

Better Information for Better Health

Bridging the Disconnect

BCHIMPS

September 29, 2017, Vancouver, BC

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Objectives

1. Expose digital health record dysphoria.
2. Characterize Clinical Information System (CIS) value-case for clinicians.
3. Share strategies for maximizing benefits while managing harms.

Electronic Health Record (EHR)

Client-centred, longitudinal collection of personal health data supporting multiple providers across the continuum of care with appropriate information securely delivered to authorized individuals...
[patient-centric]



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Electronic Medical Record (EMR)

Record of clinical services and related data maintained by a caregiver in an electronic system for reference and updating by the caregiver.

[provider-centric]



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[provider-centric]



Clinical Information System (CIS)

... additionally, comprehensive integration of information supporting the delivery of interventions, services and programs to all patients & populations.
[system-wide]



Outline

Better information for better health

- Promise
- Perils

Bridging the disconnect

- Priorities
- Pathways

<http://evidence.ahs-cis.ca>

Vision: Better Health supported by Better Information

A Provincial **Clinical Information System** for all Albertans

Connecting information
that exists in more than
1,300 different
clinical information systems.

Consolidating
that data to create a
single, comprehensive,
health record and
care plan for every
Albertan.

CIS will improve
patient outcomes
safety
quality of care



HEALTH CARE

The Capital Plan invests \$3.5 billion to continue to build the health infrastructure Albertans need. This includes \$1.2 billion to continue work on the Calgary Cancer Centre to meet the rising need for cancer care and \$500 million for future priority investments in health facilities across the province. There is \$400 million for a new clinical information system which will better integrate health care information systems throughout the province and support health care workers in making more informed decisions in delivering care for Albertans. The plan also includes \$365 million to expand access to continuing care to provide relief for families and ease the pressure on overcrowded hospitals.

Massive
health-info
overhaul
coming
to Alberta

KEITH GEREIN

Patients tired of retelling medical

Connect Care

connect-care.ca

Mission:

To deliver best care and improve health outcomes for and with Albertans through an accessible, integrated, comprehensive and standardized clinical information system.

