

# A Discussion About Scientific Rigor using Administrative Health Care Data

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# ***Presentation Outline***

- ✓ Manitoba Centre for Health Policy
- ✓ Indicators of Nursing Home Quality Care
- ✓ Defining Frequent Users of Emergency Departments

## ***Key Messages***

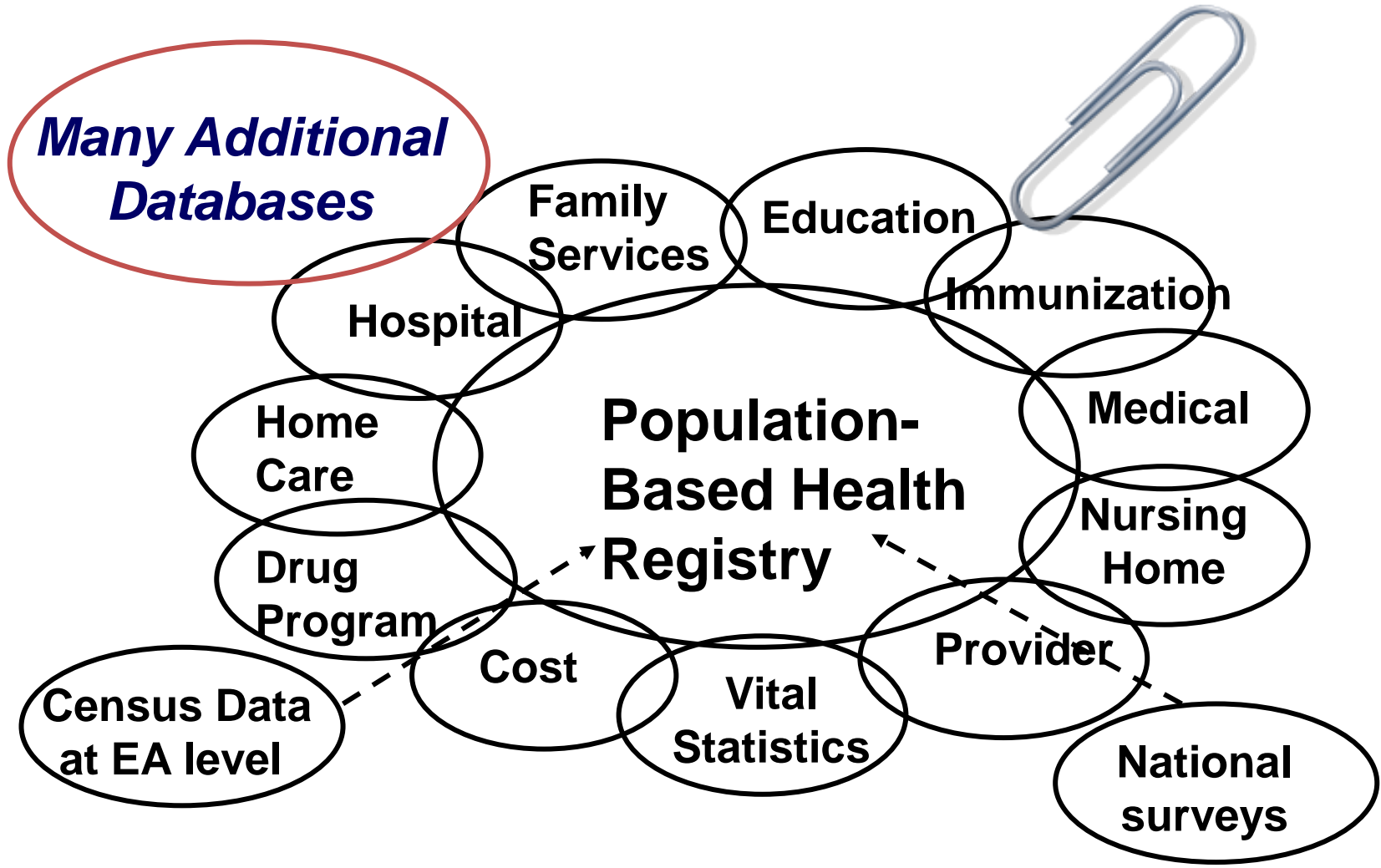
- ✓ There is no easy button
- ✓ An ounce of prevention is worth a pound of cure
- ✓ Keep and build positive relationships
- ✓ No data are perfect

