RENAL CARE DELIVERY IN THE PROVINCE OF ONTARIO,CANADA

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The provision of dialysis therapy to patients with ESRD is very costly

- In the USA, the ESRD program cost US$22.7 billion in 2006, accounting for 6.4% of the total Medicare expenditure for about 1.2% of all Medicare patients.
- In 2005 in Taiwan, which has one of the highest ESRD prevalence rates in the world, dialysis patients consumed more than 6.1% of the total annual spending of national health insurance

- In Korea, although the number of dialysis patients only accounts for 0.12% of the total patient population, the cost of dialysis consumes 3% of the total medical costs.
- Malaysia, the renal services account for about 1% of the federal health budget in

CANADIAN COSTS OF CKD

- In 2005, 1.2 per cent of health care spending (>$1.8B) in Canada was spent caring for 0.092 per cent of the population

Canadian Health Care system

- is universally funded by taxation
- centrally administered by each province
- Hospitals are publicly funded and not for profit

Canada

Political Regions

N

Yukon Territory

Northwest Territories

Nunavut

British Columbia

Alberta

Saskatchewan

Manitoba

Ontario

Quebec

Newfoundland and Labrador

Prince Edward Island

Nova Scotia

New Brunswick

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Population of Canada and Canadian Provinces and Territories

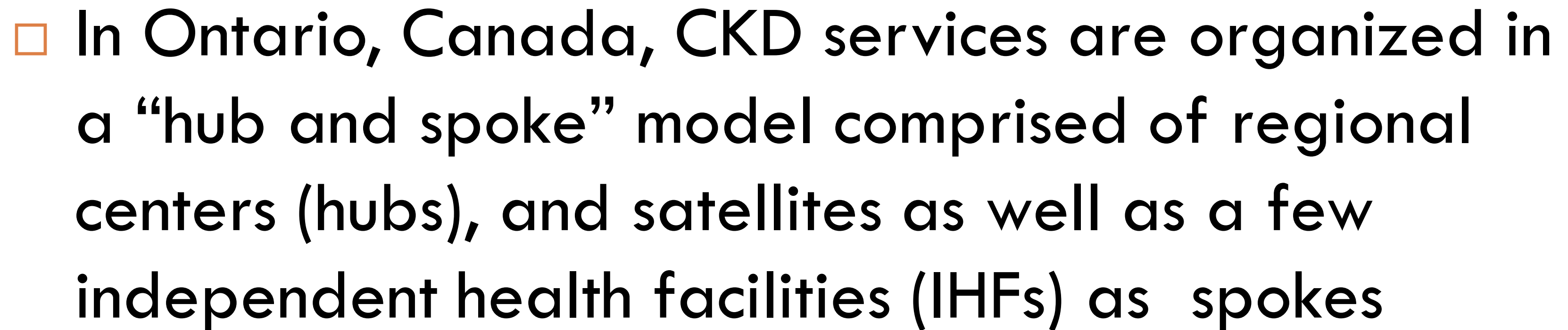
Ontario	13,167,900
Quebec	7,886,100
British Columbia	4,510,900
Alberta	3,724,800
Manitoba	1,232,700
Saskatchewan	1,041,700
Canada	34,018,957

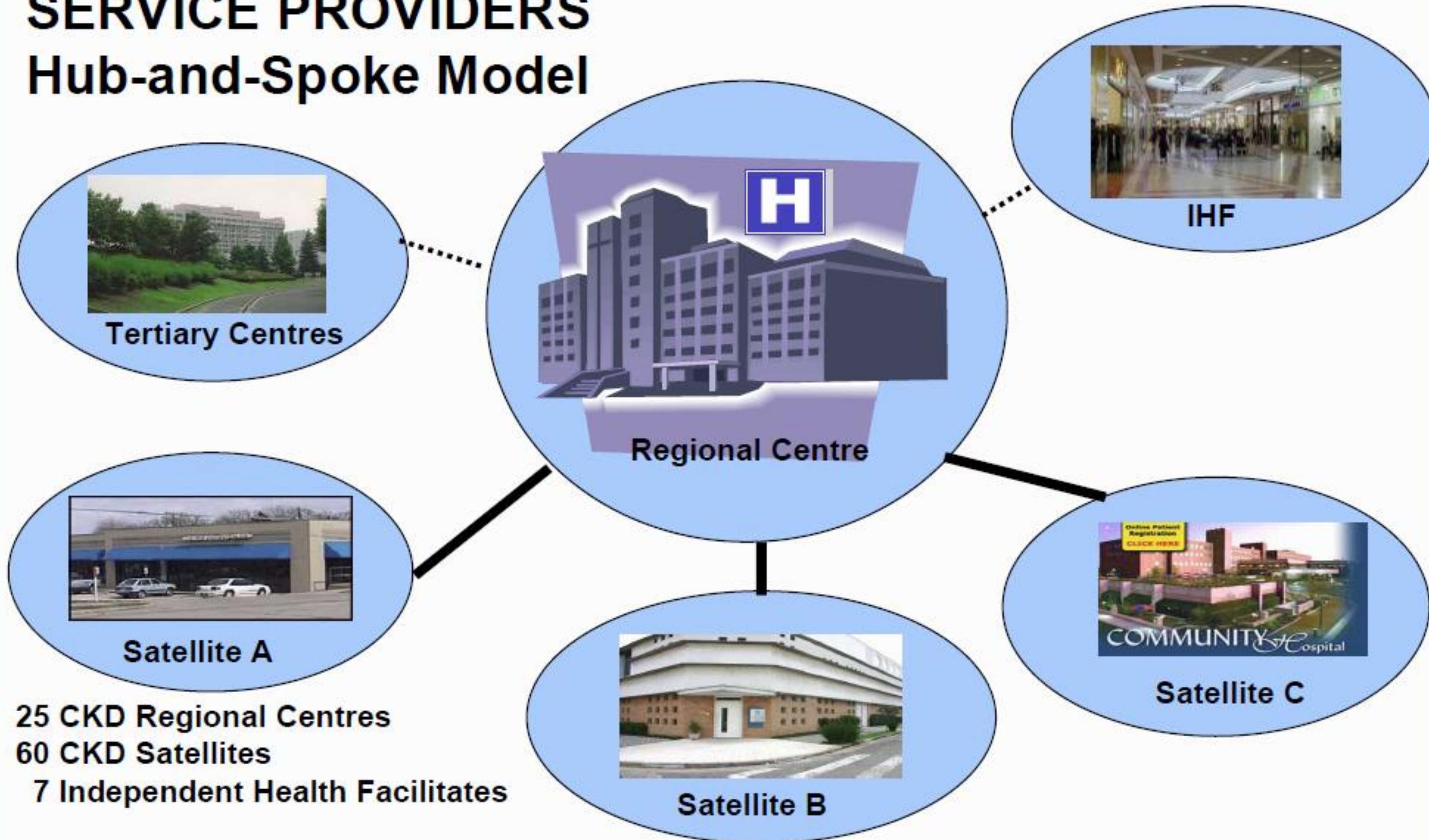
ONTARIO

- The Ministry of Health and Long-Term Care of the Government of Ontario promotes a chronic kidney disease (CKD) system that includes renal insufficiency clinics, dialysis treatments, renal transplants, vascular access services, and professional health support services

Across Ontario, CKD Services are provided by:

- 26 Regional CKD Programs
- 26 CKD regional centres
- Approx 65 CKD affiliated sites
- Approx 42 hospital-based centres
- Approx 14 community-based centres
- 8 Independent Health Facilities
- Approx 9 others (LTC, rehab and complex continuing care facilities)


In Ontario, Canada, CKD services are organized in a “hub and spoke” model comprised of regional centers (hubs), and satellites as well as a few independent health facilities (IHFs) as spokes