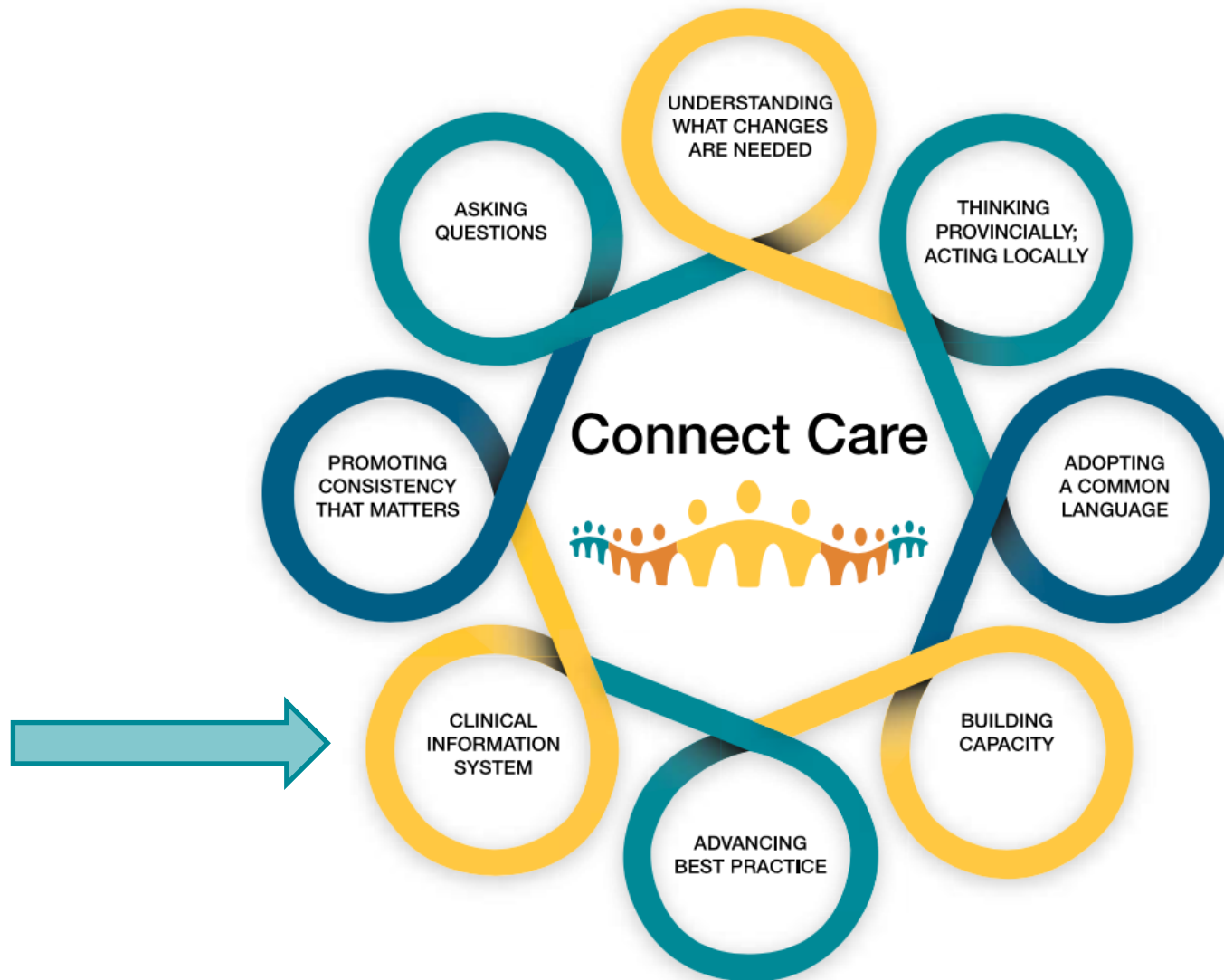


Connect Care

- ◉ Integration across generations, geography, and the health care continuum.
- ◉ Comprehensive and accessible for every Albertan
- ◉ Albertans contribute to, access, and own their data
- ◉ Standardization of clinical knowledge and practices



Connect Care >> AHS Provincial CIS



Scope

The impact of the AHS Provincial CIS is felt everywhere that AHS operates, serves and collaborates.



106 Acute
Care Facilities



36,383 Beds



139 Public
Health Centres



17 Cancer
Care Centres



70 AHS
Mental Health
Facilities



6 Urgent Care
Facilities



1,101 AHS
Primary Care
Facilities



332 AHS Continuing
Care Facilities

Functions

The CIS will improve upon the functionality we have today, plus what has been missing.

- Order management
- Results management
- Clinical assessment & documentation
- Clinical decision support
- Health information management
- Research management
- Medication management
- Personal health
- Embedded inquiry & analytics
- Population health management
- Clinical operations support
- Corporate administration
- Virtual Healthcare Services

CIS Promise - for Patients



↓ **Complexity**

↓ **Fragmentation**

↑ **Communication**

↑ **Coordination**

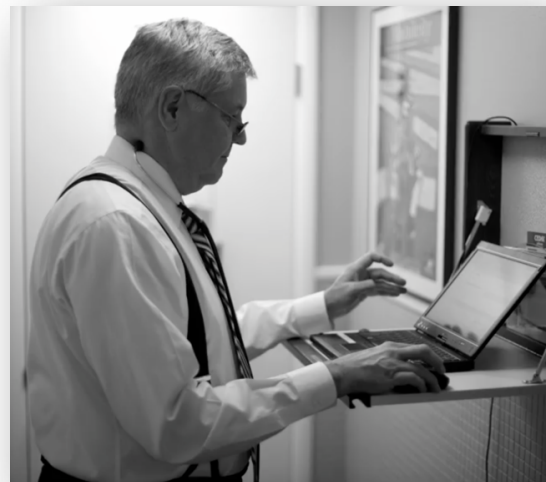
<http://ahs.ca/info/cis.aspx>

CIS Promise – for Clinicians?

