DRIVEN BY DATA, CONSENSUS & CONCERN

Health professionals
Hospitals
Government

Quality
Benefit
Access

Session Summary

- CCN quick facts
- Top 3 challenges
- State of evidence/consensus
- Impact of benchmarks
- Appendices

Public perceptions in the late '80s

- Patients dying waiting for cardiac surgery
- No objective way to assess patient urgency – therefore, access unequal
- Perceived lack of resources, no central data on availability at surgical centres
- No formal system to assist doctors

Sarnia woman died waiting for surgery MPPs told

Probe called into patient's 'tragic' death

Long waits for surgery threat to life, MD warns

Ontario doctor predict more heart patients will die waiting

Second heart patient dies as surgery delayed 9 times

Grief, frustration left in wake of man who died on waiting lis

2 deaths spa

Late 1980s

INVESTIGATION OF CARDIAC SURGERY
at St. Michael's Hospital
Toronto, Ontario

FINAL REPORT
FEBRUARY 15, 1989
(submitted with recommendations for St. Michael's Hospital and for Provincial Cardiovascular Services)

Investigation Team

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Investigators' Recommendations

- Expand Toronto triage program province-wide
- Gather standardized data based on objective rating system
- Establish provincial forum of providers
- Educate the public about care options, waiting and scheduling

CCN Role

- Access - prioritization, monitoring, facilitation
  - Regional Coordinators – point of contact
  - Clinical urgency score + Cardiac Registry
- Advice – clinically credible, broadly based
  - Consensus panels on specific issues
    - new technology, procedure rates, best practices
  - Linkages – e.g. ICES
- Forum for physicians, hospitals, Ministry
  - system responsiveness amidst rapid change

Current CCN Structure

- Independently incorporated in 2003
- Volunteer base:
  - Volunteer board, broad stakeholder representation
  - 3 standing committees: Clinical Services, Informatics, Regional Cardiac Care Coordinators
  - Working groups (standing and *ad hoc*)
- 17 member hospitals
- Supported by small Provincial Office team with budget of $1.3 million
- Funded by the MOHLTC

Cardiac System Growth

- 1990 – 9 surgical sites tracking over 8,000 surgical procedures
- 2004 – 17 cardiac sites tracking over 11,000 surgical, 50,000 catheterization and 16,000 PCI procedures
- 2007/08: 110,000 procedures predicted

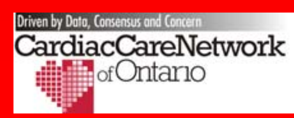
- Growth facilitated via CCN data and advice

Three Sectoral Challenges

- Note: challenges vary in magnitude and nature from province to province

In Ontario:

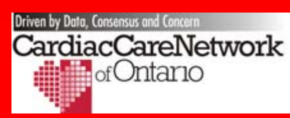
- Central resourcing lagging system growth
  - Out-dated IS/IT technology
- Differing interpretations of mandate between hospitals, clinicians, Ministry:
  - Monitoring/Reporting vs. Managing
- Resourcing vs. Regional Disparities



Levels of Evidence and Consensus

Ontario re. "acceptable wait times":

- Cath: validated RMWT model
  - Urgent, semi-urgent, elective
- CABG: Delphi consensus method
  - Urgent, semi-urgent, elective
  - Dissemination across Canada
- PCI: rapidly evolving literature
  - In-patient, Out-patient; CCN Consensus Panel Report, CCS, AHA



Levels of Evidence & Consensus

- ICDs: emerging literature
- Valves: paused CCN process

- Realities:
  - Validation requires robust data set
  - Evidence review takes resources
  - Consensus-building takes time
  - Research vs. Policy vs. Operations

Levels of Evidence and Consensus

- Essentials for Optimal Operations:
  - Ability to monitor access to care
  - Standardized data definitions
    - When does wait time start?
  - Timely data entry
  - Real-time data for decision-making
  - Quality verification
  - Training

Impact of Benchmarks

- Ontario has already adopted benchmarks for CABG and Cath
- Public reporting (website) of wait times by institution – sheds light on accessibility
- Institutional and clinician perfomance – prompts change
- Monitor progress over time
- Is it possible to have national benchmarks –who sets them? Govt? Prof. Societies?