Regional Centre: the HUB of the network for defined geographic region and maintain linkages with tertiary centre and IHFs

The Present Ontario Renal System

- Approximately 8,000-9,000 patients on dialysis; another 8,600 patients are in multi-disciplinary pre-dialysis clinics
- Total cost of care is ~ $360M/year (excluding EPO)
- Dialysis patients increasing in incidence by 8%/year
  - ICES data will suggest 7-12.8%increase per year depending on location in Ontario.
- 80% receive treatment in units in acute care hospitals and satellites; 20% are maintained on home modalities
- Volume funded by Priority Programs Division
- Delivered using a “Hub and Spoke” model

CKD Growth in Total Spending

	FY 2004/05	FY 2003/04	FY 2002/03	FY 2001/02
Total Expenses**	$357,642,690	$324,362,787	$299,660,569	$248,981,383
% Increase	10.26%	8.24%	20.35%	

Source: Ministry of Health, Data Blitz, Data Quality Review, Final Data

***Excludes EPO*

3% of hospital budget for 0.07% of the Ontario population

System Challenges

- Lack of *Access* and *Integration*
  - Suboptimal access to multidisciplinary care for Stage 3-5 patients
  - High occupancy rates in dialysis units
  - Ill-coordinated patient flows among regions
  - Decreased access to specialty services
  - Lack of proactive planning for expansion
- Lack of Province-wide Information on *Quality*
  - No addressing of small area variations
- Lack of Standardized Information on *Costs*
  - No consistent use of measures to manage costs

Question 1

- Stakeholders have made a number of recommendations to improve CKD in Ontario. These recommendations can be summarized into 6 priority areas:
  1. Provincial Coordination
  2. Guidelines & Standards
  3. Quality and Performance Management
  4. Targets
  5. Funding and Resources
  6. Information System

Yes = 85%
No = 15%
N=55

Solutions in Other Jurisdictions:

BC Provincial Renal Agency

Established as an agency of the Provincial Health Services Authority

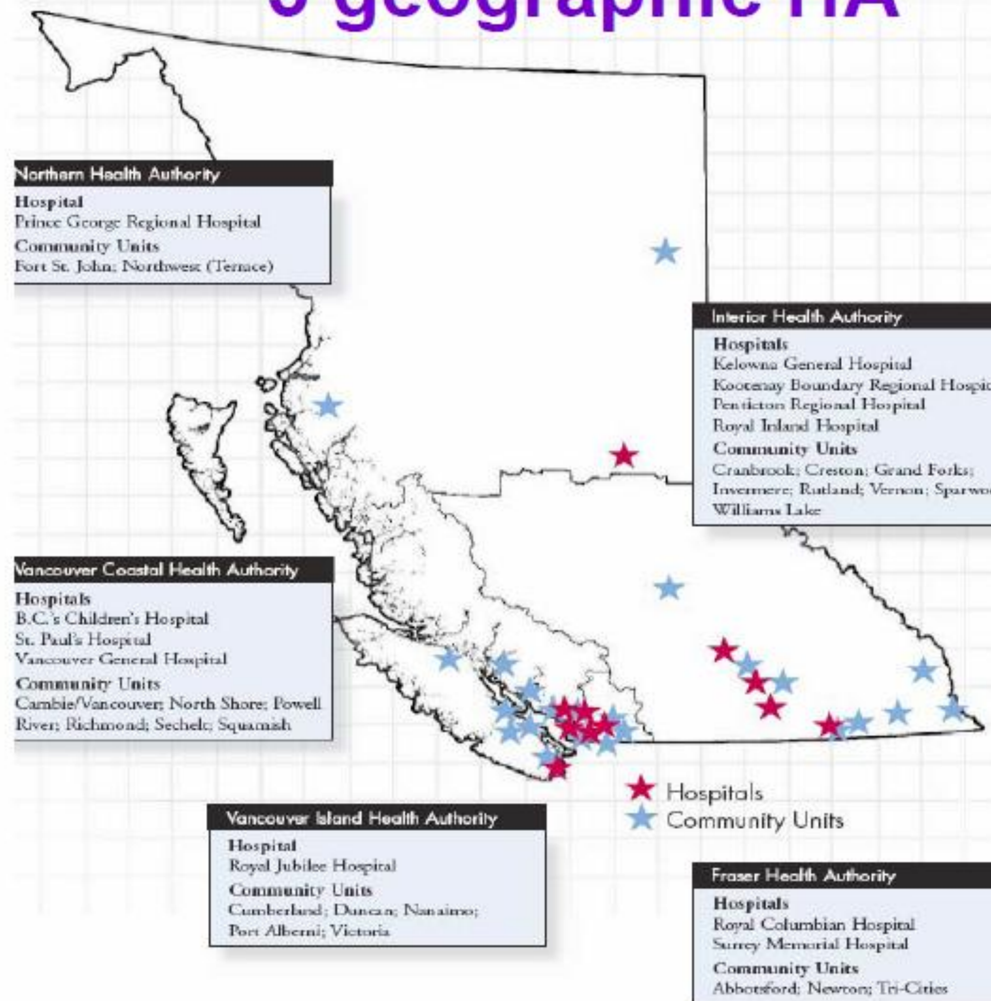
- Acts as a provincial resource by collecting and analyzing key information related to patients, services and funding.
- Plans and coordinates renal services for continuum of CKD patients province-wide by working closely with the 5 HARPS.
- Works cooperatively with a province-wide network of renal care providers and FDs supporting new initiatives.
- Sets directions and develops province-wide standards and guidelines.
- Develops financial models and allocations to support optimal health outcomes

British Columbia Provincial Health Authorities (HA)

1 Provincial HA

- for tertiary / high cost / complex care
- 8 different ‘disease’ groups
  - Cancer
  - Cardiac Services
  - Children
  - Women
  - BC Centre for Disease Control
  - Mental Health
  - Renal
  - Transplant

5 geographic HA



Outcomes in Other Jurisdictions

	Access	Quality
UK	CKD in pre-dialysis care: 3.7 * RRT ESRD growth rate: 5%/yr Home: 29%	Objective feedback for units available
Alberta (NARP)	CKD in pre-dialysis care: 1.9 * RRT ESRD growth rate: 1.7 %/yr Home: 23%	
British Columbia	CKD in pre-dialysis care: 1.3 * RRT ESRD growth rate: 8-10 %/yr Home: î 37% over past 4 yrs	Objective feedback for units available
Ontario	CKD in pre-dialysis care: 1.0 * RRT ESRD growth rate: 8-12%/yr Home: Static / Declining	<u>No</u> objective feedback for units available

A Made-in-Ontario Strategy

The most effective way to ensure that accessible, quality, cost efficient and integrated care is being provided throughout Ontario is to implement a comprehensive, standardized model of CKD care and dialysis delivery.

Local Health System Integration Act, 2006

- Establishes LHINs as *Crown Agencies* of the Government.
- Sets out their *corporate powers and mandate*.
- Requires the Minister and the LHINs to establish *strategic plans* for the provincial and local health systems.
- Provides LHINS with *authority to fund certain providers* and enter into *accountability agreements*
- Provides LHINS with the *power to integrate (restructure)*
- Enables government to *devolve further powers and authorities* to the LHINs

Health System Stewardship vs. Management

Ministry – System STEWARD

- Establish Provincial Strategic Plan
- Develop legislation, regulations, standards, policies and directives
- Monitor and report on health system performance and health of citizens (e.g. Health System Scorecard)
- Plan for and establish funding models and funding levels
- Work cooperatively with health care partners (Ministry and LHINS are partners in health system).