Vision: Better Health supported by Better Information

Promise

- ↑ **Efficiency**
- ↑ **Effectiveness**
- ↓ **Error**
- ↓ **Effort**



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The Pew Charitable Trusts / **Research & Analysis** / Design of Electronic Health Records
Can Lead to Patient Harm

FACT SHEET

Design of Electronic Health Records Can Lead to Patient Harm

November 22, 2016 | [Health Information Technology](#)

Medical Economics > EHR

EHRs are ruining the physician-patient relationship



Bloomberg

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[Tech](#)

[Pursuits](#)

[Politics](#)

[Opinion](#)

[Businessweek](#)

Digital Health Records' Risks Emerge as Deaths Blamed on Systems

By Jordan Robertson | 2013-06-25T16:01:38Z | [Comments](#) [Email](#) [Print](#)

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 **Bloomberg** Markets Tech Pursuits Politics Opinion Businessweek

Digital Health Records' Risks Emerge as Deaths Blamed on Systems

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Nanaimo doctors say electronic health record system unsafe, should be shut down

 **CINDY E. HARNETT, VICTORIA TIMES COLONIST**
[More from Cindy E. Harnett, Victoria Times Colonist](#)

Published on: May 27, 2016 | Last Updated: May 27, 2016 1:46 PM PST



Nanaimo doctors are complaining about the usability and security of a new electronic health records system. *SHERY YATES YOUNG / VANCOUVER SUN*



Implementation of a \$174-million Vancouver Island-wide electronic health record system in Nanaimo Regional General Hospital — set to expand to Victoria by late 2017 — is a huge failure, say senior physicians.

CIS Promise – for Clinicians?

Vision: Better Health supported by Better Information

Reality

- ± Efficiency
- ± Effectiveness
- ± Error
- ↑ Effort





ZDoggMD.com



I used to chart on paper
Yeah I'm out that paper
No more chasin' med records
Writin' so illegible

Information Convenience

Information **availability**

- ↑ anywhere, anytime, anyway
- ↑ remote and mobile

Information **access**

- ↓ need for old paper charts
- ↓↓↓ time to test result availability

Information **awareness**

- ↑ awareness of past events
- ↑ awareness of medications



Replaced with copy-paste

Now a bloated ransom note

Paperless they say

But whole trees we droppin'



Bought the new software
I can't use it over there
Different systems everywhere
But gone is the interop

Electronic silo

Information Sharing

Connection

- ↑ Integration
- ↓ Interoperability
- ↓ Interfacing

Communication

- ↑ secure communications
- ↓ seamless communications



Me, I'm at that bedside
Focused like a laser beam
On the patient?
Naw, come on
I'm treatin' the computer screen

Professionalism

Boundary loss

- Ubiquitous access → contamination with social media norms

Credibility bias

- Inappropriate trust of digital information

Expectation bias

- Data framing patient instead of patient framing data

Visibility bias

- ↑ impact of digitally reportable

Tethering

- Screen attention → clinical distraction



Long live the pharmacist

Long live the RT

Whole team definitely

They the heart of everything

Teams not talkin'

Teamwork

Problems vs Issues vs Conditions vs Goals

- Multi-disciplinary tower of babel

Discipline-based charting

- Capture and tracking tools sequestered

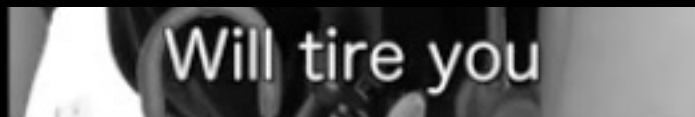
Care plan fragmentation

- Key components of an integrated plan split in silos



Caught up in the inbox

30 clicks for a Ambien



Will tire you

Go Live and it don't stop

Nurses they be burned out

Accountability

- ↓ time face-to-face data gathering
- ↓ re-validation of patients' clinical data
- ↑ persistence of error
- ↓ resolution of disagreement



