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# Engineering a Learning Healthcare System

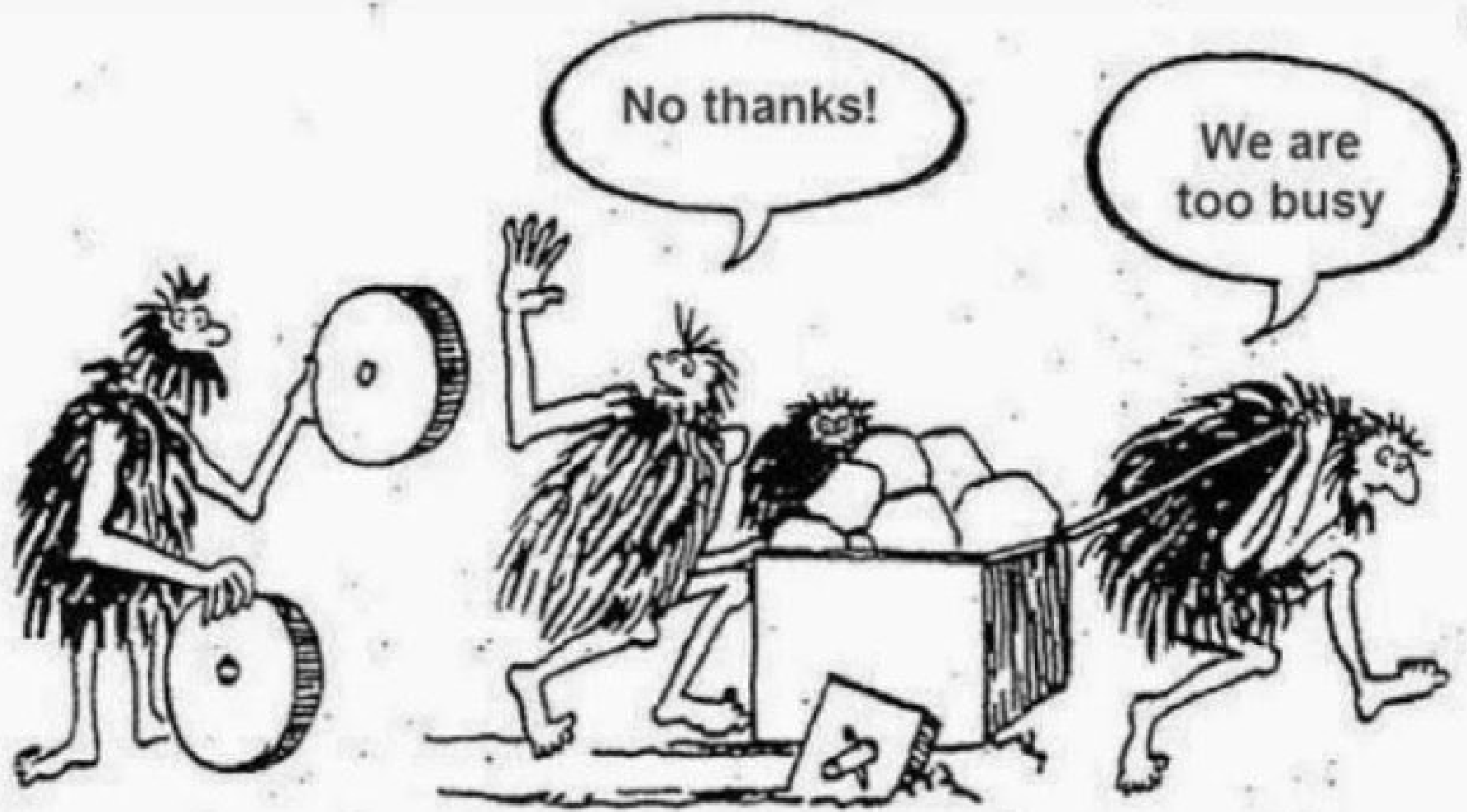
**AHS Strategy for Clinical Health Research,  
Innovation, and Analytics**



A yellow diamond-shaped sign with a black border, mounted on a green post. The sign features the text "RESTRICTIONS APPLY" in bold, black, sans-serif capital letters. The sign is set against a clear blue sky with some faint power lines visible in the upper left corner.

**RESTRICTIONS  
APPLY**

What limits us from  
integrating innovation  
and research into  
care?