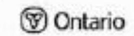
LHIN – System MANAGER

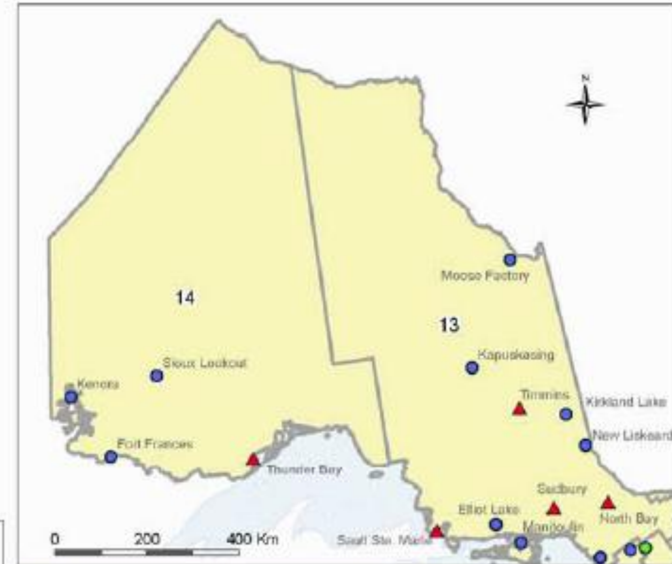
- Manage local health system
- Develop Integrated Health Service Plans (IHSP) that include a vision, priorities and strategic directions for the local health system
- Develop Annual Service Plans, Annual Reports, quarterly reports, to demonstrate sound financial management of public resources
- **Fund local Health Service Providers (HSP) and enter into and manage the service accountability agreement**
  - **(e.g.H-SAA)**

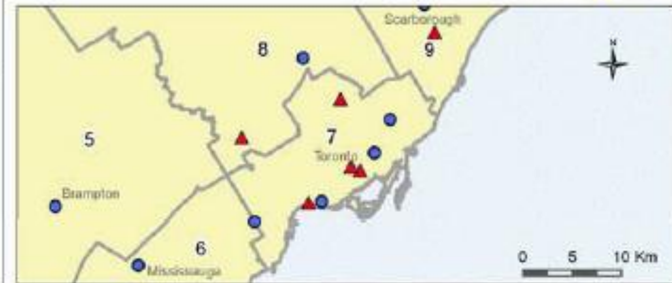
Chronic Kidney Disease Program

Regional Centres, Satellites and Independent Health Facilites

2006







▲ Regional Centre

● Satellite

● Independent Health Facility

Local Health Integration Network (LHIN)

Local Health Integration Network

1. Erie St. Clair
2. South West
3. Waterloo Wellington
4. Hamilton Niagara Haldimand Brant
5. Central West
6. Mississauga Halton
7. Toronto Central
8. Central
9. Cental East
10. South East
11. Champlain
12. North Simcoe Muskoka
13. North East
14. North West

0 50 100 Km

Printed on October 31, 2006

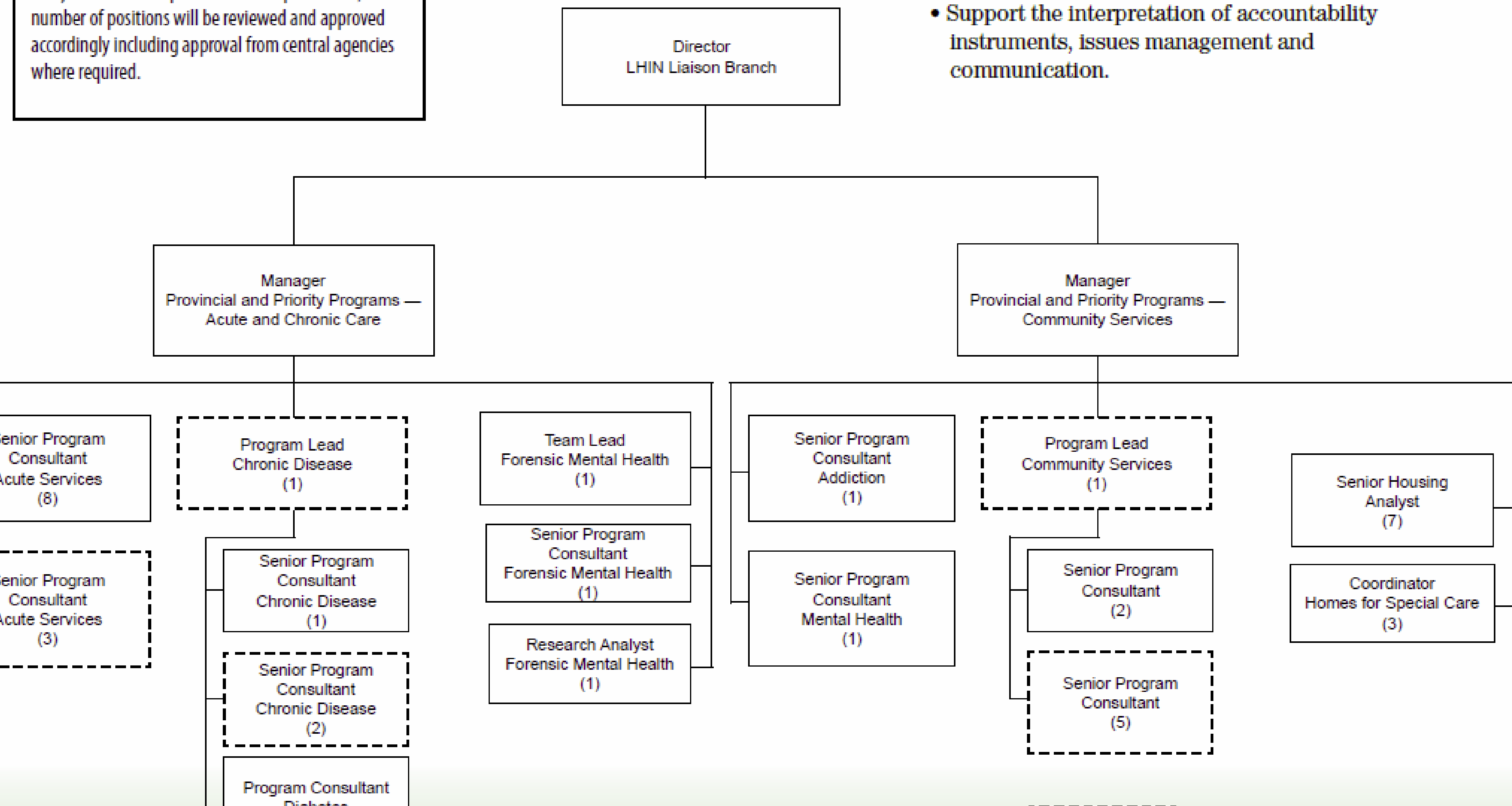
Produced By: Divisional Decision Support Unit, October 2006 Software: ESRI ArcGIS 9.1

LHIN Liaison Branch — Provincial and Priority Programs Organizational Chart

The numbers of positions captured in these organization charts are estimates only and are based on initial planning assumptions about the work which will be undertaken. As a result of the on-going analysis of business priorities and requirements, the number of positions will be reviewed and approved accordingly including approval from central agencies where required.