Coronary Artery Bypass Surgery (CABG) Statistics for Adult Ontario Patients

Hospitals (Grouped by Geographic Region)	Cardiac Surgery: Patient Cases Completed (April–June 04)							Patients Waiting Monthly Average (Apr-Jun)
	Number	Emergency + Urgent *RMWT: 0-14 days**		Semi-Urgent *RMWT: 15-42 days**		Elective *RMWT: 43-180 days**		
	Monthly Average	Median Wait (days)	Surgery Within RMWT*	Median Wait (days)	Surgery Within RMWT*	Median Wait (days)	Surgery Within RMWT*	
All Hospitals	945	3	78%	7	82%	25	88%	969
High	163	8	93%	15	97%	63	100%	196
Low	41	1	50%	6	62%	10	56%	23

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Surgery Within Recommended Maximum Waiting Time (RMWT) – Ontario Residents

RMWT

Urgent: 0-14 days

Semi-Urgent: 15-42 days

Elective: 43-180 days

Questions and Answers

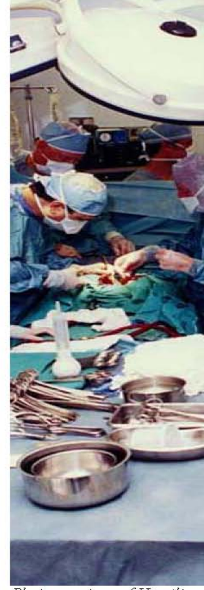

Photo courtesy of Hamilton Health Sciences

Key information

For patients needing general information on how the cardiac-care system works:

Patient brochure Fall 2004 English Version
French Version

For physicians and patients in the referral process for diagnosis, treatment and rehabilitation:

Ontario's cardiac centres

Hospital waiting times for:
- cardiac catheterization
- angioplasty
- cardiac surgery

Cath-referral form

For health-care planners and managers interested in CCN's development or in provincial planning for advanced cardiac services:

CCN case study *(in PDF format for Adobe Acrobat Reader -- click here for more information about Adobe Acrobat Reader)*

Consensus-panel reports

CCN's vision, mission, values and roles

Site Contents

About CCN
Ontario's Cardiac Centres
Patient Access to Care
What's News
Contact CCN
For CCN Members
Cardiac Rehabilitation
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Links

CCN is an associate member of the

Canadian Health Network
Réseau canadien de la santé

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Appendices

Ontario's Cardiac Care System

Patients

Cardiac Care Network

Regional Coordinators

Referring Doctors

Hospitals & doctors providing advanced cardiac services

Cardiac Cath/PCI Referral Form (revised June 24, 2004)

REQUEST TYPE
LHC LHC/RHC LHC±PCI PCI Other

REQUEST DATE: (yyyy/mm/dd)

INDICATION
CAD – stable ACS/Acute MI Valvular heart disease
Congenital Other ____________
Specify

Referring MD's Estimate of Urgency ***Check all that apply***
Post Cath Emergent - Primary PCI Emergent - Rescue PCI (lytic within past 24 hrs)
Emergent - Facilitated PCI Emergent - Cardiogenic shock
Urgent (while still in hospital) Urgent (within 2 weeks) Elective
Important: Notify the Cath/PCI centre of any change in the patient's condition.

Brief History

MEDICATIONS
ASA
Beta blocker
Calcium channel blocker
ACE inhibitor/ ARB inhibitor
Statin
Other lipid-lowering agent
Metformin
Plavix/ticlopidine
IV unfractionated heparin
LMW heparin
IV Nitrate

MOST RECENT LIPID PROFILE DATE:
Total cholesterol _______ mmol/L Triglycerides________ mmol/L
LDL cholesterol ______ mmol/L HDL cholesterol ______ mmol/L
NO RECORD

CCS ANGINA CLASS
0 I II III
IV-A IV-B IV-C IV-D
Duration of current class of symptoms:

FUNCTIONAL IMAGING
Done Not done Unknown
If done, specify:
Low risk High risk

NYHA HEART FAILURE
I II III IV

REST ECG
Ischemic changes at rest?
Yes No Uninterpretable

EXERCISE ECG
Done Not done Unknown
Risk: Low High Unknown

LV FUNCTION
Echo Cath Other Not done
I (≥50%) II (35-49%) III (20-34%)
IV (≥50%) Unknown

RECENT OR PREVIOUS MI
Yes No Unknown STEMI NSTEMI
<24 hrs <1 week ≤3 months >3 months
Unknown

RESEARCH Currently enrolled in a research trial? Yes No Unknown

CORONARY ANATOMY

Prox LAD ____% Other LAD ____% Diagonal ___% LCx ___% OM ___%
RCA ___% SVG1 ___% SVG2 ___%SVG3 ___% LIMA ___%
Duke Severity Score _______ (1-14 see reverse for key)

PCI TARGET VESSEL(S)
Target 1 _____ %stenosis _____ Target 3 _____ %stenosis _____
Target 2 _____ %stenosis _____ Target 4 _____ %stenosis _____

URS Score

PCI DISPOSITION
Accepted Declined Functional assessment requested CABG recommended

Patient Name:
Last First Middle
Male Female DOB (yyyy/mm/dd):
Health card #:
Ontario Unknown Other
Chart #:
Address:
City: Postal Code
Province: Tel: ( )

Present Location:
Home Hospital name:
ICU/CCU Ward name:
Translator? No Yes Language:

