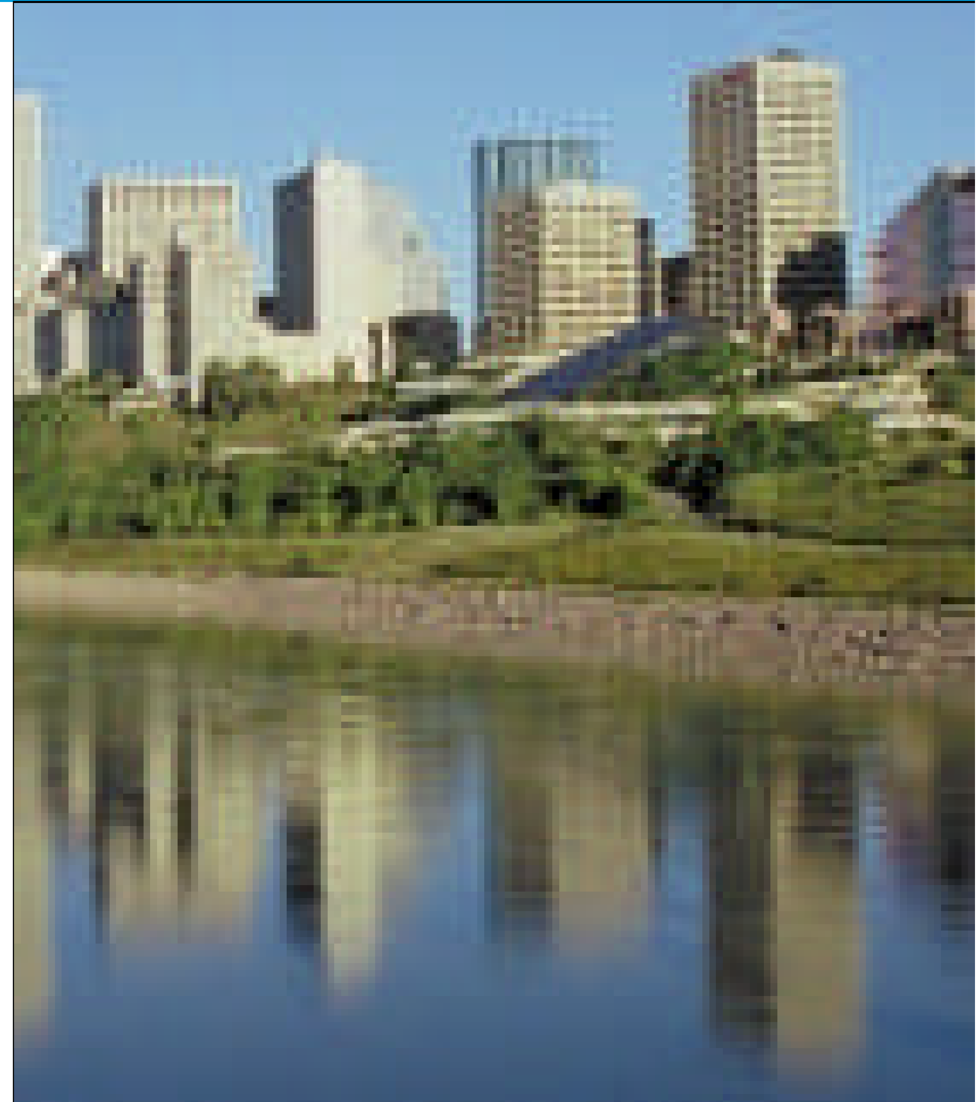
Capital Health
EDMONTON AREA

Understanding the Development, Design, and Implementation of a Chronic Disease Management Registry in Primary Care

May 9, 2008

Stephanie Donaldson Kelly
Director of Operations,
Chronic Disease Management
Capital Health
Canada



Capital Health
EDMONTON AREA

Purposes of Project

- Enable care coordination between primary care GPs and specialty services within and across regions
- Create population-based registry and dashboard to monitor and improve care
- Deploy the registry in provincial Alberta Netcare EHR Portal environment
- Facilitate linkage to primary care physicians and enrolment into regional programs
- Provide decision support tools

Canada

Capital Health
EDMONTON AREA

The Value Proposition

For Patients

- Enhanced health outcomes and quality of life through early and accurate delivery of appropriate medical services.
- Timely access to appropriate medical services and facilities.