Mandate

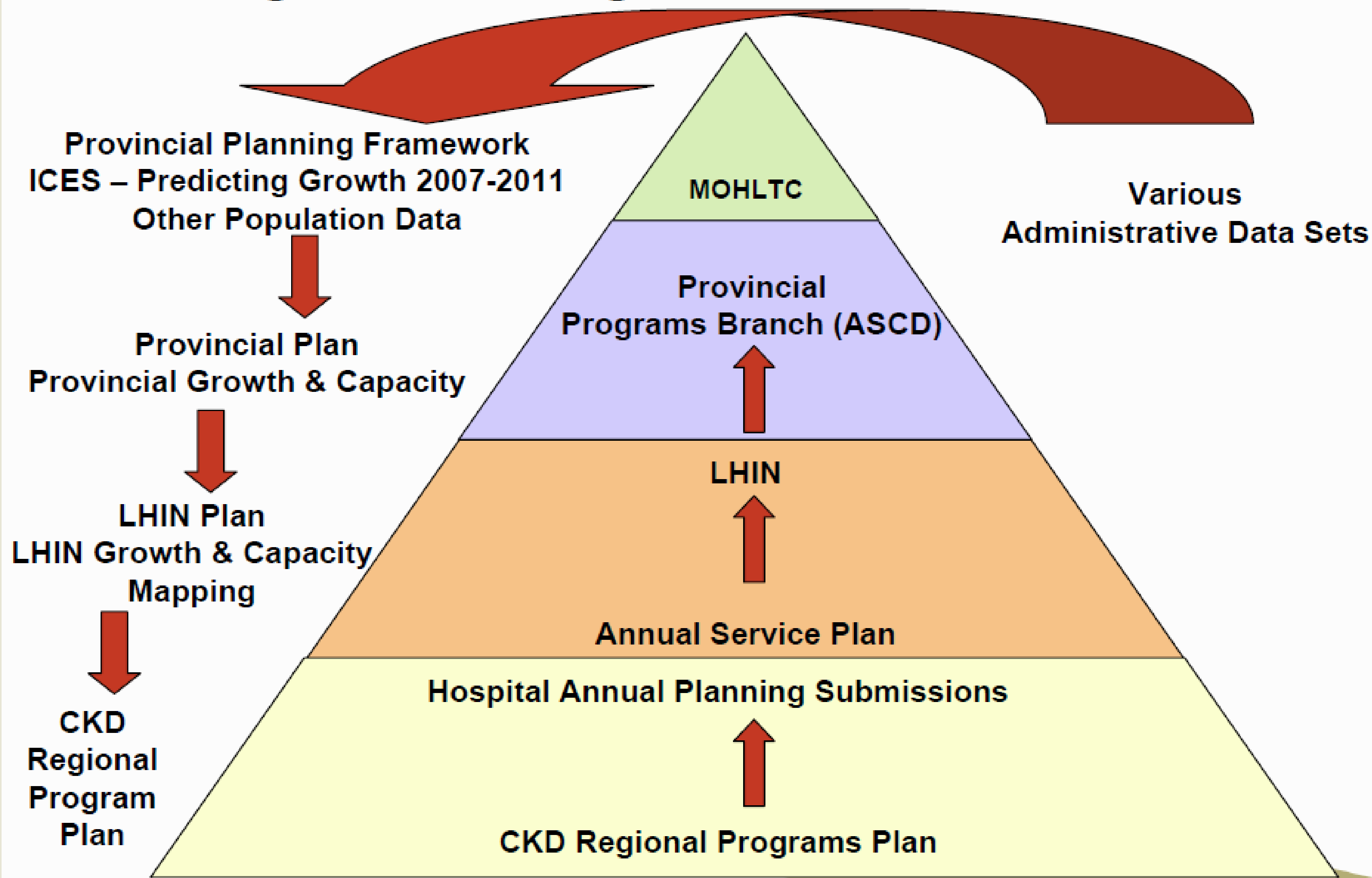
- Oversee accountability agreements, service-level agreements and related schedules, and manage program providers to funding envelope.
- Lead efforts to evaluate retained programs on an ongoing basis.
- Support the interpretation of accountability instruments, issues management and communication.



Chronic Kidney Disease

- . A Provincial program that was devolved to the LHINs as of the 1st April 2007

CKD Program Planning



Ministry of Health and Long-Term Care

MOHLTC-LHIN Effectiveness Review

FINAL REPORT

September 30, 2008

Program Management

- Programs have been devolved to the LHINs, such as Chronic Kidney Diseases(CKD),that LHINs are required to manage

- Some LHINs do not have the program managers or the program management skills to effectively manage these programs

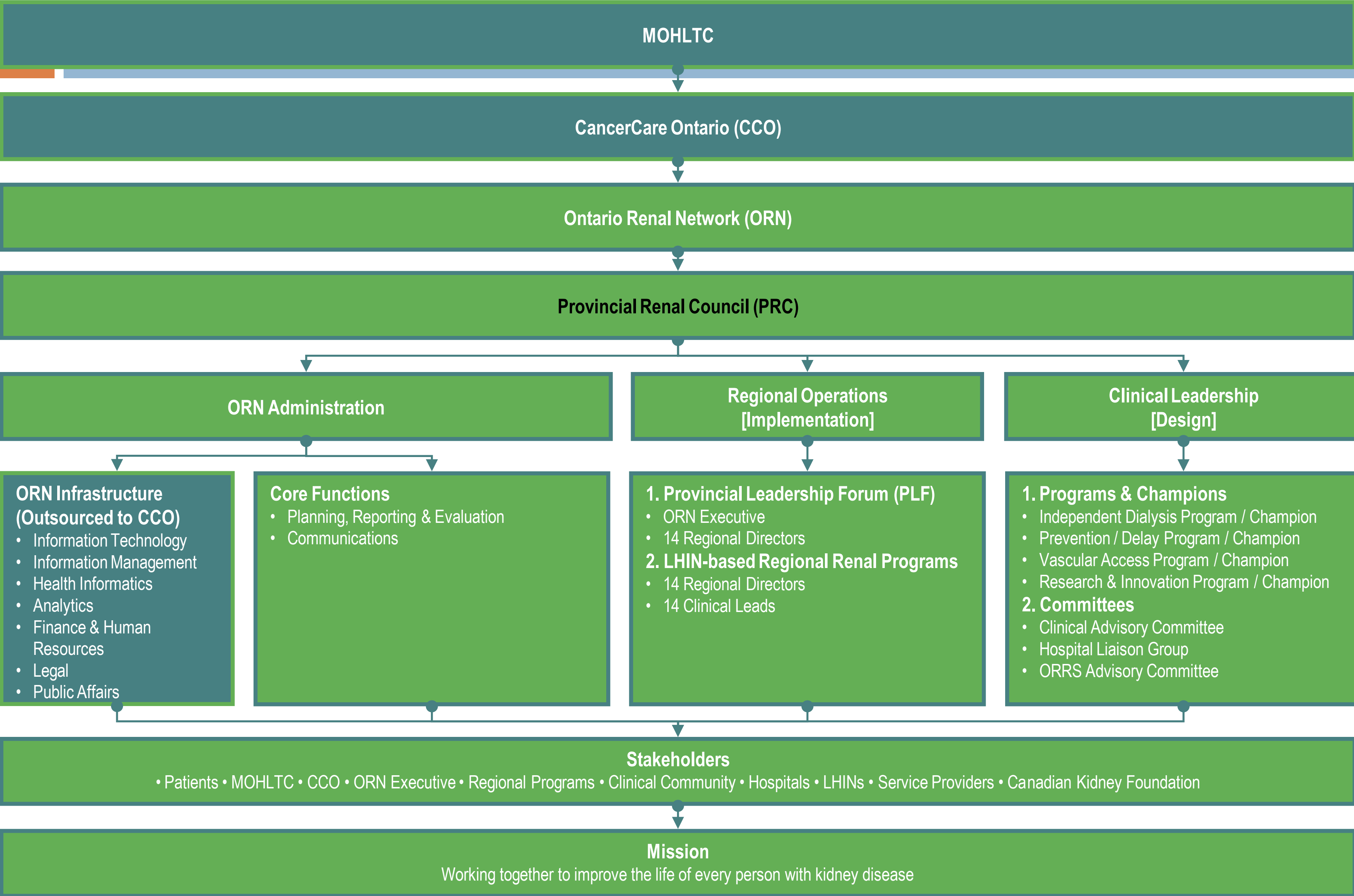
Ontario Renal Network (ORN)

- a renewed approach to the provincial Chronic Kidney Disease (CKD) program.
- ORN provides overall leadership and strategic direction to effectively organize and manage the delivery of renal services in Ontario in a consistent and coordinated manner.
- priorities include establishing consistent standards and guidelines for renal care and putting in place information systems to measure performance.