Referring MD name:

Cath/PCI Physician requested:
1st available Dr(s).:

COMORBIDITY ASSESSMENT
Creatinine: ________ µmol/L
Pending Not done
Dialysis? No Yes
Diabetes? No Yes
If yes, treatment:
Insulin Oral hypoglycemics Diet
No Yes ? OTHER
Hypertension
Hyperlipidemia
Severe Carotid Stenosis (>70%)
Previous Stroke or TIA
Peripheral Vascular Disease
Varicose Veins
Severe COPD
Previous CABG
LIMA
Previous PCI
On Coumadin Ht: Wt:
On IIb/IIIa Inhibitor Ht: Wt:
Contrast Allergy
Possible LV Thrombus
Weight >140 kg?
Smoking

Fax Cath/PCI Report to:

Person/organization:

Fax number:

Signature:

Date (yyyy/mm/dd):

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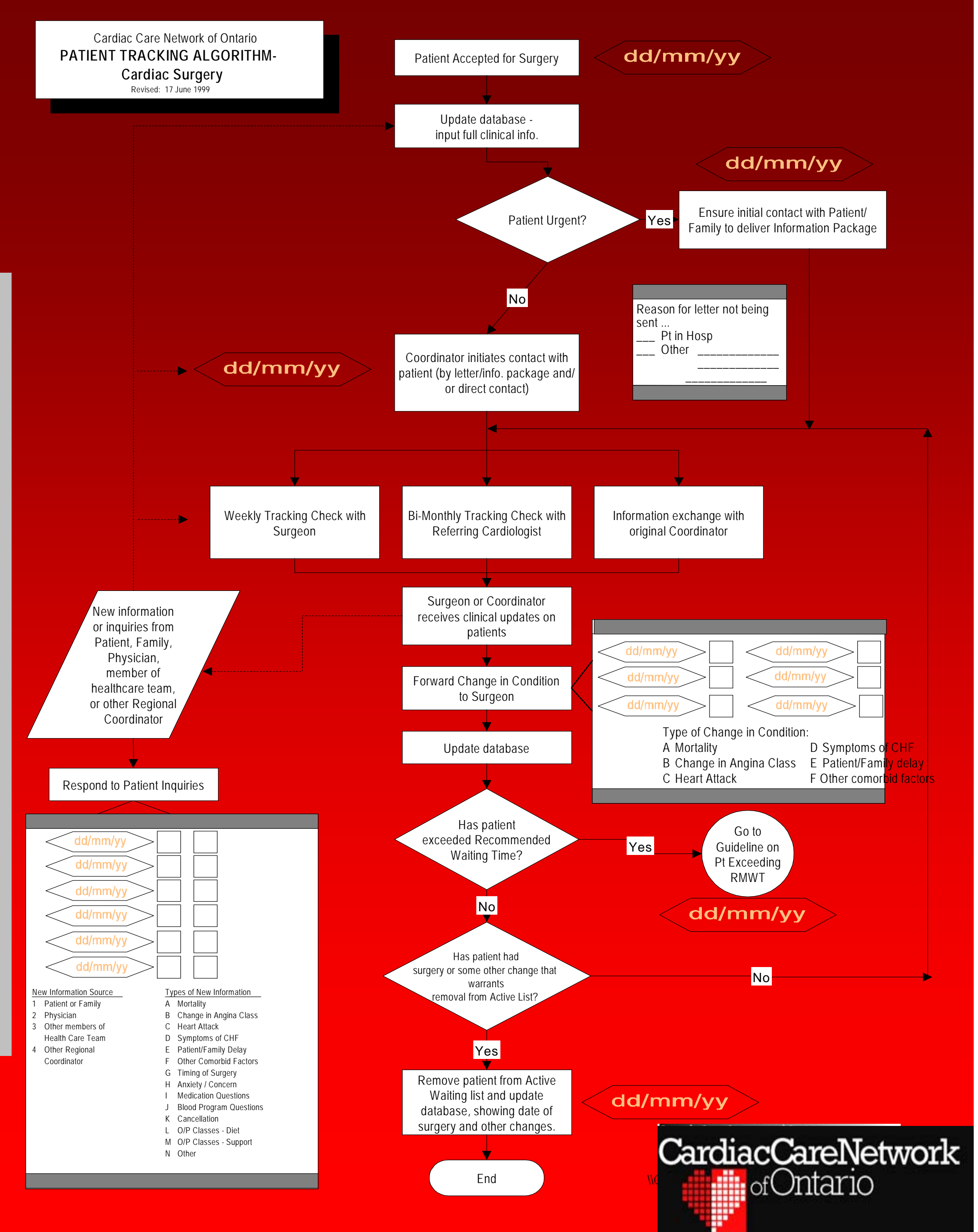
Complexity of monitoring and facilitating access

Physicians with the Regional Cardiac Care Coordinators

- identify and accept referral
- determine urgency score
- prioritize on list
- contact, educate
- document and respond to changes in status
- revise urgency score
- remove from list
- time frame hours to months

>80,000 patients/yr



Data Collection

Who?