The Value Proposition

For Family Physician Practices

- A single comprehensive Chronic Disease patient registry integrated with clinic registry and system processes.
- Could be used by offices with paper and electronic charts
- Automated tools to improve health outcomes for managed vs. unmanaged patients
- Improved linkage between regional services and primary care

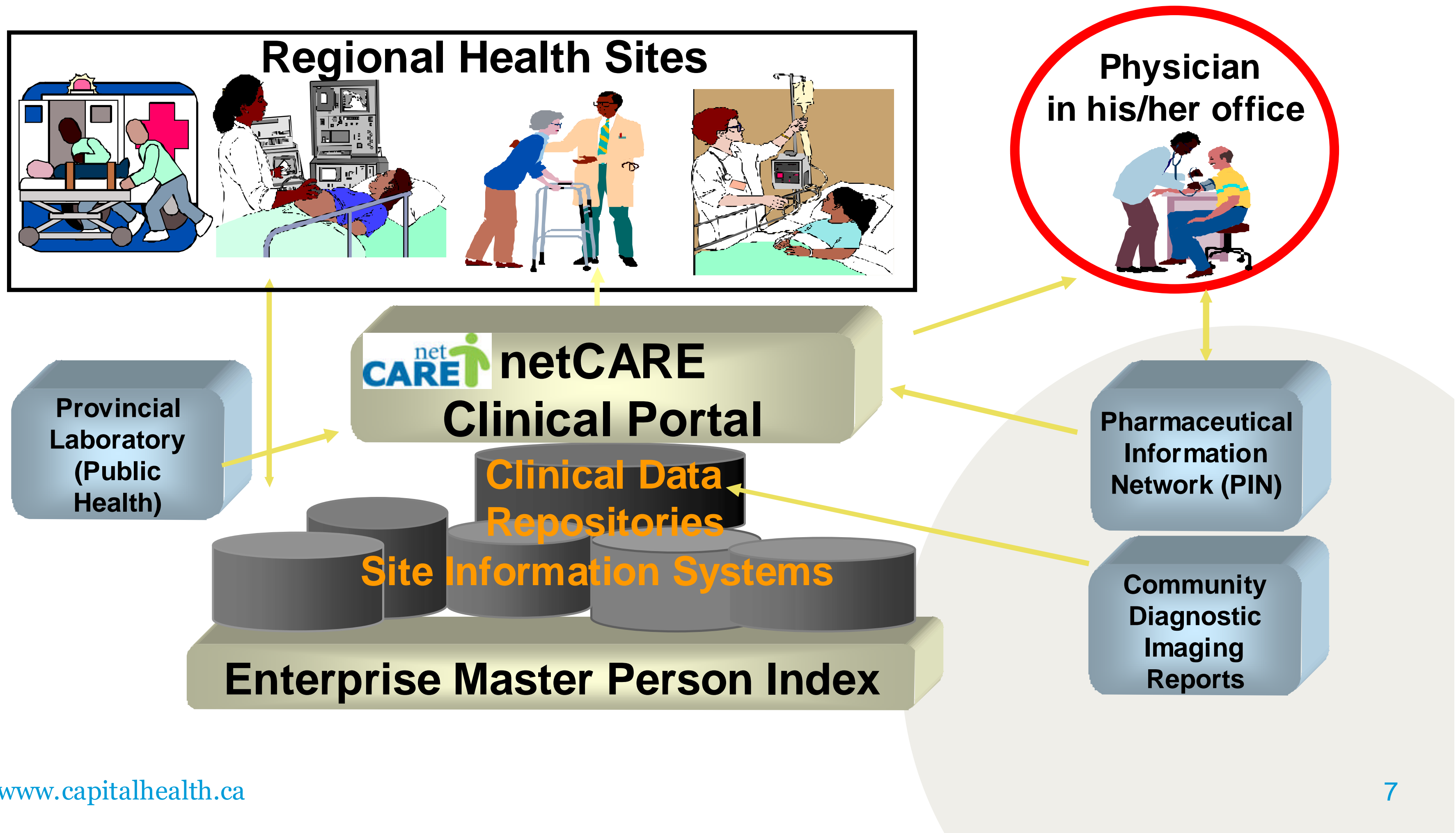
The Value Proposition

For Regional Health Authorities

- Assist clinicians in delivery of Chronic Disease patient care.
- Data populated and used by Primary Care GPs.
- System-wide dashboard to monitor performance of delivery models.
- Metrics to support appropriate allocation of funding and resources.
- Clinical data linked to system-wide financial data for economic analysis