ORN

- establish regional renal programs that plan, coordinate and support quality improvement
- improve quality and equitable access for people living with renal conditions, along the continuum from early detection, education, prevention, to renal therapies, inclusive of end-of-life care
- promote home modalities where appropriate; and, support and encourage self care/self management and autonomy

8. ORN Accountability Framework



8. ORN

Regional Operations [Implementation]

1. Provincial Leadership Forum (PLF)
- ORN Executive
- 14 Regional Directors

2. LHIN-based Regional Renal Programs
- 14 Regional Directors
- 14 Clinical Leads

Clinical Leadership [Design]

- Independent Dialysis Program / Champion

1.Programs & Champions
- Prevention / Delay Program / Champion
- Vascular Access Program / Champion
- Research & Innovation Program / Champion

2. Committees
- Clinical Advisory Committee
- Hospital Liaison Group
- ORRS Advisory Committee

Regular Advice and Oversight

Committee	Who?	Why?
Clinical Advisory Committee	Seven Ontario Nephrologists	To provide advice regarding clinical practice & quality care
Provincial Leadership Forum	Fourteen Regional Directors	To provide advice regarding operational practice, system planning & quality care
Funding Model Reference Panel	CAC representatives, Hospital CFOs/Senior Administrators, Regional Directors, MOHLTC, ORN, Canadian Health Services Research Group	Framework validation
Funding Model Working Group	CAC representatives, Regional Directors, ORN, MOHLTC, Canadian Health Services Research Group	Framework development, based on advice from 3 groups above

Three Provincial Goals

GOAL 1
Prevent or delay the need for dialysis

GOAL 2
Broaden appropriate CKD patient care options

GOAL 3
Improve the quality of all stages of CKD care

- Represents the patient's journey – continuum of CKD care and control
- Framework for organizing and communicating our priorities and strategies
- Navigational aid to keep us 'on-track'

Program Priorities

GOAL 1
Prevent or delay the need for dialysis

- Early Identification for Progression Prevention
- Improved Pre-dialysis

GOAL 2
Broaden appropriate CKD patient care options

- Expand and Facilitate Access to Independent Dialysis
- Improve Access to Vascular Surgery
- Improve Appropriate Patient Level Funding

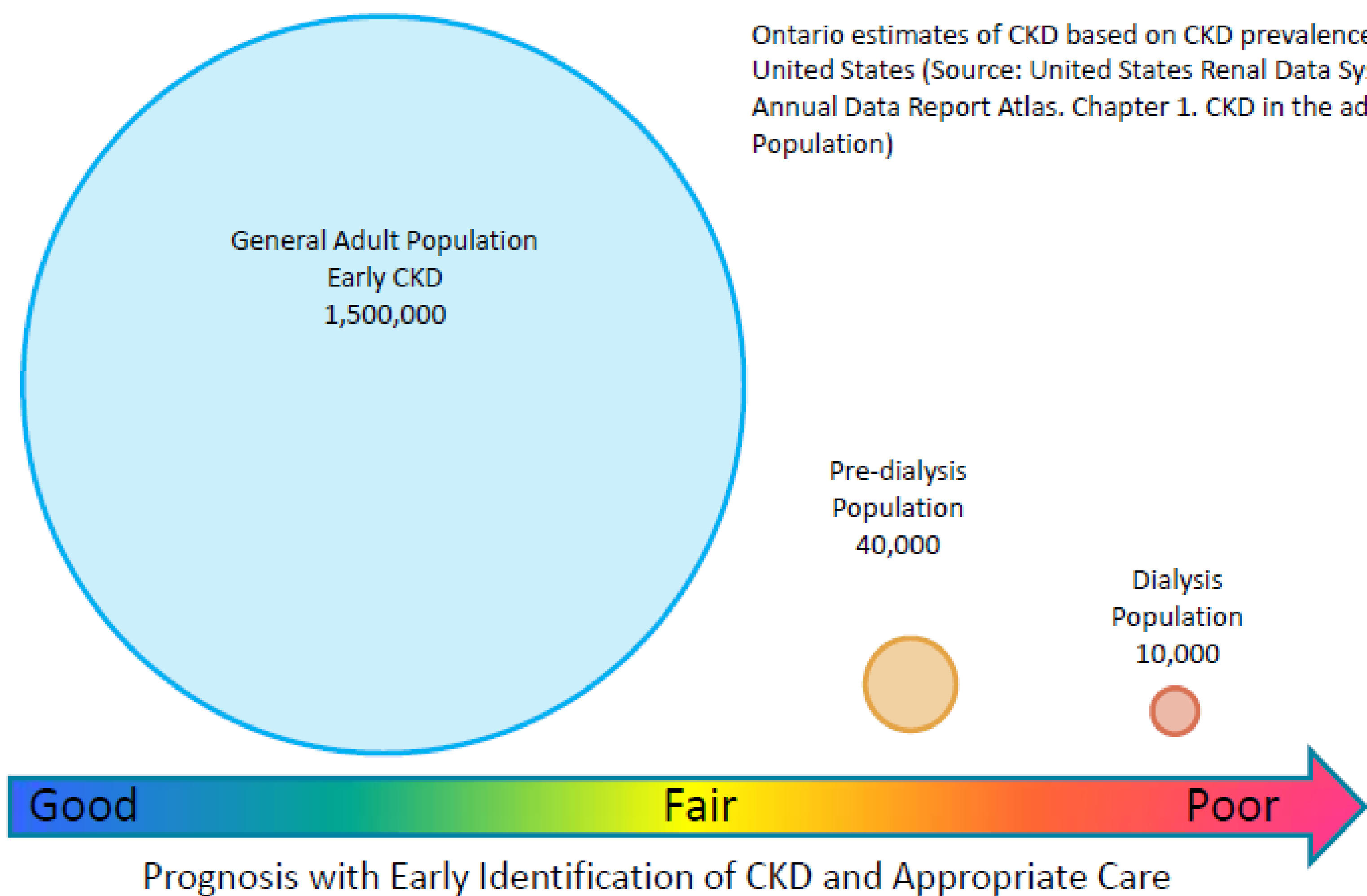
GOAL 3
Improve the quality of all stages of CKD care

- Improve Data Collection and Performance Reporting
- Improve Regional and Hospital Accountability
- Public Reporting
- Evidence-based Capacity Planning

Reducing End Stage Renal Disease (ESRD)