Lack of Time

Busy-ness

Lack of skills

Urgent Asks

Shifting priorities



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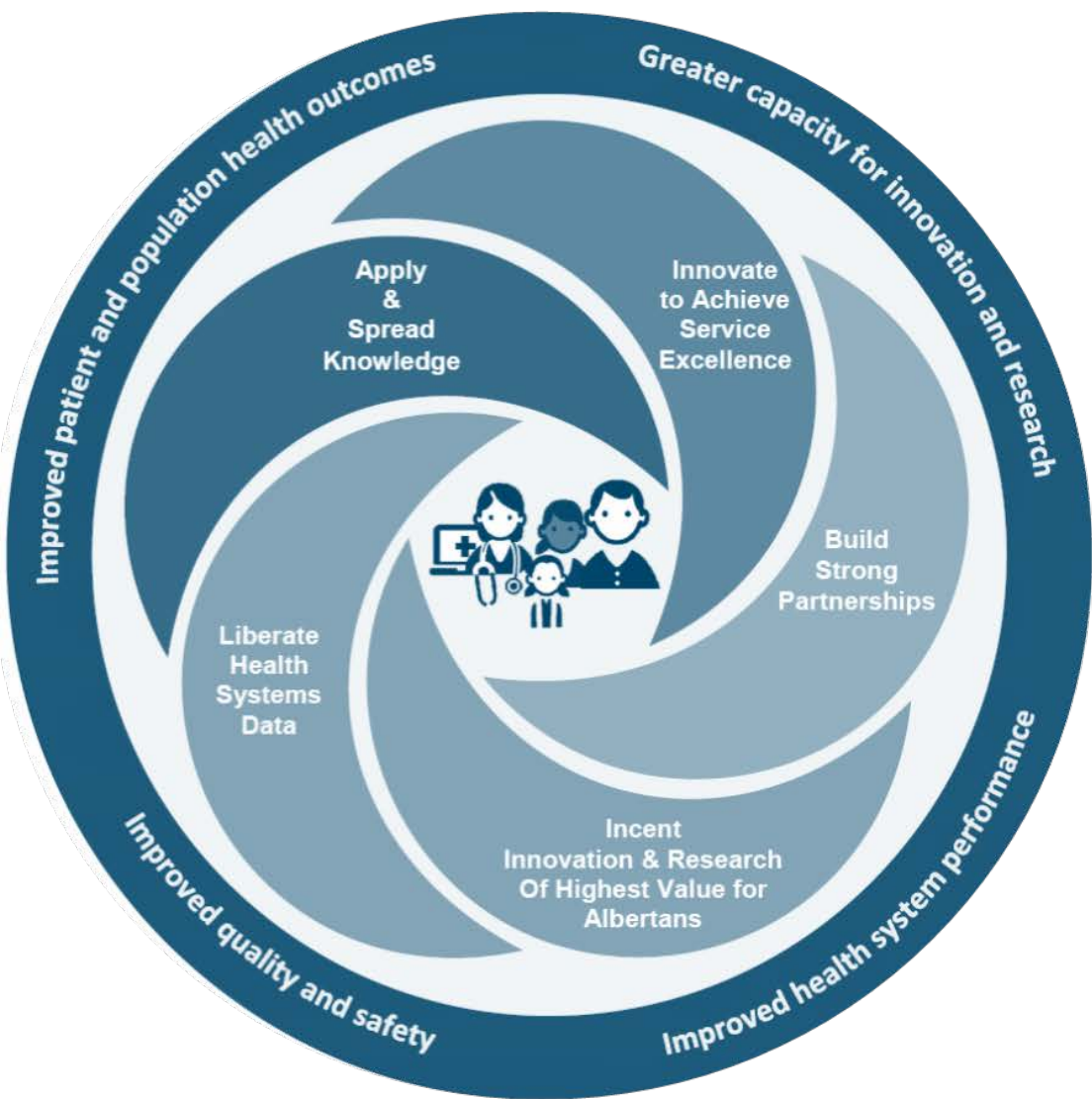
# INQUIRY IS ASKING QUESTIONS OF THE THINGS WE DO

**Innovation** means a 'new and improved way of doing valued things'.

- *An innovation can be a device, a drug, a technique, a method, a system or a service.*
- *Bringing Albertans **together** and providing the necessary tools, will help us discover **new**, **efficient**, **valued**, and **relevant** ways to deliver care.*

**Research** in AHS involves **systematic investigation** to establish facts, principles or generalizable/transferable knowledge.

- *It can include studies approved by a research ethics board, the analysis of data through analytics, systematic approaches to quality improvement and evaluation.*



Fostering a **learning culture** where patients, families, staff, physicians and volunteers can **generate, share and apply evidence** to the decisions made every day”