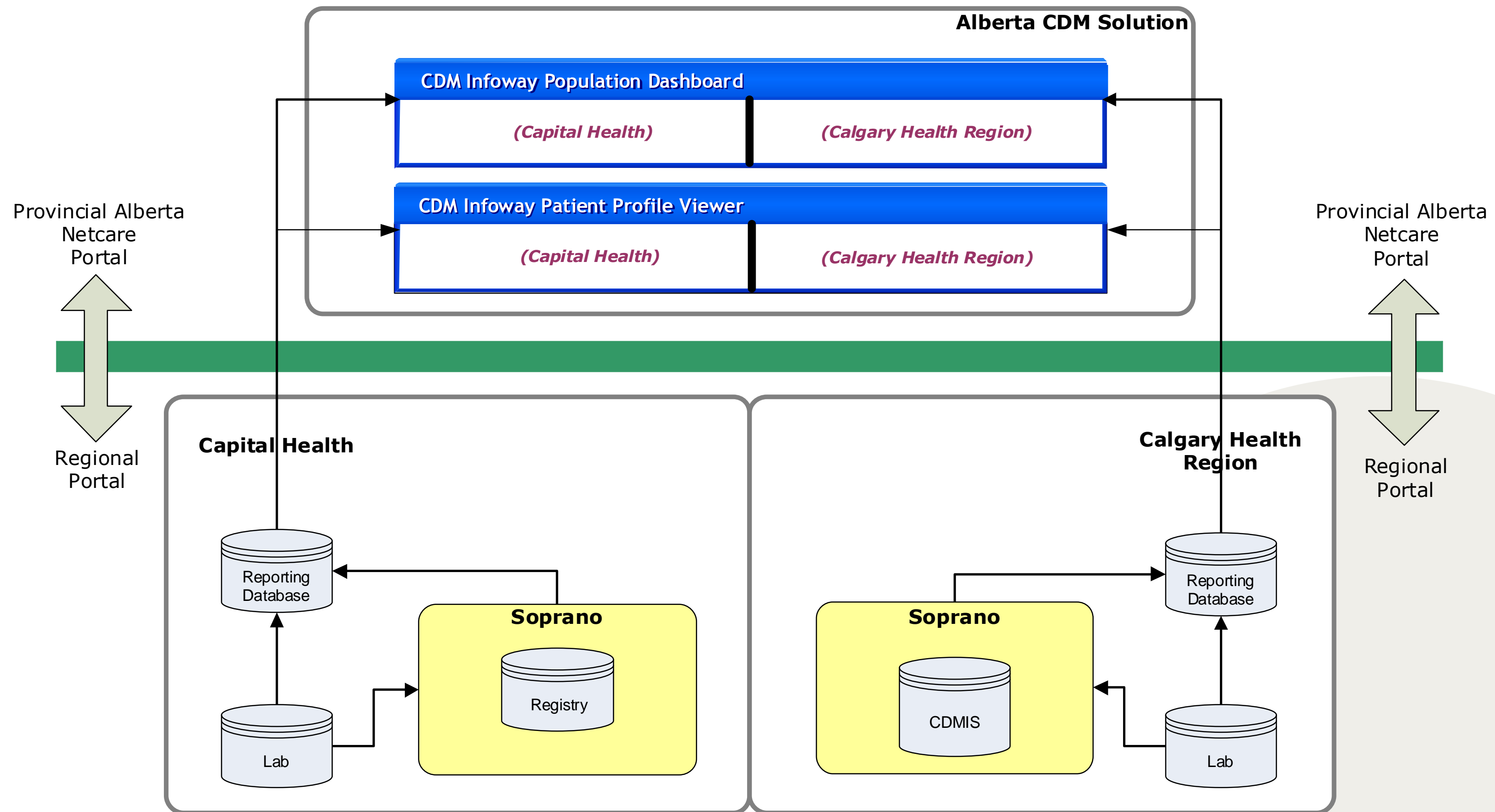
Capital Health
EDMONTON AREA

Clinical Information Systems Platform



Capital Health
EDMONTON AREA

Sharing Data Between EMR's and Registry



Capital Health
EDMONTON AREA

Dashboard Drilldown Flow

Dashboard

Viewer

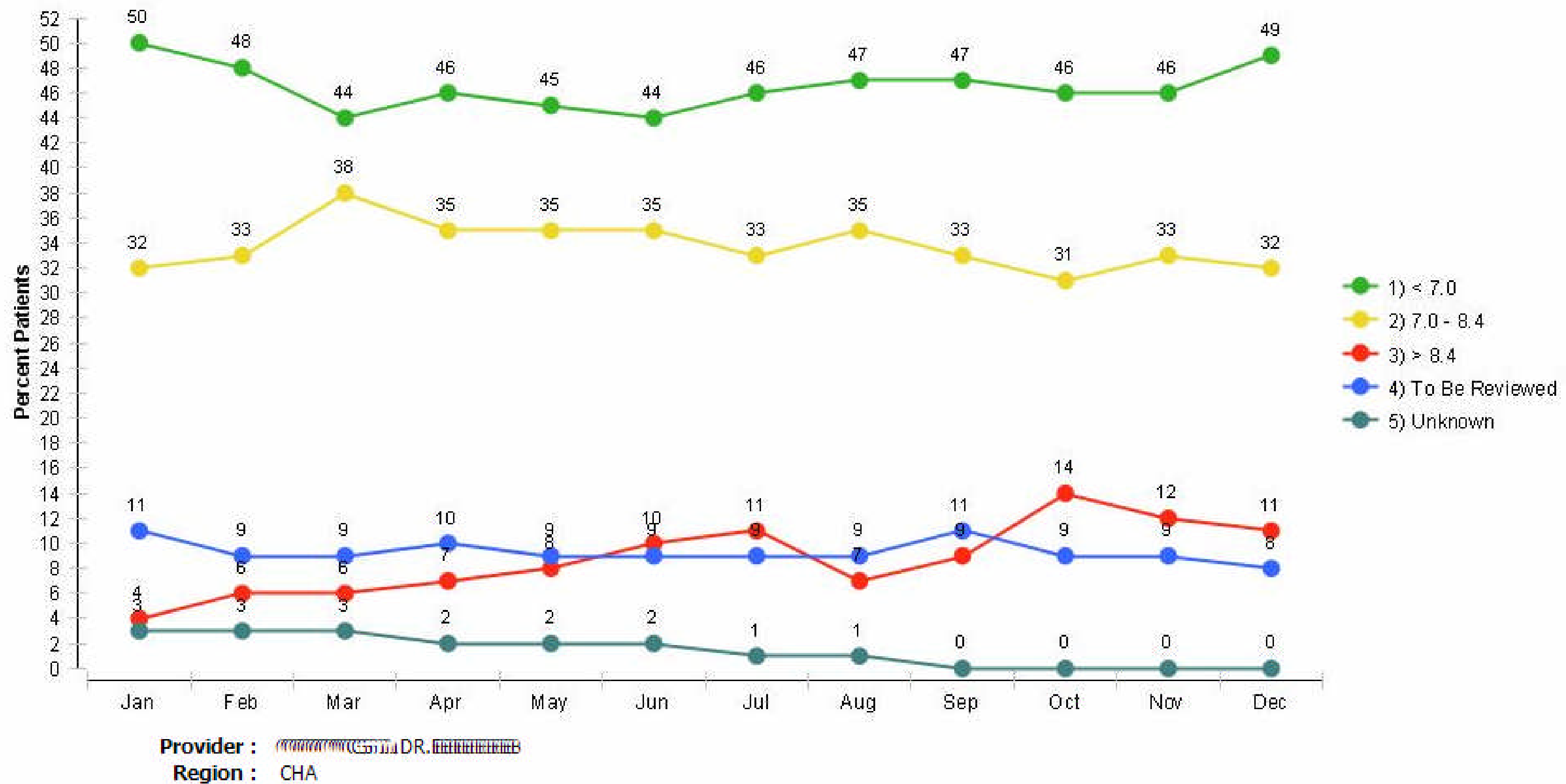
Patient List

Patient List

Name	PHN / ULI	Sex	Date of Birth	A1C	A1C Date	Responsible Physician	Diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis
LAST, First	xxxxx-xxxx	M/F	dd-MMM-YYYY	XXX	dd-MMM-YYYY	LAST, First	diagnosis

Capital Health
EDMONTON AREA

Dashboard Trend



Registry

- Operates within the provincial Electronic Health Record (Alberta Netcare)
- Populated by GPs and regional services
- Remote, web-based access for information transfer & clinical documentation regardless of location
- Interface capability to allow data exchange & auto-population between systems
- Stringent security requirements

Patient Profile Viewer

- Contains a summary of clinical information including
  - Care Co-ordination -Medications
  - Co-morbidities / Complication
  - Markers of Disease Progression
  - Screening for Further Complications
  - Health Status and Management Against Goals
- Can be accessed by any health care provider requiring the health information

Capital Health
EDMONTON AREA

Registry – Patient Viewer

Portal 2006 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Clinical Documents (All) 15:07 07-Sep-2007

Help Home Logout

Common
Favourites
Recently Viewed Patients
List 1
List 2
List 3
List 4
Searches
Patient Lists
Concerto
Messaging
BIRT