Patient's face reminds us
Tech should bind us
Connect not blind us
To the reason why we care

Documentation

Gathering clinical evidence

- ↑ standardized data recording
- ↓ hypothesis testing

Clinical dataset organization

- ↓ sense of time-course of observations
- ↓ distillation of central problems and issues

Clinical reasoning

- ↓ uncertainty, competing hypotheses
- ↓ interpretation & analysis



Best practice popups

Click check boxes

8 dozen warnings

Vaseline conflicts with Doxy?!?

Turned "diluted" to "dilaudid"

Alarm fatigue

Decision-Making

Information overload

- Loss of clinical focus

Alert/Reminder fatigue

- Impact of false positives

Suspension of disbelief

- Impact of false negatives

Data-Question disconnect

- Question does not flow with result

Guidance-Evidence disconnect

- Lack of dynamic decision support



Innovation all around
But it ain't in healthcare
Internet and apps for you
But we get ancient software
Let's bite the Apple, Steve

CIS Promise – for Clinicians?

Vision: Better Health supported by Better Information

Conditions for a “New Chart”

- Preserve the narrative
- Conform technology to clinicianship
- Maximize usability
- Commitment

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What do clinicians want?

Consultations & Focus Groups

- Executive leaders
- Clinical leaders
- Front-line practitioners and trainees
- Multidisciplinary teams
- Like organization case studies

What do clinicians want?



What do clinicians want?

“What would make you excited about a CIS?”

- Convenience
- Connection
- Adaptation
- Integration
- Agency

What do clinicians want?

Convenience

- Ubiquitous presence
- Easy access
- Guessable interface
- Mobility (BYOD)
- Session persistence

What do clinicians want?

Connection

- Unified communications
 - Pager, cell, text, email, messaging
- Panel, team, trainee management
- Circle-of-care coordination
- Virtual consultation
- Lean telehealth

What do clinicians want?

Adaptation

- Workflow aware
- Discover user needs
- User-centred optimization
- Interfaces to popular apps

What do clinicians want?

Integration

- Single-sign-on
- One-stop-one-shop
- Embedded decision support
- Freedom from paper
 - Escape from fussy forms

What do clinicians want?

Agency

- Community/peer controls/supports
- Community/peer accountability
- Respect for professionalism
- Inquiry and analytics support

Digital Nirvana

- Natural human-computer interfaces
- Mobile ubiquitous access
- One common record – multiple interfaces
- User, role and task-responsive views
- Diverse documentation modes layered on same record



We need a new chart

There's something you CAN do

Stand up and make our voices heard

Let doctors be doctors

Clinician Engagement

Leveraging need to generate pull...

- Organization
- Empowerment
- Accountability

Clinician Engagement

Organization

1. Define and develop clinical communities for CIS “pull”, not “push”
 - Support, not extract, leadership
 - Embed change management
2. Multi-channel communication
3. Nurture both leadership and user groups
 - Professional Practice Informatics Councils

Clinician Engagement

Empowerment

1. Design and protect leadership roles
2. Balanced governance
3. Train and support clinicians
 - Designers
 - Builders
 - Analysts
 - Optimizers
4. Career pathway

Clinician Engagement

Accountability

1. AHS-Provider “Compacts”
 - Information Sharing Compact
 - Connect Care Compacts
2. Digital professionalism
 - CPSA roadmap
 - Provincial accountability framework
3. Meaningful use begets meaningful benefit

CIS = Clinical Improvement System

Vision: Better Health supported by Better Information

Conditions:

- **Recognition of better information**
- **Knowledge informs practice**
- **Practices improve outcomes**

CIS = Clinical Improvement System

Clinical

Informatics

Bridge clinical communities with information and communication technology initiatives.