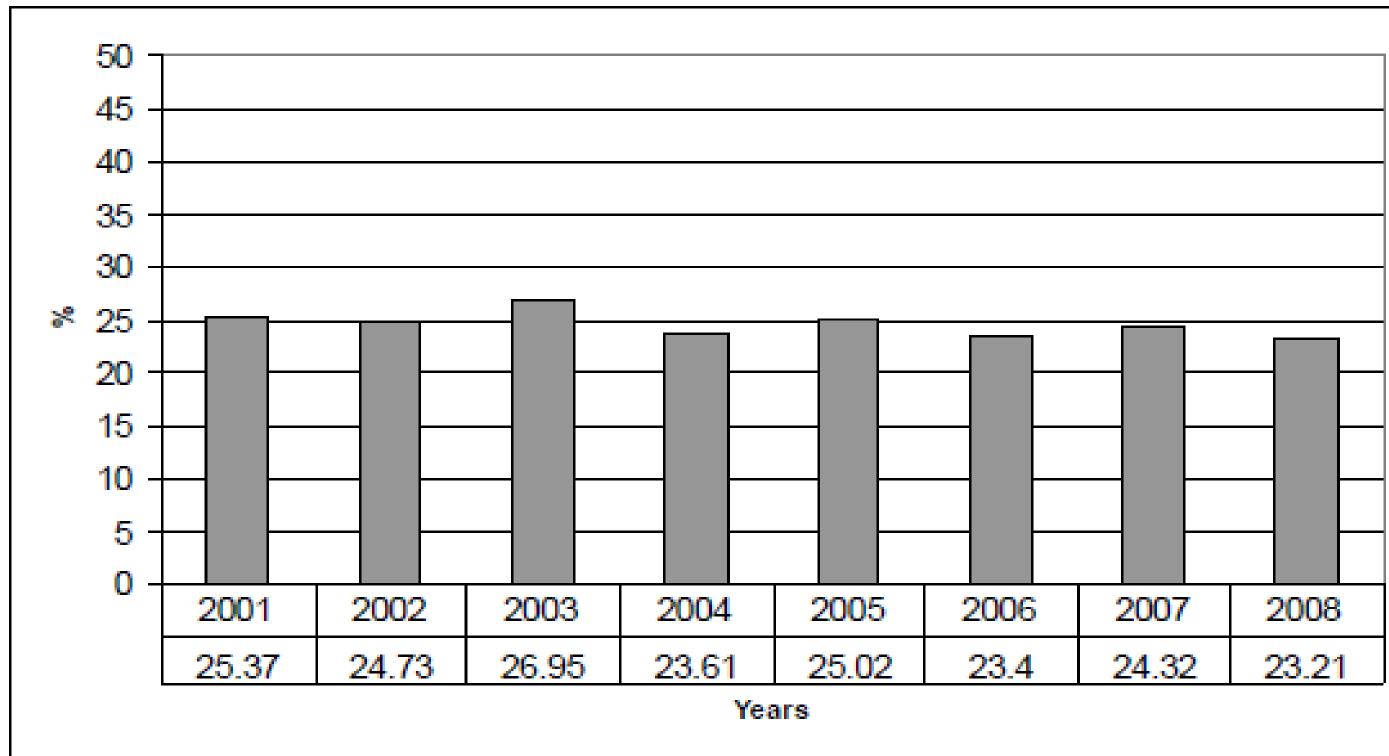
Areas of Greatest Impact

Ontario estimates of CKD based on CKD prevalence in the United States (Source: United States Renal Data System. 2009 Annual Data Report Atlas. Chapter 1. CKD in the adult NHANES Population)



How are we doing with Early Detection?

Proportion of Dialysis Patients who are "Crash Starts"*



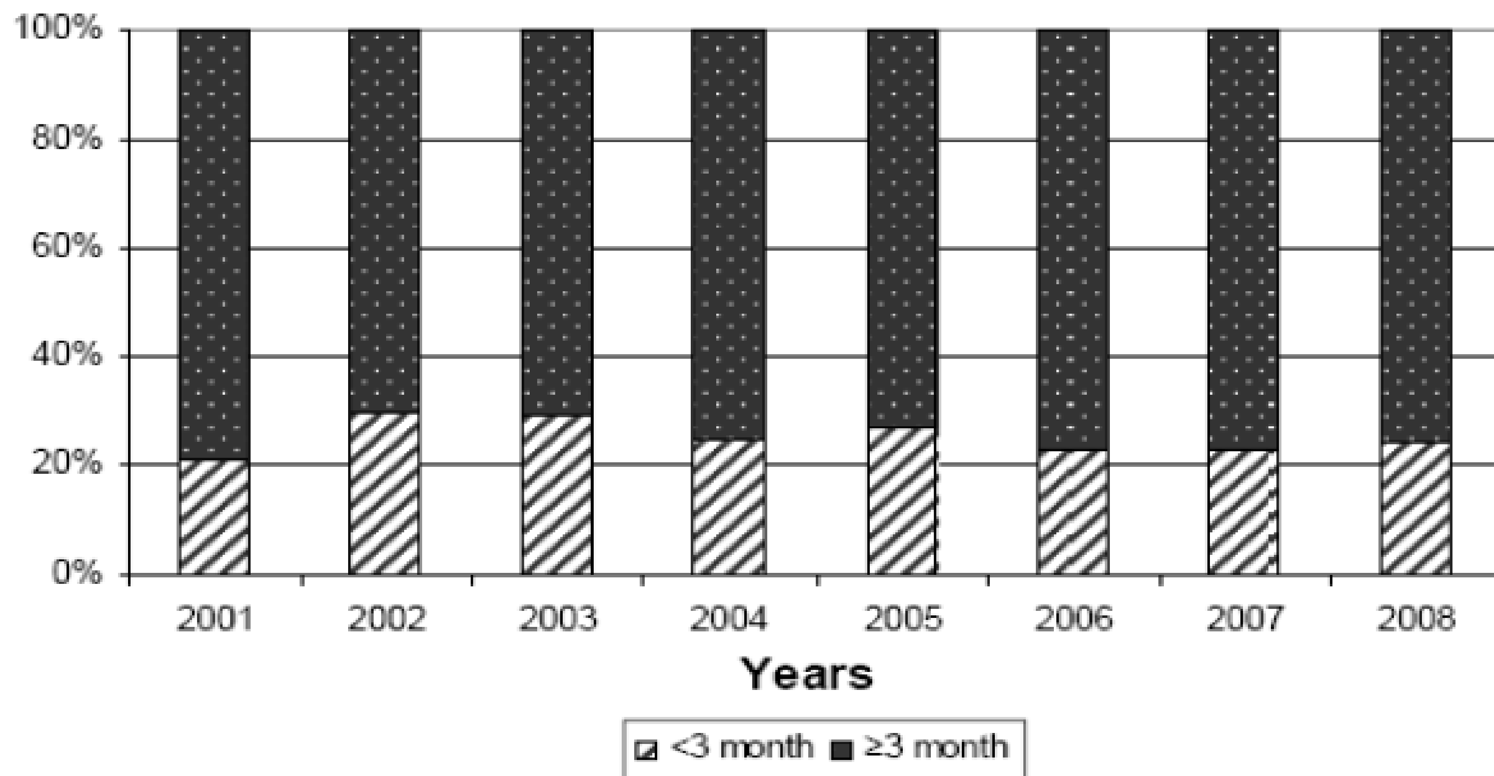
2001	2002	2003	2004	2005	2006	2007	2008
25.37	24.73	26.95	23.61	25.02	23.4	24.32	23.21

** 'Crash start' refers to patients who initiate dialysis without a permanent access and as in-patients*

Source: TRDR, 2008

How are we Doing with Pre-Dialysis Care?