# *Manitoba Centre for Health Policy (MCHP)*

- ❖ University of Manitoba: Department of Community Health Sciences, Faculty of Medicine
- ❖ Anonymous administrative health claims database
- ❖ 5 “deliverables”/yr on contract with Manitoba Health
- ❖ *More than half our funding from peer-reviewed granting agencies (CIHR etc.)*
- ❖ <http://mchp-appserv.cpe.umanitoba.ca/deliverablesList.html>

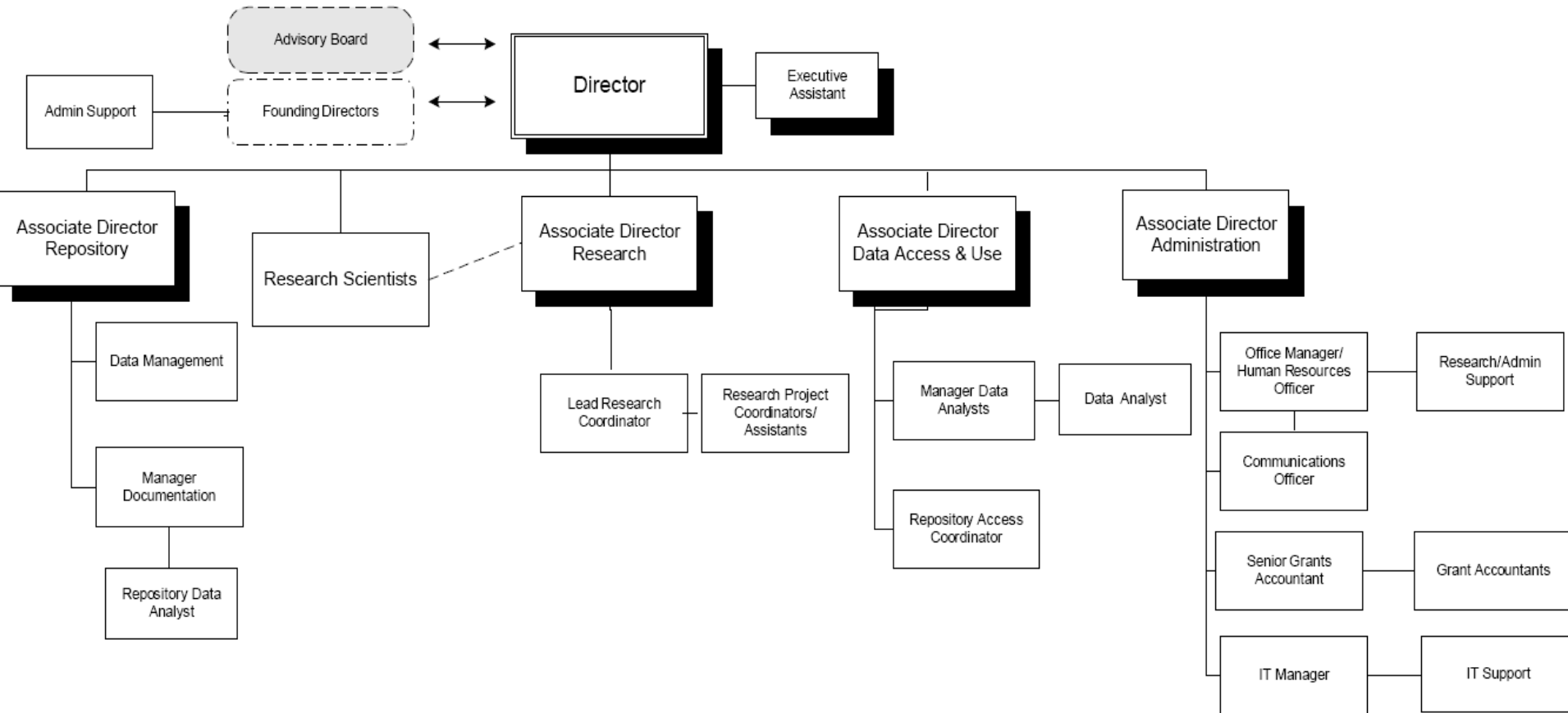


# Anonymous administrative health claims data



# Manitoba Centre for Health Policy

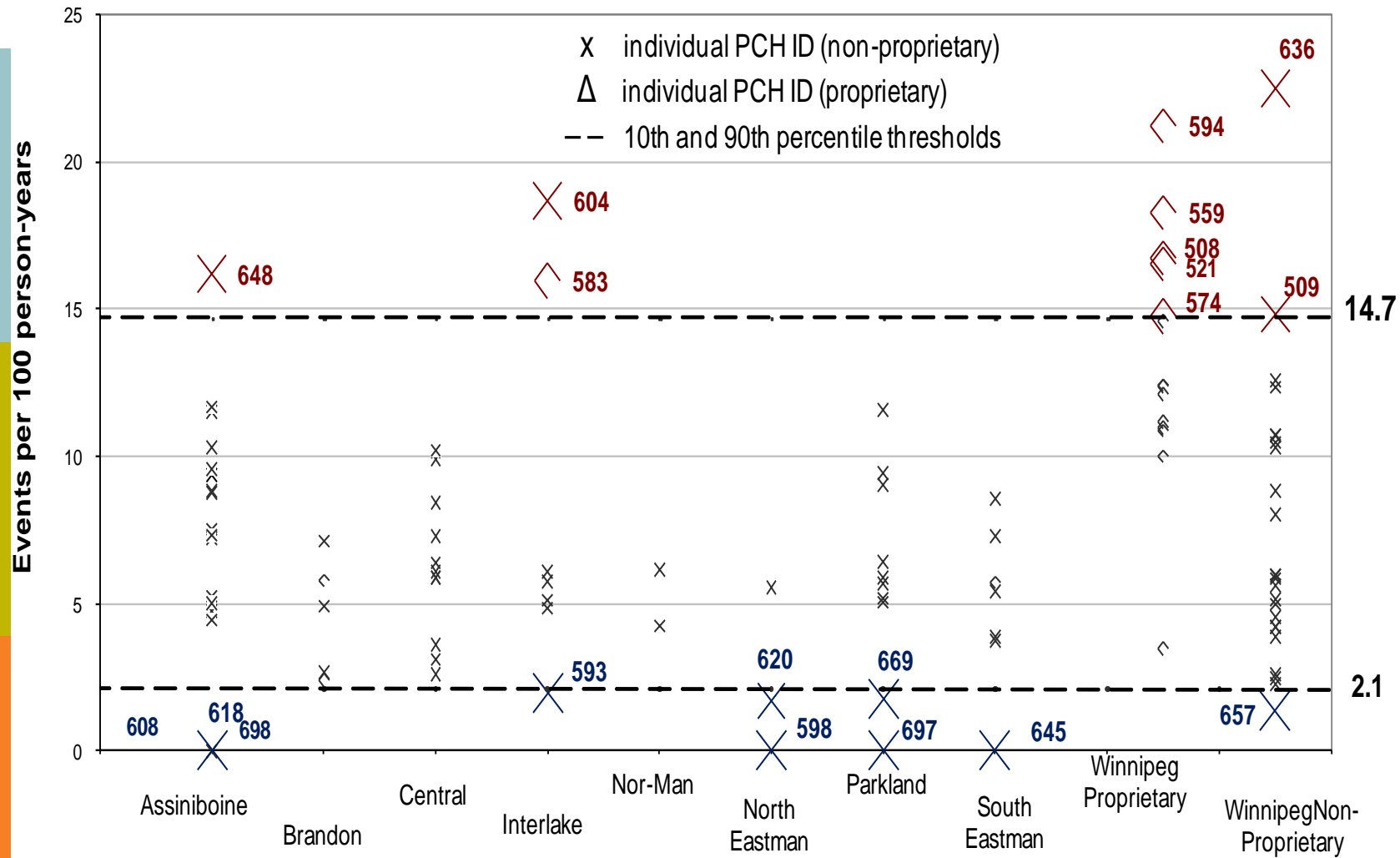
November 1, 2010



# *Indicators of Nursing Home Quality Care*

### Figure 6.10. Rates of Diagnosed Skin Ulcers, by PCH, by RHA, 1999/00 - 2003/04

Events per 100 person-years, adjusted for PCH resident age, sex, and level of care



## ***Typical Reactions (usually in order)...***

1. You must have done something wrong \*#!^!!!
2. We are different!
3. Why are you picking on us?

## ***Preparation...***

1. Selection of outcomes (Quality Indicators)
2. Know Your Data (Measurement issues)
3. Making Fair Comparisons
4. Presenting Your Results

# *Selection of Quality Indicators*

Bed sores  
Hip fractures  
Falls  
Non-hip fractures  
Respiratory infections  
Fluid & electrolyte imbalances

1. Look to the literature
2. Involve Key Stakeholders early & often
  - Selection of Advisory Group (Geriatricians; Nursing Home Medical Directors; Key planners)
  - Meetings with Nursing Home Medical Directors
3. Know your data
  - What can we realistically measure?