# 1. Build Strong Partnerships





## 2. Incent Research and Innovations of Highest Value





### 3. Liberate Health System Data

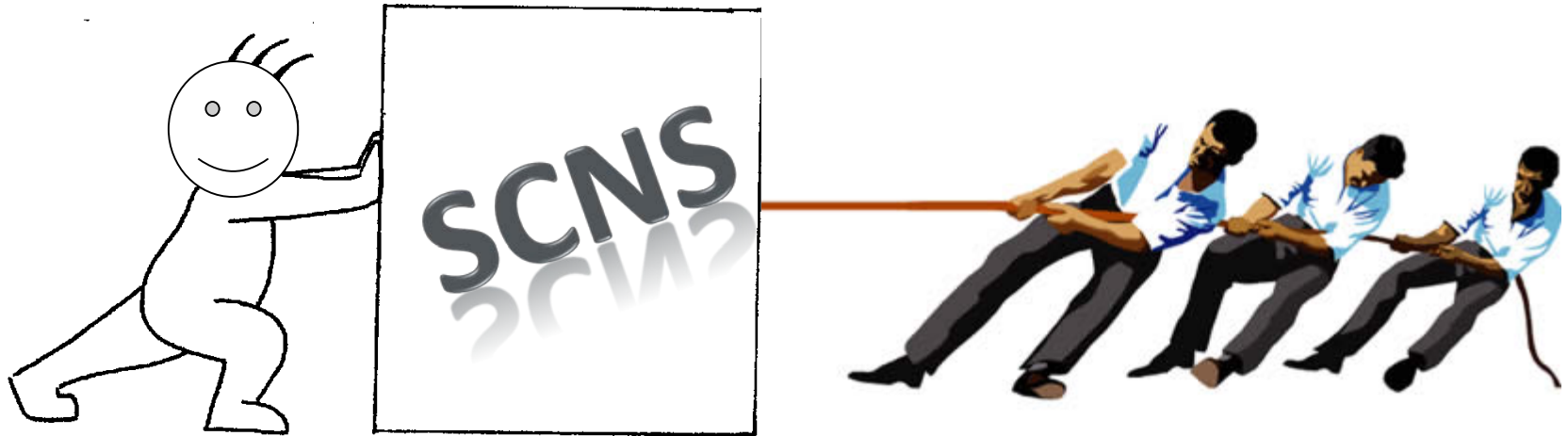


## 4. Apply and Spread Knowledge

5. Innovate to  
Achieve  
Service  
Excellence



# Partnership for Innovation & Research in the Health System Grant Program



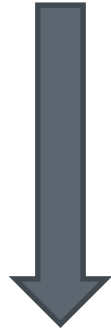
The Researcher

Users of Knowledge

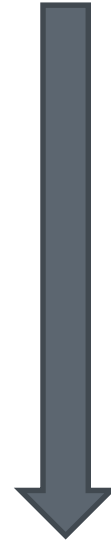
On the same team creating value & impact



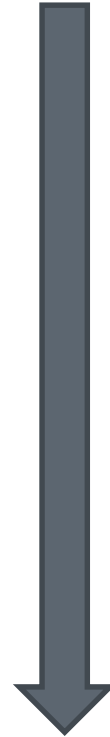
SCNs develop clinical pathways for priority areas to help coordinate and standardize care processes, improve efficiency, and achieve positive outcomes.



Strategic Clinical Networks develop significant plans (roadmaps) that will change and improve healthcare delivery.



Clinicians and researchers provide input into the provincial Clinical Information System (CIS).



Increase access and availability of health resources so that clinicians can readily acquire knowledge and apply it to patient care.

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# Research ≠ Learning

## Example Problems Identified :

- Healthcare system's research needs are not fully met by the current research enterprise
  - Designed for basic science inquiry and drug discovery
  - There is no scalable model for:
    - Clinical Effectiveness Research or research comparing known treatments
    - Biomarker validation (Personalized Medicine) for diagnostics, prognostic or therapeutic indications

Creation of a Learning Healthcare System creates locally applicable knowledge:

- Identifies its' own needs
- Uses its' own infrastructure
- Adapts available research methodology
- Directly implements research results

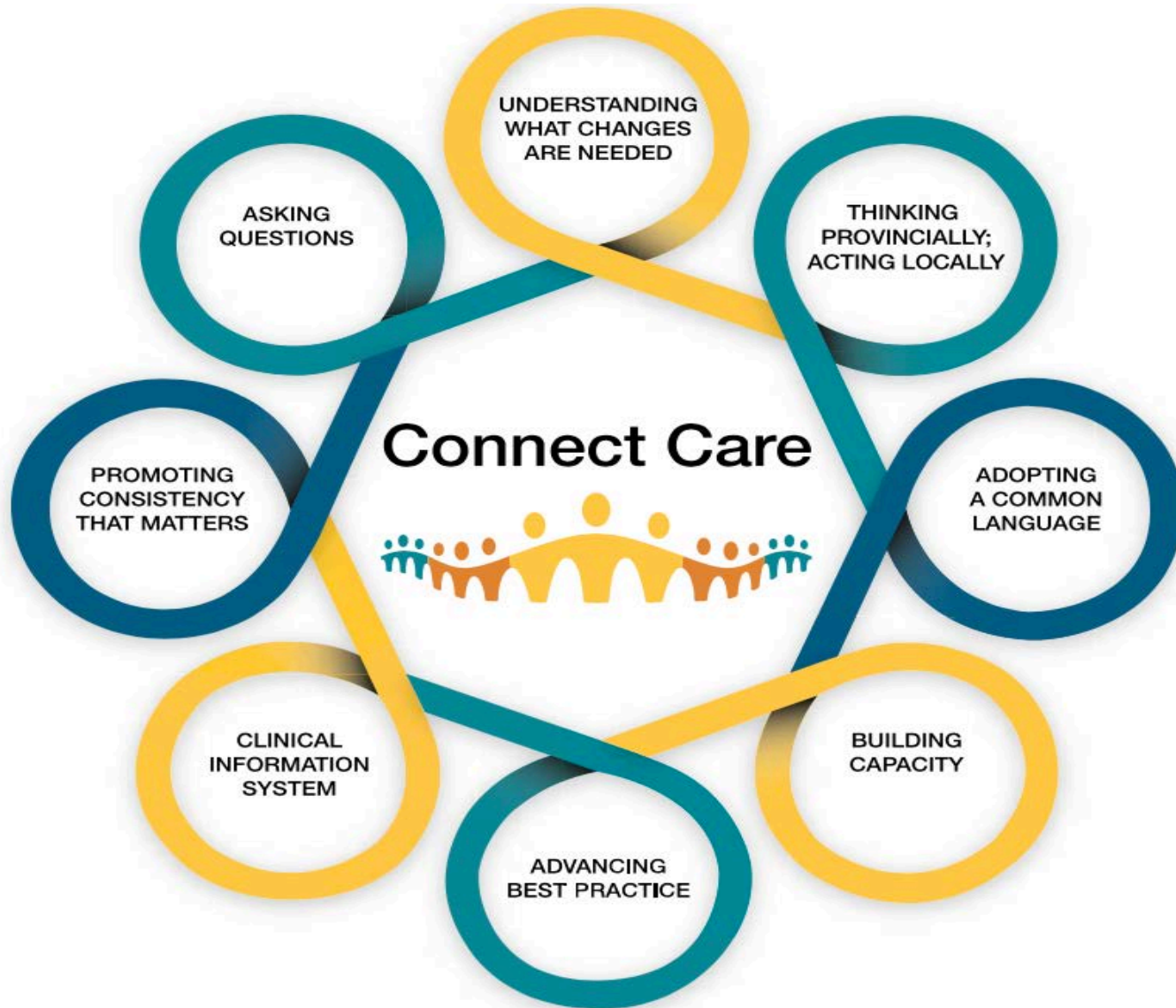
The knowledge gained is thus not generalizable (thus not 'research') but rather is 'locally selfish'.