Time with Nephrologist Prior to Renal Replacement Therapy Initiation



Source: TRDR, 2008

ORN Approach

- Primary care provider engagement strategy focused on evidence and tools to promote targeted screening of high-risk patients and promote earlier referral to nephrology care based on detection of cases at high-risk of progression
- Leverage other primary care quality improvement initiatives within Cancer Care Ontario and more broadly
- Leverage investments in IM and IT (OLIS, InScreen) provincially and in primary care practice to support better management of CKD in primary care settings
- Leverage existing systems to develop and populate quality reporting and support quality improvement, identification of service needs, policy change and research opportunities
- Work with primary care providers to establish a "shared care" model with nephrology

Strategic Enablers – Information Management & Systems

STRATEGIC ENABLER #3: INFORMATION MANAGEMENT & INFORMATION SYSTEMS

Goals:

1. Improve collection of quality data
   - Ensure requisite data of good quality is collected across all CKD-related health care providers across Ontario in a consistent manner that limits the data collection burden to providers
   - Ensure continual improvement in data quality
2. Improve measurement, reporting, and analytics
   - Ensure timely delivery of both data and information (data transformed through analytics) to the people who need it from both an operational and governance perspective
   - Ensure continual improvement in analytical capacity across the organization to increase the value of the data collected
3. Improve IM / IT capability
   - Ensure flexible and scalable systems, processes, and infrastructure are in place to enable the collection, analysis and delivery of data to internal and external stakeholders
   - Ensure the availability of quality data for the purposes of research and innovation, planning, funding and performance measurement

Quality data and information are vital to the ORN. They are the backbone of much of the ORN's work – informing network level decisions and informing MOHLTC decision making

AGE and MODALITY

	18-44	45-59	60-69	70-79	80+
B. Home PD	22%	23%	21%	20%	16%
C. Home HD - Daily/Nocturnal	14%	8%	3%	1%	1%
D. Home HD - IHD/Conventional	2%	2%	1%	2%	2%
E. Ambulatory In-centre HD – Daily	3%	3%	2%	2%	1%
F. Ambulatory In-centre HD – IHD	59%	63%	72%	75%	80%
	100%	100%	100%	100%	100%

*TRDR 2008

- Older dialysis patients are more likely to be on In-Centre Conventional Hemodialysis
- Younger dialysis patients are on more likely to be on Peritoneal Dialysis and Home Daily Nocturnal Dialysis

Strategic Actions

STRATEGIC ACTIONS #5: EXPAND/FACILITATE ACCESS TO INDEPENDENT DIALYSIS

Goals:

- Ensure a systematic approach to promoting and growing independence of care for appropriate patients leading to increased patient quality of life and potential long-term cost savings to the system

STRATEGIC ACTIONS #6: PREVENT OR DELAY THE NEED FOR DIALYSIS

Goals:

- Ensure systems, processes, treatment guidelines are established and aligned to facilitate detection of CKD to prevent or delay end stage renal disease (ESRD)

STRATEGIC ACTIONS #7: IMPROVE VASCULAR ACCESS

Goals:

- Ensure permanent vascular access is increased across the province with the end goal of reducing risk of infection and improving patient safety and outcomes leading to improved quality of life

STRATEGIC ACTIONS #8: IMPROVE RESEARCH AND INNOVATION IN RENAL CARE

Goals:

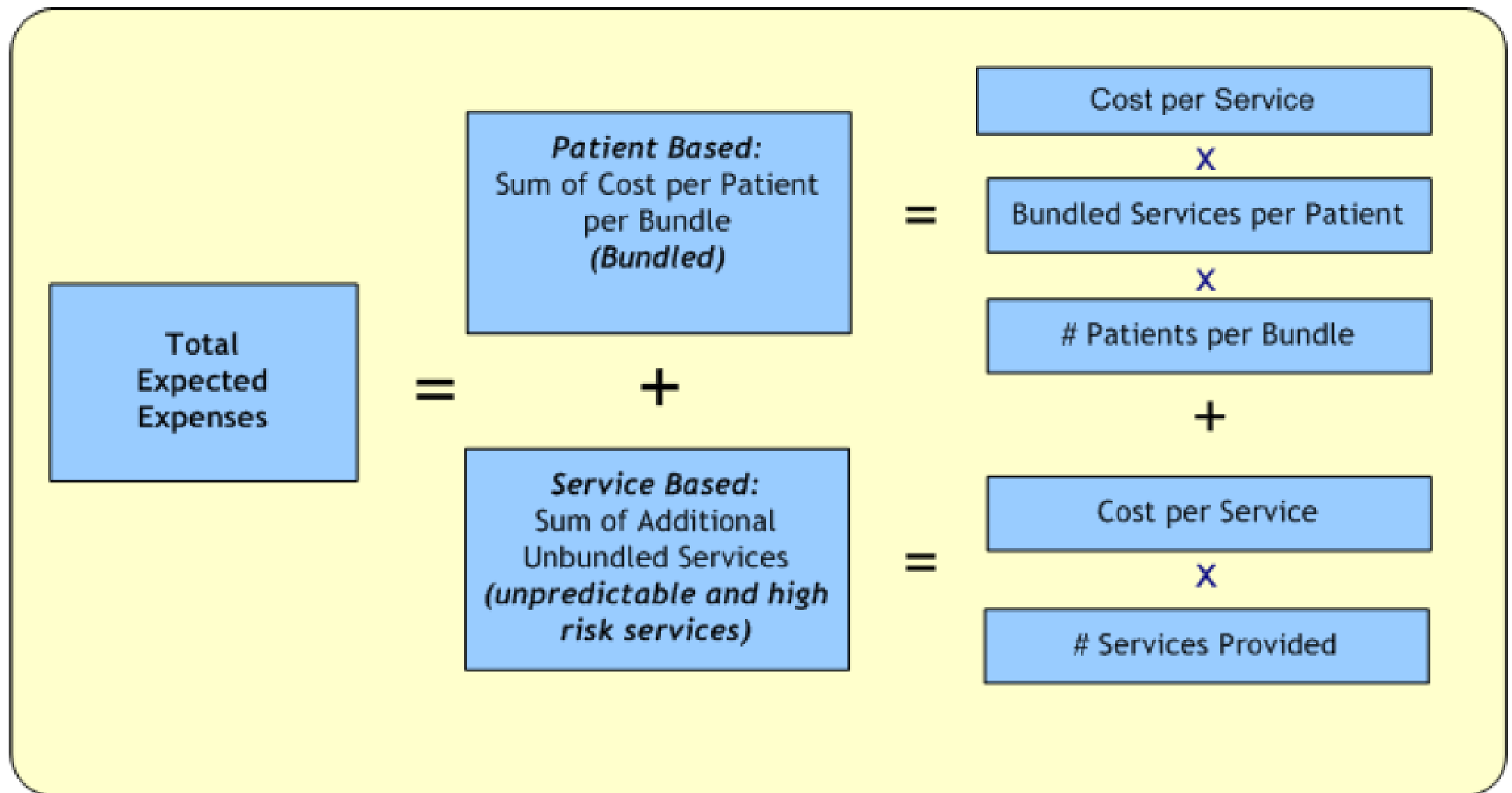
- Ensure and foster the development of a portfolio of work focused on research and innovation to improve the body of evidence around renal care which programs can leverage to ensure and improve patient care leading to improved outcomes for CKD patients

These feed directly into the ORN's strategic objectives of (1) Enhancing the access to CKD care, (2) Increased quality of care, and (3) Drive research & innovation towards excellence in renal care

Ontario **Renal Network**

New Funding Model for CKD in Ontario

Components of the New CKD Funding Model



Patient-based funding is not a novel concept…

To varying degrees, most OECD nations have adopted patient-based funding approaches for hospital services

1980s - US Centers for Medicare & Medicaid Services (CMS)

- ESRD funded via composite rate for a treatment bundle that accounts for population case-mix

2009 – BC Provincial Renal Agency

- Patient based funding model for dialysis and pre- dialysis services

2009 – Cancer Care Ontario

- Case based funding for systemic treatment and radiation therapy adjusted for case-mix

May 2010 – MOHLTC

- *Excellent Care for All* Legislation enacted (Bill 46) which committed to implementation of patient-based funding model for hospital services