# *Measurement Issues - 1*

Bed sores  
Hip fractures  
Falls  
Non-hip fractures  
Respiratory infections  
Fluid & electrolyte imbalances

## ICD codes

- A)** 4 digit (hospital abstract) versus 3 digit (707; medical claims)
  - 707.0: Decubitus ulcers (pressure sores)
  - 707: Pressure sores plus poor nutrition, neurodegenerative diseases.
  
- B)** Where possible, not just counting
  - Urinary Tract Infections (no laboratory results)?
  - Hip Fractures: use of tariff codes indicating reduction or replacement.
  
- C)** Acknowledge limitations
  - “Hospitalized Falls”: E codes reported in hospital abstract only.
  
- D)** New events versus follow-up care
  - 90 to 365 day lapse times during which ICD codes not counted.

## Hip Fractures

... were counted using the ICD-9-CM codes 820 (fracture of the neck of the femur) and 821 (fracture of other and unspecified parts of the femur) using both the medical claims data and the hospital abstract data...

...

only when select tariff codes, denoting a reduction of the hip or a prosthetic replacement, were also reported within a two-week period of the hip fracture diagnostic claim...

...

a 365-day period of time was used to differentiate between follow-up care provided for the same hip fracture and separate hip fracture events...

...

1,231 hip fractures were counted for 1,216 PCH residents; 98.8% of these residents experienced only one hip fracture during the five-year study period and 1.2% of these residents experienced two hip fractures during this time.

# Making Fair Comparisons

*(We are different)*

Hip Fractures	Non-Hip Fractures	Accidental Falls	Skin Ulcers	Respiratory Infections	Fluid & Electrolyte Imbalances
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## **Nursing Home factors**

*Facility Type (Ref: non-proprietary)*

Proprietary

*Staffing levels (hours/resident-day)*

Nurses

Health Care Aides

*Volume (# of contacts/year at risk)*

Hospital contacts

Physician contacts

## **Resident factors**

*Age (Ref: 0-74 years)*

75-84

85+

*Resident Frailty (care level 1, 2)*

Care Level 3

Care Level 4

*Presence of Dementia*

*Co-morbid chronic diseases*

*Timing (Ref: all other times)*

Proximity to admission or death

# Making Fair Comparisons

(We are different)

	Hip Fractures	Non-Hip Fractures	Accidental Falls	Skin Ulcers	Respiratory Infections	Fluid & Electrolyte Imbalances
<b>Nursing Home factors</b>						
<i>Facility Type (Ref: non-proprietary)</i>						
Proprietary	1.4	1.3	ns	1.9	1.4	1.6
<i>Staffing levels (hours/resident-day)</i>						
Nurses	ns	ns	ns	ns	ns	ns
Health Care Aides	ns	ns	ns	0.7	ns	ns
<i>Volume (# of contacts/year at risk)</i>						
Hospital contacts	ns	ns	2.0	ns	ns	2.9
Physician contacts	**	ns	**	ns	ns	1.02
<b>Resident factors</b>						
<i>Age (Ref: 0-74 years)</i>						
75-84	1.6	ns	1.3	1.1	1.2	1.3
85+	1.6	1.3	1.3	1.4	1.3	1.4
<i>Resident Frailty (care level 1, 2)</i>						
Care Level 3	0.8	0.9	0.9	1.1	ns	ns
Care Level 4	0.4	0.5	0.4	1.5	ns	ns
<i>Presence of Dementia</i>	1.5	1.2	1.3	ns	0.9	ns
<i>Co-morbid chronic diseases</i>	1.3	1.4	1.4	1.5	1.4	1.7
<i>Timing (Ref: all other times)</i>						
Proximity to admission or death	34.8	17.5	22.5	9.4	6.6	14.2

# Presenting Your Results (KT)

## Building the Case for *Quality*

AN IMPROVEMENT STORY

January 2008

## TRANSFORMING DATA INTO QUALITY IN MANITOBA



Canadian Health Services Research **Foundation**  
**Fondation** canadienne de la recherche sur les services de santé

1565 Carling Avenue, Suite 700, Ottawa, Ontario K1Z 8R1  
Tel: 613-728-2238 • Fax: 613-728-3527



# ***Defining Frequent Users of Emergency Departments***

# The Media...

*Not Post Sept 15/05*  
**Elderly wait twice as  
long in emergency**  
*Waiting*