Capacity &

Adoption

Facilitate eHealth literacy, promoting CIS adoption, meaningful use and organizational learning.

Stakeholder

Relations

Promote end-user organization, empowerment and accountability for effective CIS use.

eHealth Process

Optimization

Help transform policy, process and workflows to benefit from a CIS while avoiding harms.

Guidance & Content

Management

Translate provincially-adjudicated best practices to actionable guidance at the point of care.

eSafety & eQuality

Surveillance to enhance safety, improve quality, facilitate inquiry and reduce waste.

ahs-cmio.ca/home

CIS = Clinical Improvement System

Clinical eTransformation Strategy

- Identify unhelpful variation
- Recognize standardization needs
- Focus on CIS opportunity
- Address strategic transformation questions

CIS = Clinical Improvement System

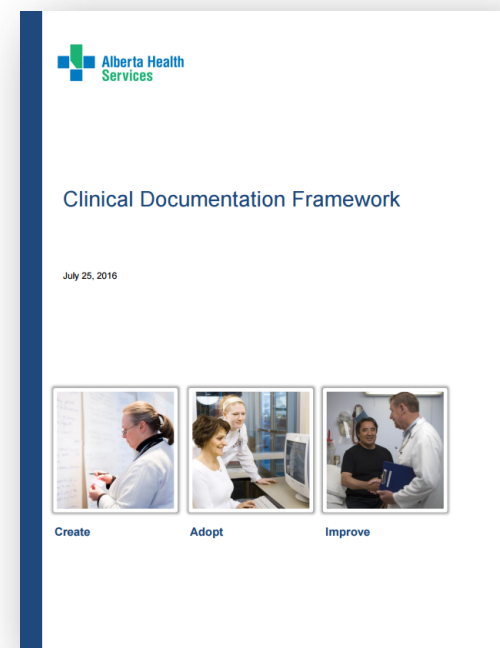
Clinical eGuidance Strategy

- Clinical Guidance **Collaboratory**
- Provincial Guidance **Viewer**
- AHS CIS Content **Repository**
- Health Evidence **Exchange**
- Embedded **Analytics**, Enterprise **Datamart**

CIS = Clinical Improvement System

Clinical eDocumentation Strategy

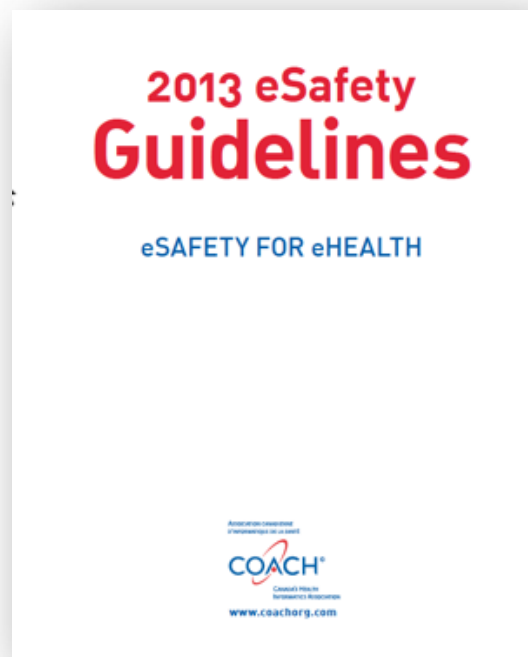
- Patient & family-centred
- Useable & accessible
- Collaborative
- Care optimized
- Shared burden



CIS = Clinical Improvement System

Clinical eSafety Strategy

- eSafety Framework
- Design checklists
- Surveillance capacity



Key Points

1. Principled push is resisted:
 - Backlash against big CIS initiatives.
 - Wariness about harms.
2. Pragmatic pull is possible:
 - Permissive infrastructure and infostructure allows new models of information capture, organization, codification, display and communication.
 - User needs can be addressed and leveraged.

Questions?

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