Showing all documents
Mark selected document as unread
Mark all documents as read

Date	Title	Author

- Dynamic Patient Summary
- Chronic Disease Summary
- Anatomic Pathology (10/10)
- Blood Bank (15/15)
- Blood Gases (62/62)
- Blood Products (30/30)
- Chemistry (1675/1675)
- Coagulation (191/191)
- Cytogenetics (2/2)
- Drug Levels (14/14)
- Fluids (20/20)
- Hematology (298/298)
- Immunology (10/10)
- Microbiology (208/208)
- Other (13/13)

View By Category Look For C Status All Clear

Care Co-ordination

Responsible Physician :	JONES, DR. PETER
Follow Up Scheduled :	Yes
Follow Up Date :	24-Sep-2007
Follow Up Type/Reason :	Telephone

Co-Morbidties / Complications

Depression	05-Sep-2007
Foot Disorder	07-Aug-2007
Sexual Dysfunction	04-Aug-2007
Obesity	12-Apr-2006
Hypertension	24-Feb-2006
Lung Transplant	16-Aug-2004
Retinopathy	05-May-2003
Gestational Diabetes	22-Dec-2000

Medications

Diamicron	1 time a day	10 mg	02-MAR-2006	Take as supplemented	Oral blood glucose lowering drugs (A10B)
gliclazide	3 times a day	12 mg	02-JAN-2006	No refills	Oral blood glucose lowering drugs (A10B)
Tenormin	1 time every month	225 ug	05-MAY-2007	Research on Medication	Antihypertensive/Renal Medications (C02)
Atenolol	2 times every 2 weeks	125 ug	02-MAY-2004		Antihypertensive/Renal Medications (C02)

Markers Of Disease Progression

A1C				
Hemoglobin A1C (HBA1C) :	6.3	%	05-DEC-2005 08:46	High
Blood Glucose				
Glucose, fasting :	5.6	mmol/L	16-APR-2007 08:29	
Glucose, random :	7.6	mmol/L	19-AUG-2003 10:55	
Creatinine				
Creatinine :	159	umol/L	16-APR-2007 08:29	High
Calculated GFR :	40	mL/min/1.73m2	16-APR-2007 08:29	Low
Lipids				
LDL Cholesterol :	2.15	mmol/L	07-SEP-2006 09:02	
Triglyceride :	1.67	mmol/L	07-SEP-2006 09:02	
Total Chol/HDL Ratio :	3.5		07-SEP-2006 09:02	
Cholesterol :	4.06	mmol/L	07-SEP-2006 09:02	
Microalbumin				
Albumin/creatinine :	42.31	mg/mmol	21-JUL-2003 03:40	High

Characteristics Relevant To Condition

Alberta Netcare

Done Local intranet

How Did We Get Here?

- Completed Western Health Information Collaborative Four Western Provinces of Canada (05/06)
- The purposes were to:
  - Modify existing information systems to conform to the WHIC data definitions and message standards.
  - Share the data message between two provincial partners and with family physicians' offices.
  - Support communication amongst providers.

How Did We Support Primary Care GPs to Identify Patients?

- Used existing platform to facilitate identification, management and early intervention with all disease states.
- Used common datasets across multiple chronic condition pathways to improve communication and allow for aggregate data mapping e.g. 12 conditions captured in pathways.
- Provided standard reports.
- Provided on-going support and training.

Capital Health
EDMONTON AREA

Outcomes Realized To Date

- Common data definitions, messaging standards, and dashboard indicators identified
- Set up for system to system communication
- Clinicians are on board with a vision

Capital Health
EDMONTON AREA

Corollary Outcomes

- Reusable work for multiple chronic conditions
- Foundational elements help with other types of clinical system builds
- Improved support for family practice

Where Do We Go From Here?

- Expand the deployment to additional primary care physicians
- Expand the deployment across additional disease conditions
- Integrate the registry with existing EMRs
- Implement e-referrals and communication tools
- Expand deployment across the province

Lessons Learned

- Consistency between primary care clinical processes, issues, and system requirements
- Consistency from region to region
- More successful when we go from clinical viewpoint
- Concerns about big brother watching
  - Pay for performance
- Faint of heart need not apply

Capital Health
EDMONTON AREA

Evaluation Process

- Evaluation
  - Post implementation analysis & benefits realization study will be completed, including planning for further deployment

Capital Health
EDMONTON AREA

Thank You!

Stephanie Donaldson Kelly
Director of Operations,
Chronic Disease Management
Capital Health

Stephanie.DonaldsonKelly@capitalhealth.ca