**ER doc shortage hurting**

**Patients leave ER without seeing MD**

**Most ER visits are for non-emergencies, study says**

**Gimli MDs threaten to withdraw ER services**

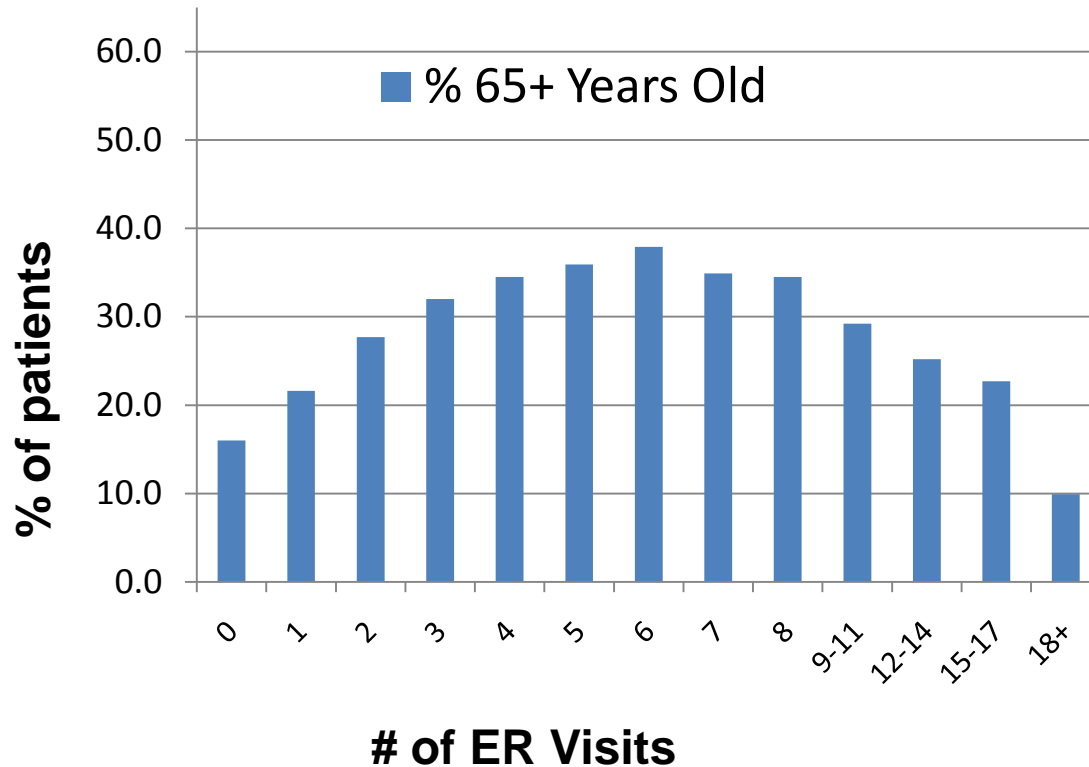
## *The Good...*

- ✓ **Computer generated CTAS scores (non-urgent, urgent, etc).**
- ✓ **Great disposition data.**
- ✓ **Data cross validates very well.**

## *The Not-so-Good...*

- ✓ **Lack of physician generated diagnostic codes.**
- ✓ **Poor arrival time data.**
- ✓ **Inconsistent wait versus care time data.**
- ✓ **Removal of scheduled visits.**