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# Connect Care

**A framework for opportunity,  
conversation and partnership**





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# Connect Care Guiding Principles

1. Put patients & families first.
2. Move fast.
3. Integrate across the continuum.
4. Avoid unhelpful variation.
5. Adopt and adapt.



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# Connect Care Guiding Principles

- 6. Use tools for transformation.
- 7. Lead with purpose.
- 8. Partner to advantage.
- 9. Transform with intent.
- 10. Heed best experience.



# Connect Care Leadership

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## Executive Sponsors

**Dr. Francois Belanger**

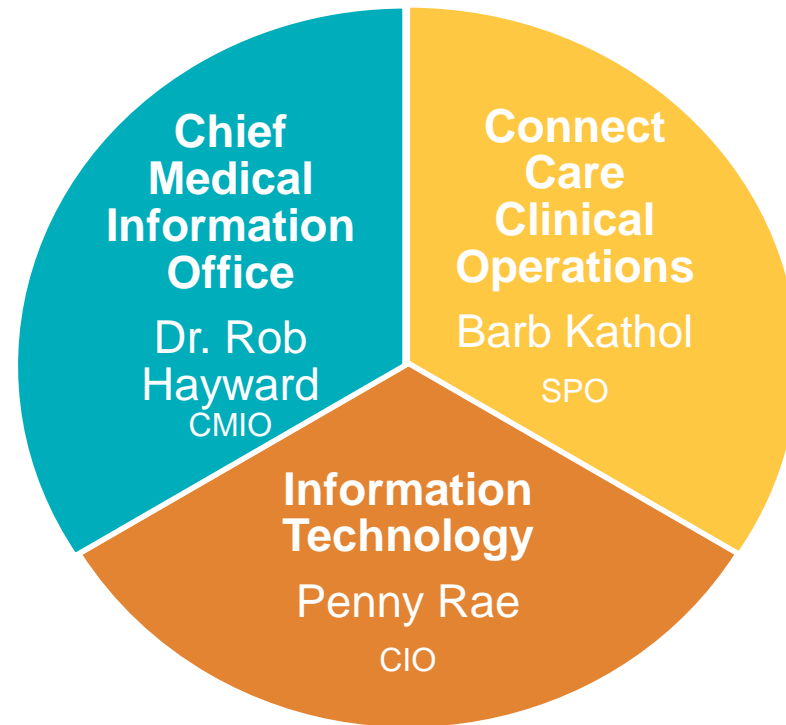
Vice President, Quality and Chief Medical Officer

**Deb Rhodes**

Vice President, Corporate Services & Chief Financial Officer

**Sean Chilton**

Vice President Collaborative Practice,  
Nursing & Health Professions



# Connect Care

## AREA COUNCILS



### GOVERNANCE STRUCTURE



- |                           |                                    |
|---------------------------|------------------------------------|
| Addiction & Mental Health | Emergency Medicine (Including EMS) |
| Anesthesiology            | Lab / Microbiology / Pathology     |
| Cancer Control            | Medicine                           |
| Cardiovascular Sciences   | Neurosciences                      |
| Critical Care             | Ophthalmology                      |
| Capacity Management       | Renal                              |
| Child Health              | Pharmacy                           |
| Continuing Care & Seniors | Population & Public Health         |
| Community Health          | Rehabilitation                     |
| Dental Health             | Surgery                            |
| Diagnostic Imaging        | Transplant Care                    |
| AHS Primary Care          | Women's Health                     |
| Finance & Case Costing    | Others as required*                |

NOTE: The co-chair of the Area Council will sit on the CC Council.  
\*These are example Area Councils and are not consistent in size. It is anticipated they will evolve over the duration of design



### AREA COUNCILS WILL

- Identify clinical priorities for standards and consistent practice across the province.
- Act as ambassadors and change agents to support implementation in local geographies, programs and sites.
- Provide an escalation and decision point for design issues when SMEs cannot reach consensus.
- Offer long term support for the ongoing optimization and use of the CIS in clinical in areas.
- Address professional and practice issues specific to provincial clinical service delivery and support areas.