Strategic Objectives

OBJECTIVE #1: ENHANCE THE ACCESS TO CKD CARE

Goals:

1. Expand / facilitate access to independent dialysis
2. Improve vascular access
3. Improve research and innovation in renal care

OBJECTIVE #2: INCREASE THE QUALITY OF RENAL CARE

Goals:

1. Prevent or delay the need for dialysis
2. Expand / facilitate access to independent dialysis
3. Improve vascular access
4. Improve research and innovation in renal care

OBJECTIVE #3: DRIVE RESEARCH & INNOVATION TOWARDS EXCELLENCE IN RENAL CARE

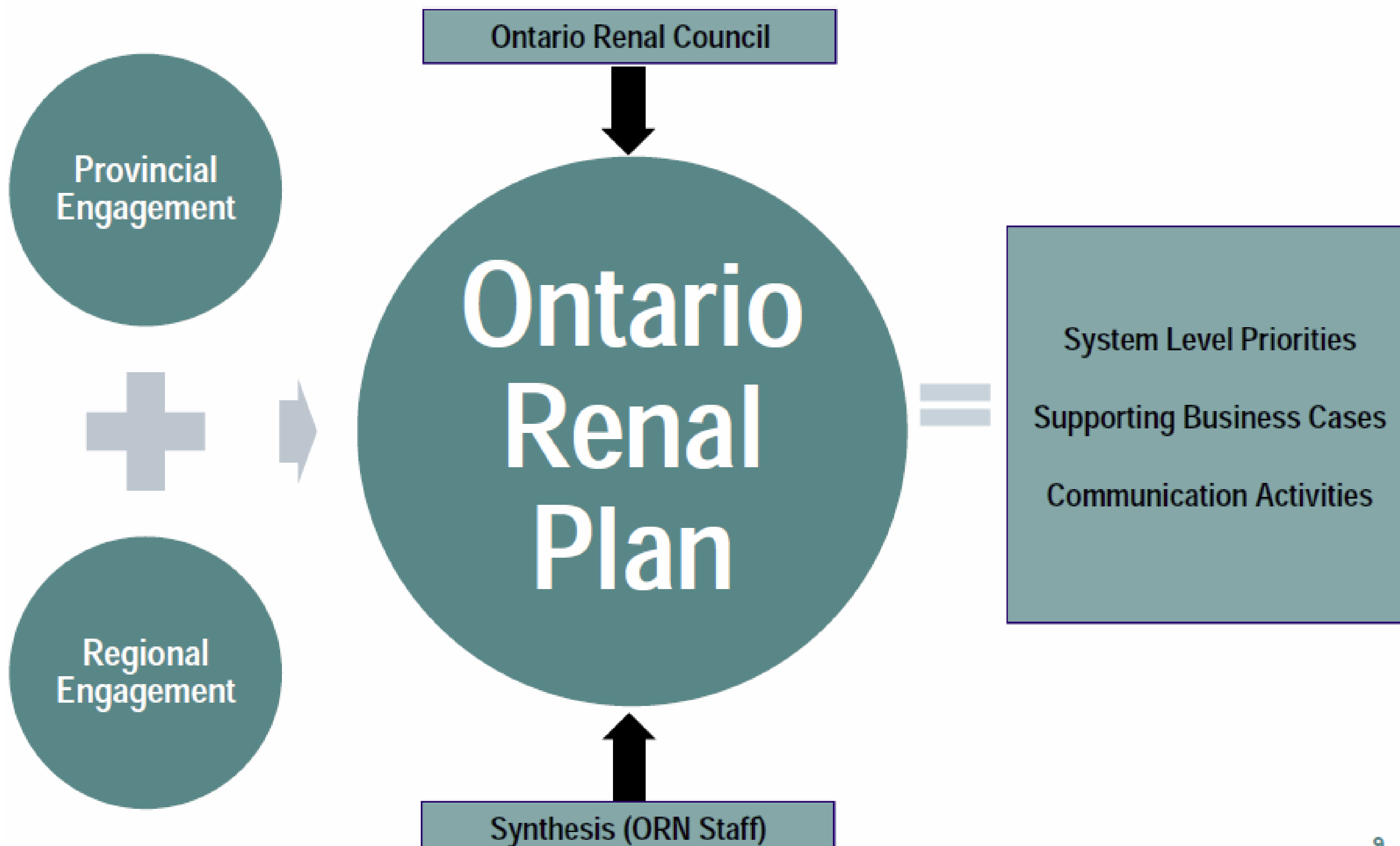
Goals:

1. Improve research and innovation in renal care

Ontario Renal Plan

Ontario Renal Council

Process – Provincial Level



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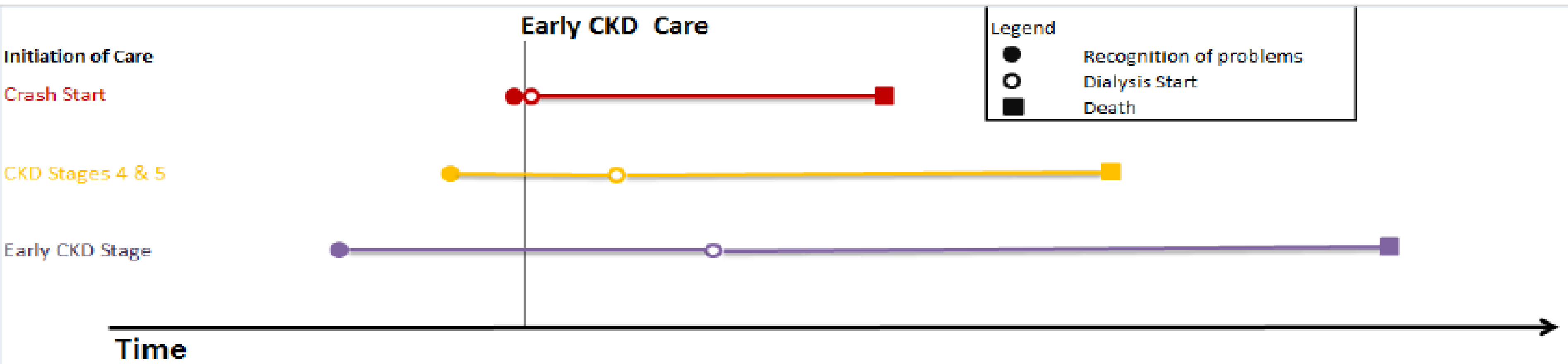
- Improve Regional and Hospital Accountability
- Public Reporting
- Evidence-based Capacity Planning

Questions

Early CKD Care: Patient Journey



- Early CKD care
  - **Slows down the progression** of the renal failure and prevents further complications among people with progressive renal insufficiency
  - Helps to prepare patients physically and mentally for the **appropriate renal replacement therapy**

"A comprehensive and well designed care plan should address several objectives, including early nephrology referral, patient education about ESRD and dialysis modalities, creation of permanent dialysis access and timely initiation of Renal Replacement Therapy" [1]

[1] Crowley, 2003, "Improving the Timing and Quality of Predialysis Care".

Is Age Associated with Bundle Choice?

Age and Bundle Choice

	18-44	45-59	60-69	70-79	80+
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*TRDR 2008

- Older dialysis patients are more likely to be on In-Centre Conventional Hemodialysis
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Benefits of Early Detection and Referral

- ✓ **Initiation of preventive strategies**
  - Blood pressure control
  - Renin-angiotensin system (RAS) blockade
  - Dietary education
- ✓ **Increasing "planned starts"**
  - Modality education
  - Body access
  - Out-patient dialysis initiation
- ✓ **Decreasing morbidity and mortality**
  - Management of anaemia
  - Management of bone & mineral disease
  - Prevention of cardiovascular disease