <li>Reduction in medical records administration / health information management (HIM) costs as standardized SNOMED CT to ICD maps and software help automate coding processes.</li> </ul>
System Management Cost Avoidance and/or Reduction	<ul style="list-style-type: none"> <li>Reduction in costs to acquire or to develop and maintain local terminology products (e.g. value sets used in messaging, selection lists, etc.)</li> </ul>
	<ul style="list-style-type: none"> <li>Reduction in costs to acquire or to develop and maintain clinical criteria used to identify patient cohorts within clinical decision support and performance monitoring (clinical and business intelligence) systems.</li> </ul>
	<ul style="list-style-type: none"> <li>Reduction in costs to acquire or to develop and maintain clinical decision support tools and other knowledge products.</li> </ul>

## Care and Outcome Improvements

Efficient Care Delivery	<ul style="list-style-type: none"> <li>Reduction in costs associated with duplicate or unnecessary investigations (e.g. laboratory tests and imaging studies)</li> </ul>
	<ul style="list-style-type: none"> <li>Reduction in costs associated with errors (e.g. reduced liability and reduced lengths of stay)</li> </ul>
	<ul style="list-style-type: none"> <li>Reduction in costs due to more optimized use of medications (e.g. appropriate, cost effective use of drug therapies) and other technologies (e.g. appropriate, cost effective use of laboratory tests and imaging studies).</li> </ul>
Improved Patient Outcomes	<ul style="list-style-type: none"> <li>Reduction in costs due to better disease management, better patient outcomes and lower health system utilization.</li> </ul>
Improved Societal Outcomes	<ul style="list-style-type: none"> <li>Improved economic productivity from better population-wide health ("Heathy Happy Productive Communities").</li> </ul>

Source: [Building the Business Case for SNOMED CT®](#)

# Thank you!

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