### LEVERAGING KNOWLEDGE FROM

- Multidisciplinary, provincial representation co-chaired by department heads and Dyad (ED or SOO level).
- Physician and Clinical Operations leaders from programs, departments and specialty areas.
- SCNs, HPSP and provincial programs.
- Wholly owned subsidiaries (as applicable).
- IT and Connect Care program support.
- Patient representatives (x2).

### UNDERSTANDING

- Areas may be managed for synergies and to conserve human resources (e.g. continuing care, seniors and primary care).
- Areas may be broken out to sub-areas or new separate areas to address emerging work with different CIS workflows (ie., medicine).
- Existing committees, where they exist, will be leveraged and, if required, will be supplemented with additional membership.
- Areas may be retired if key work can be managed through other committees.
- Areas may be added if we discover we've missed something critical to success.

# Connect Care Governance Structure: June 2018

## Subcommittees

### Connect Care

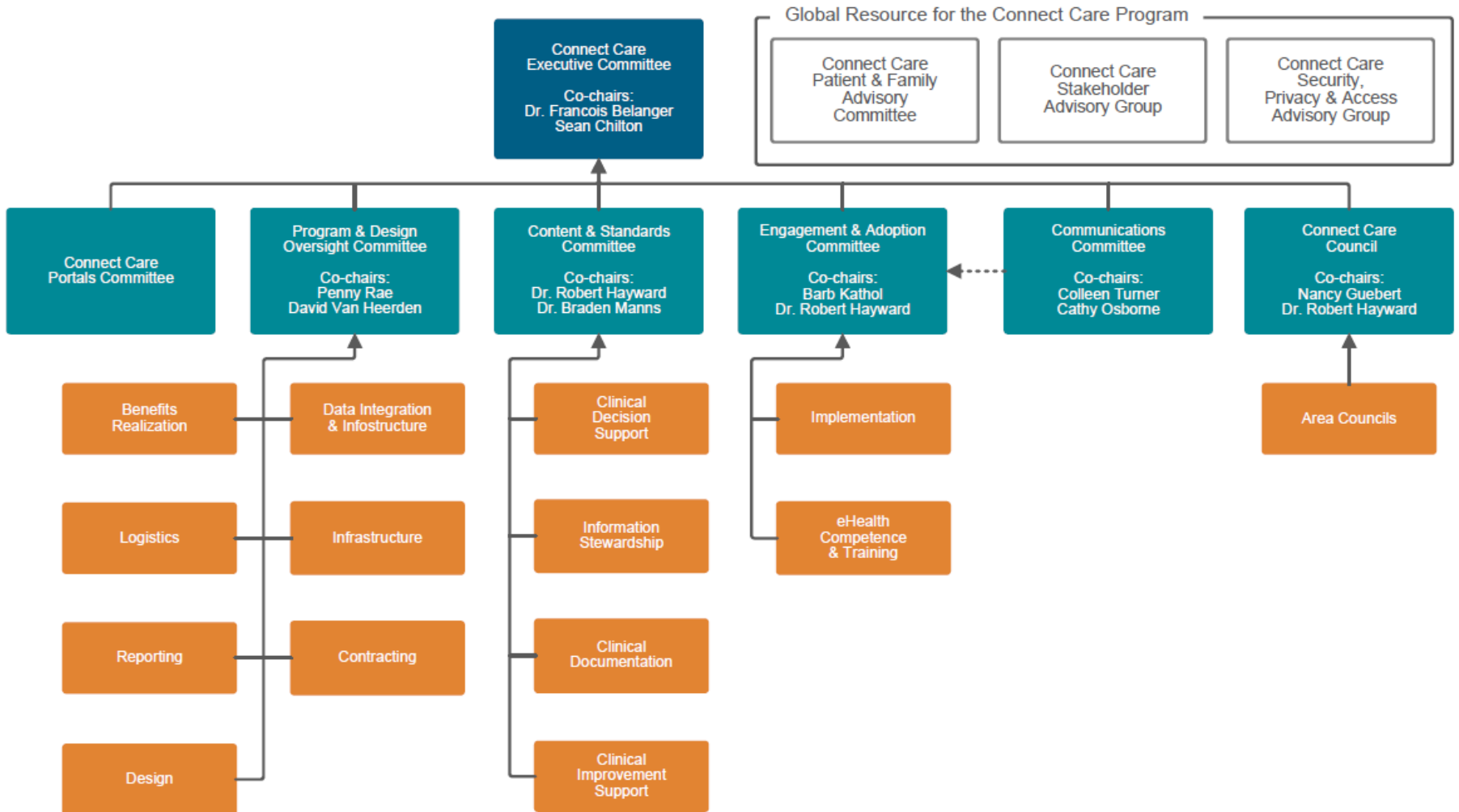
#### Decision Legend

3%

7%

25%

65%



## Research and inquiry are Clinical Operations.



Healthy Albertans.  
Healthy Communities.  
**Together.**

It's not the tools  
you have faith in  
—**TOOLS ARE JUST TOOLS**—  
they work, or they don't work.