- RCCCs and/or data analyst

What?

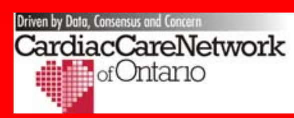
- Cath, PCI, Surgery
- Demographics, clinical, urgency, procedural outcomes, wait dates, wait list mortality

When?

- Real time at hospitals, nightly to CCN repository

How?

- Wait List registry and management system



Data Management

- Informatics Committee oversees quality, timeliness and relevance
- Standard data definitions
- Monthly data verification
- Periodic quality audits
- Wait list system decision making
- On-going analysis

Sample Data Definition - LVEF

Grade based on cath data (radiology report or cath lab report) when a cath with left ventriculogram was performed. Order of priority for sources: (1) left ventriculogram; (2) echo; (3) thallium; (4) estimate in OR (direct vision); or (U) unknown.

1: >=50%
2: 35%-49%
3: 20%-34%
4: <20%
U: unknown

Wait Time Indicators

- Median wait time from acceptance to procedure
- Patient treated within RMWT
- Wait List Mortality
- Number of cancellations and reasons

CABG
Urgency Rating Score Calculator

- A CCS CLASS
- B VESSEL DISEASE
- C LEFT VENTRICULAR FUNCTION
- D ISCHEMIC RISK: ESTIMATED FROM NON-INVASIVE TESTING
- E CO-MORBIDITY
- F RECENT MYOCARDIAL INFARCTION
- G PREVIOUS CABG SURGERY

Median Cardiac Surgery Wait Times

Days

90
80
70
60
50
40
30
20
10
0

Elective

Semi-Urgent

Urgent

94 95 96 97 98 99 '00 '01 '02 '03 '04

Quarter (3-month period) of Calendar Year

Note: Includes Ontario residents only

Wait List Mortality for Cardiac Surgery

Tenths of 1%

1.0
0.8
0.6
0.4
0.2
0.0

91/92 92/93 93/94 94/95 95/96 96/97 97/98 98/99 99/00 00/01 '01/02 '02/03 '03/04

Cardiac Surgery

Patients Waiting and Cases Completed

Patients (Monthly Average) including non-Ontario

2000
1500
1000
500
0

Patients Waiting

Cases Completed

89 90 91 92 93 94 95 96 97 98 99 '00 '01 '02 '03 '04

Quarter (3-Month Period) of Calendar Year

Note: Includes Ontario (97%) and non-Ontario (3%) residents

Cath Cancellations April 2003

Pt. Not Reach - Pref.
4%
No OR/lab time
2%
No Ward Bed
1%
Misc.
1%
Pt. Not ready-medical
5%
More Urgent Patient
5%
Mostly SARS Related
82%

Total Cancellations: 569

Accountabilities

- CCN-Hospital Participation Agreements
- Data Sharing Agreements
- Governing structure evolution
- CCN-MOHLTC Accountability Agreement
- Data talks – hospital, clinician, and Ministry reviews … transparency
- Peer & Public pressure – wait list data
- Website publication of CCN Reports
- RCCC and data staff – dual accountability

Sharing Experience

- Liaise with other registries and wait list organizations including:
  - Ontario Joint Replacement Registry
  - Cancer Care Ontario
  - Saskatchewan Surgical Wait List System
  - Reseau Cardiologie de Quebec
  - ICONS, APPROACH
  - Western Canada Wait List Project

Future Directions

- Centralized web-based data capture; real time reporting and usage
- Point-of-referral data capture
- Expansion of registry to include arrhythmia; continuum of cardiac care
- Improved access and reduced regional wait time variation
- Collaboration and shared vision with Provincial and Federal Wait Time initiatives

Current challenges and opportunities

CCN has a limited mandate for . . .

- True system planning and coordination
- Active wait list management
- Broad outcomes monitoring

Unrealized wait time reductions

Regional disparities in access

Provincial average RMWT 75%

Active mgmt | Wait list monitoring

Cath / PCI / CABG | ICD's

Pre | Hospital-based care | Post

Regional coordinators, data clerks

Shaky IT Infrastructure

Optimal cardiac wait time strategy

In an environment of . . .

- Appropriate, efficient, high quality care
- Advice on best practices, new technology, etc
- Outcomes monitoring and reporting
- Coordination of planning

Reduced wait times

Efficient & equitable access
100% within RMWT

Active wait list mgmt

Full spectrum of relevant procedures

Continuum of cardiac care

Regional coordinators, data clerks

Solid IT Infrastructure

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