*It's the people*

**YOU HAVE FAITH IN OR NOT.**



STEVE JOBS, APPLE

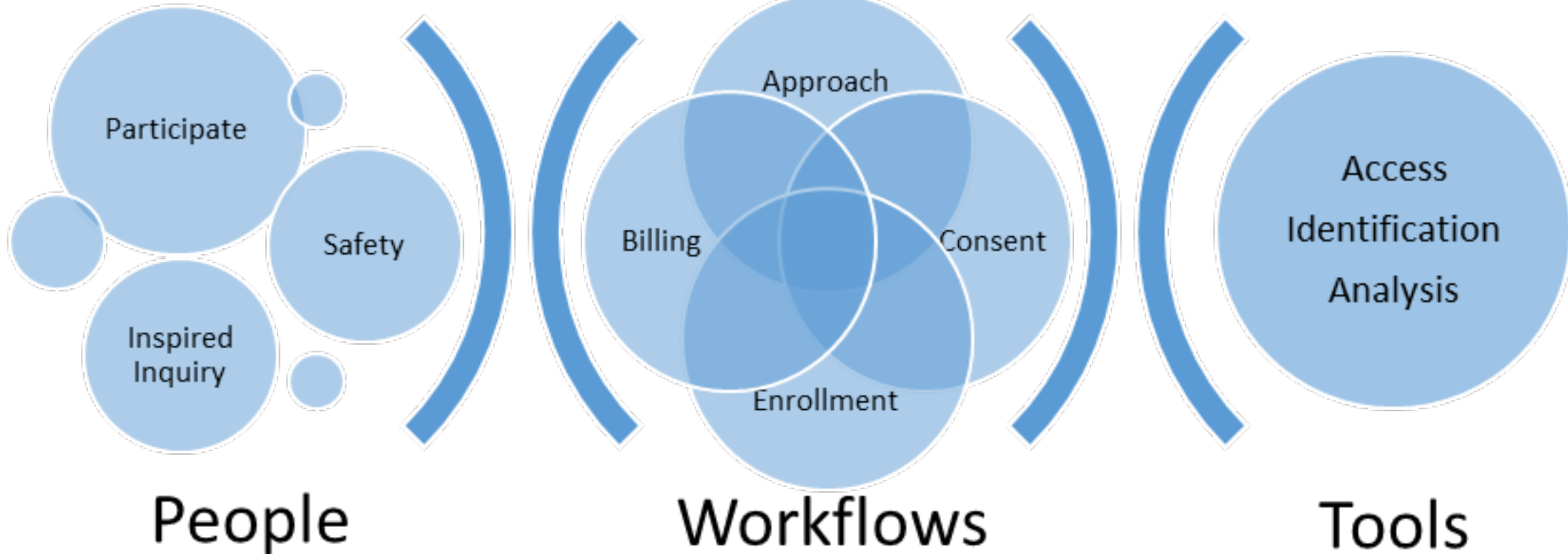


# INQUIRY AT POINT OF CARE

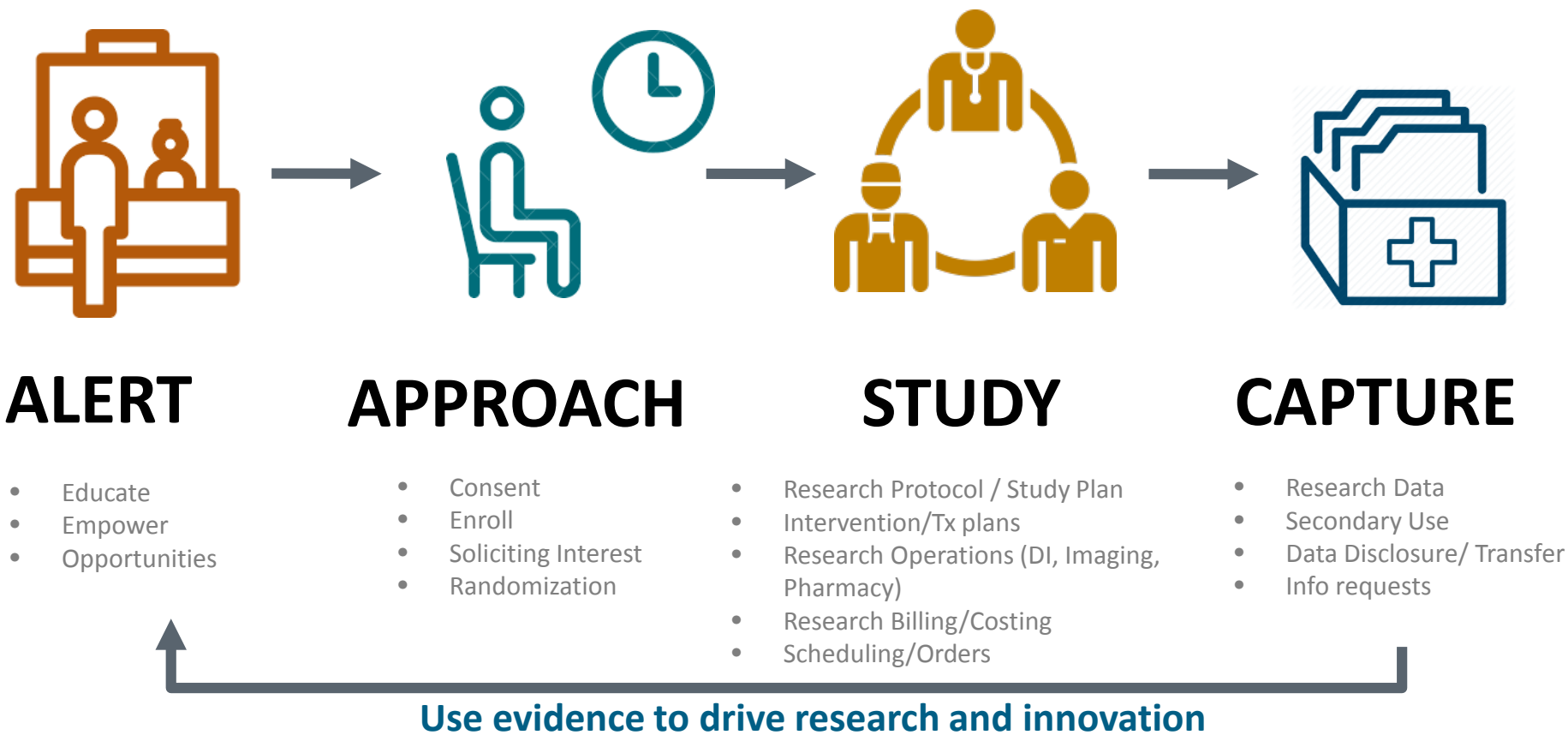
ASK

DO

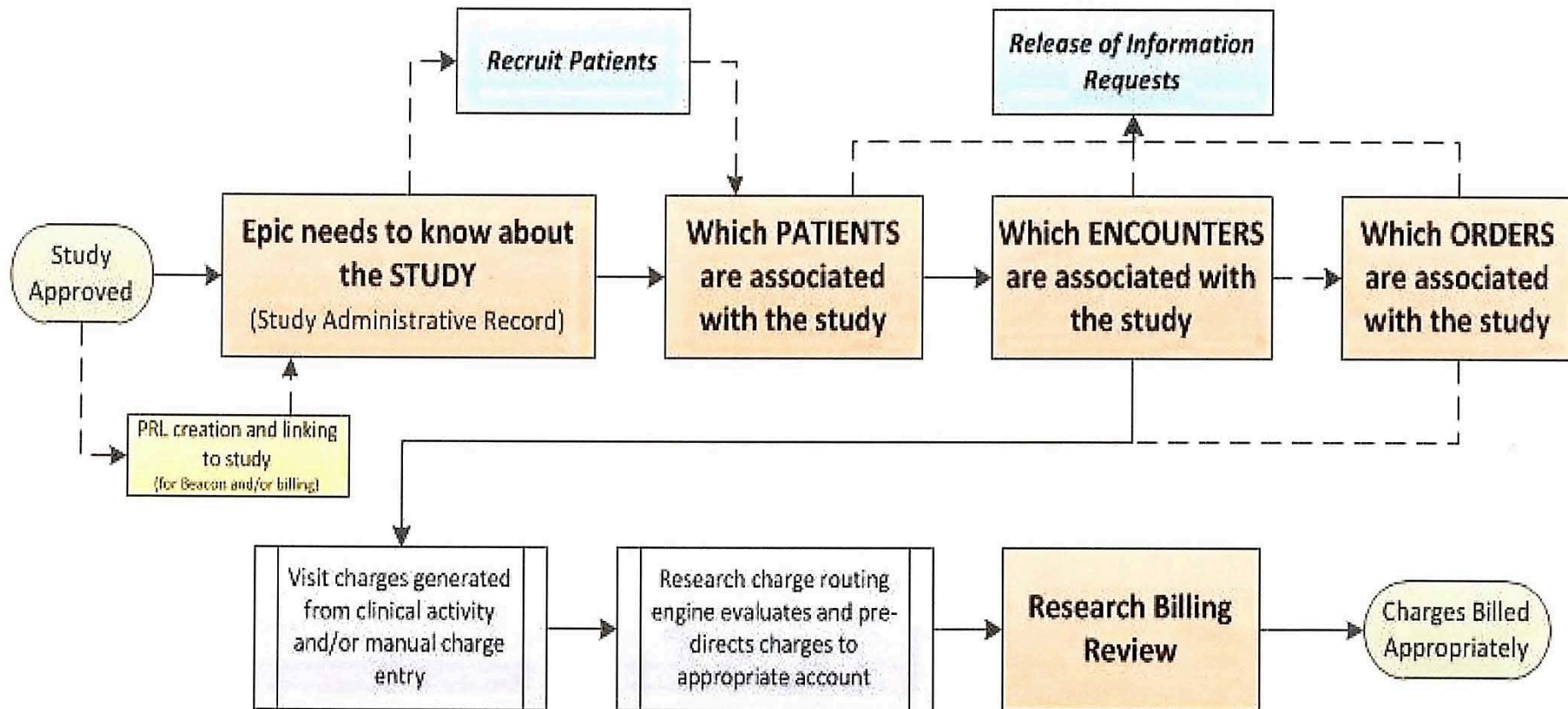
USE



# Research and Inquiry Workflows and Activities

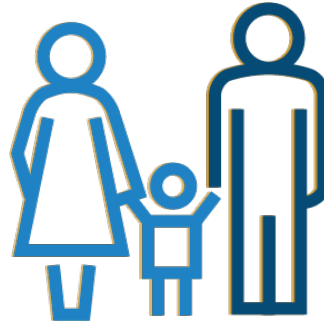


# Engineering a Learning Health Organization: developing clinical workflows to complement Epic research workflows



INQUIRE (WHAT?) & RESEARCH (WHY?)

HEALTH OUTCOMES  
EXPERIENCE  
CARE DELIVERY  
SERVICES  
EFFECTIVENESS



MEDICAL RECORDS & DATA

\*CHARTS OVER TIME\*

PHARMACY

\*EXPERIMENTAL vs. STANDARD  
THERAPY, DOSING

IMAGING

\*INNOVATIVE IMAGING,  
RESEARCH DATA\*

LAB SERVICES

\*INNOVATIVE TESTING, RESEARCH SAMPLES\*

LEARNING  
Healthcare

REGISTRATION & SCHEDULING

\*ENROLLMENT or REGISTRY\*

\*STUDY VISIT\*

VITALS & MEDICAL HISTORY

\*RESEARCH DATA\*

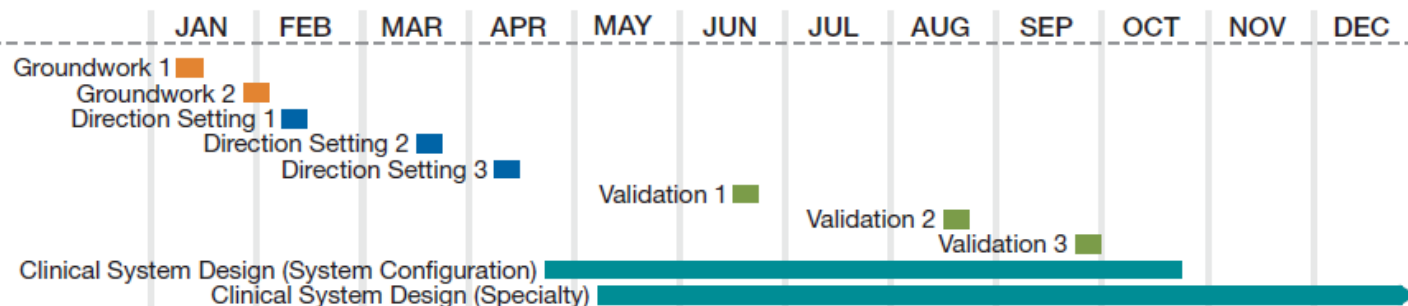
HOSPITAL SUPPORT SERVICES

\*EXPERIENCE AND QUALITY\*

# CONNECT CARE 2018



## TIMELINE



## GROUNDWORK



Through this “getting to know you” phase, Epic and Alberta Health Services exchange information about how teams deliver care across Alberta. Questionnaires, site visits and group consultations help Epic explore the places, facilities and relationships that shape AHS, Covenant Health and our partners. The information gathered is used by Epic to help us configure the Connect Care system.

## VALIDATION

Validation sessions are where Subject Matter Experts review how the system takes shape to ensure the workflows configured at the direction setting sessions work well across the different applications.



## DIRECTION SETTING

Direction setting helps us configure Connect Care to fit how we work. Subject Matter Experts from across the province, representing programs, care settings, and clinical and operations teams, are guided through a series of questions and make decisions on how commonly used workflows and processes are configured into the system.



## CLINICAL SYSTEM DESIGN

Clinical system design is the process of planning, selecting, designing and building documentation, decision-support, order-sets and other tools into Connect Care to support patient care. Clinicians, clinical and operations experts, and leaders will contribute to the decisions made about Connect Care content.

## SUBJECT MATTER EXPERTS

Across the province, expert physicians, front line staff, individuals from programs and services, and patients provide real-life knowledge of work as it actually occurs in Alberta Health Services. Subject Matter Experts help decide how Connect Care is designed to serve the needs of our patients and families, front line clinicians and staff.



# Adoption/Validation #1: Research Track Sessions

June 19-21, Calgary, AB

In these sessions, participants will review, validate and adopt the decisions made at Direction Setting sessions earlier this year.

## SESSION

## TOPICS FOR REVIEW

### Research Patient-Study Association

Discuss how patients are indicated as participating in a study, research consent workflows and alerts for principal investigators and study coordinators when study patients present to emerge or are admitted.

### Research Establishing a Study Record

Give a brief overview of research functionality in Epic and discuss study administrative record creation and maintenance

### Research Billing

- Determine the ConnectCare workflows for;
- research charge review (determining which charges should fall to the study versus be billed to Alberta Health)
  - how many level of charge review AHS will have for research charges
  - who will be responsible for each level of review



## ENABLING HEALTH RESEARCH AND INNOVATION

AHS investments in research and innovation can lead to the introduction of new clinical therapy, drugs, technologies and programs which can transform health care and improve outcomes. Researchers and innovators rely on AHS to provide them with access to our patients, health information, health care activity data, medical tests, drugs and AHS facilities.

### **Research Study Administration and Approvals**

provides resources, data access and approvals for the set-up and conduct of clinical research in Alberta.

### **Health Technology Innovation**

provides expertise and skills in the areas of health technology assessment and appraisal, innovation, clinical epidemiology and project management.

### **Knowledge Resource Service**

provides access to, and support in using, evidence resources to support evidence-informed decision making and quality patient care.

### **Health System Evaluation and Evidence**

provides evidence that improves clinical workforce utilization, professional practice and the provision of quality patient care.

### **Health Technology Adoption**

provides expertise to SCNs and supports evidence-informed decision-making through the exchange, synthesis, and application of knowledge to quickly capture the benefits of research.

### **Knowledge for Change**

provides nationally recognized, evidenced-based knowledge translation (KT) supports to health research and innovation projects.