# Defining Frequent Users



**2.4% of users**

**13.5% of visits**

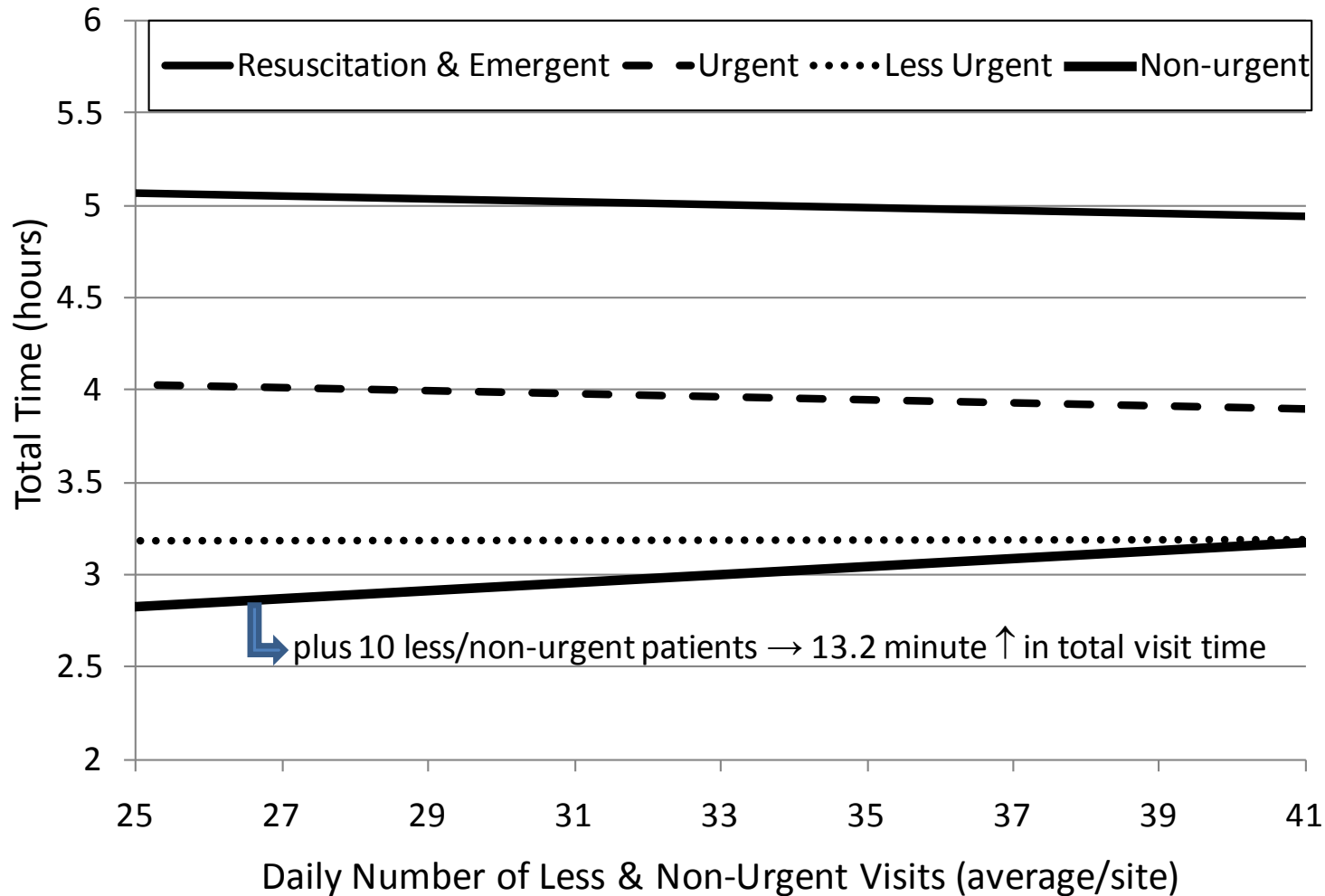
# Proportion of ER Users with Select Person- and Visit-level Characteristics, by frequency of ER use, Winnipeg, 2004/05

	Frequency of ER Use (visits/year)			
	Single	2 - 6 visits	7+ visits	18+ visits
<b>PERSON-LEVEL</b>				
Living in Winnipeg Core	15.6	20.4	36.5	56.5
7+ visits in previous year	0.1	1.1	22.6	70
2+ Mental illness diagnoses*	12.2	22.2	53.7	84.8
<b>VISIT-LEVEL</b>				
Less / Non urgent	41.4	36.3	38.8	51.7
Arrive by Ambulance	18	21.8	34.7	45.3
Leave without seen	5.6	5.7	9.2	14.1
Visit Duration 6+ hours	22.5	28.3	34.2	31.3



\* Past diagnosis with anxiety, depression, dementia, personality disorder, Schizophrenia, substance abuse

# Median Daily Visit Duration by Number of **Lower Acuity** Visits, Select ER Sites, Winnipeg, 2004/05



# Frequent users clogging ERs: report

**A small number of inner-city Winnipeggers make 14 per cent of all emergency-room visits, says a major study released Friday by the Manitoba Centre for Health Policy at the University of Manitoba.**

**The report said 2,400 adults visit the ER more than once every two weeks -- totaling one out of every seven ER visits.**

**Although they are barely 2.6 per cent of Winnipeg's adult population, they have 80,000 contacts with the health-care system in a year.**

# CHSRF Myth Busters

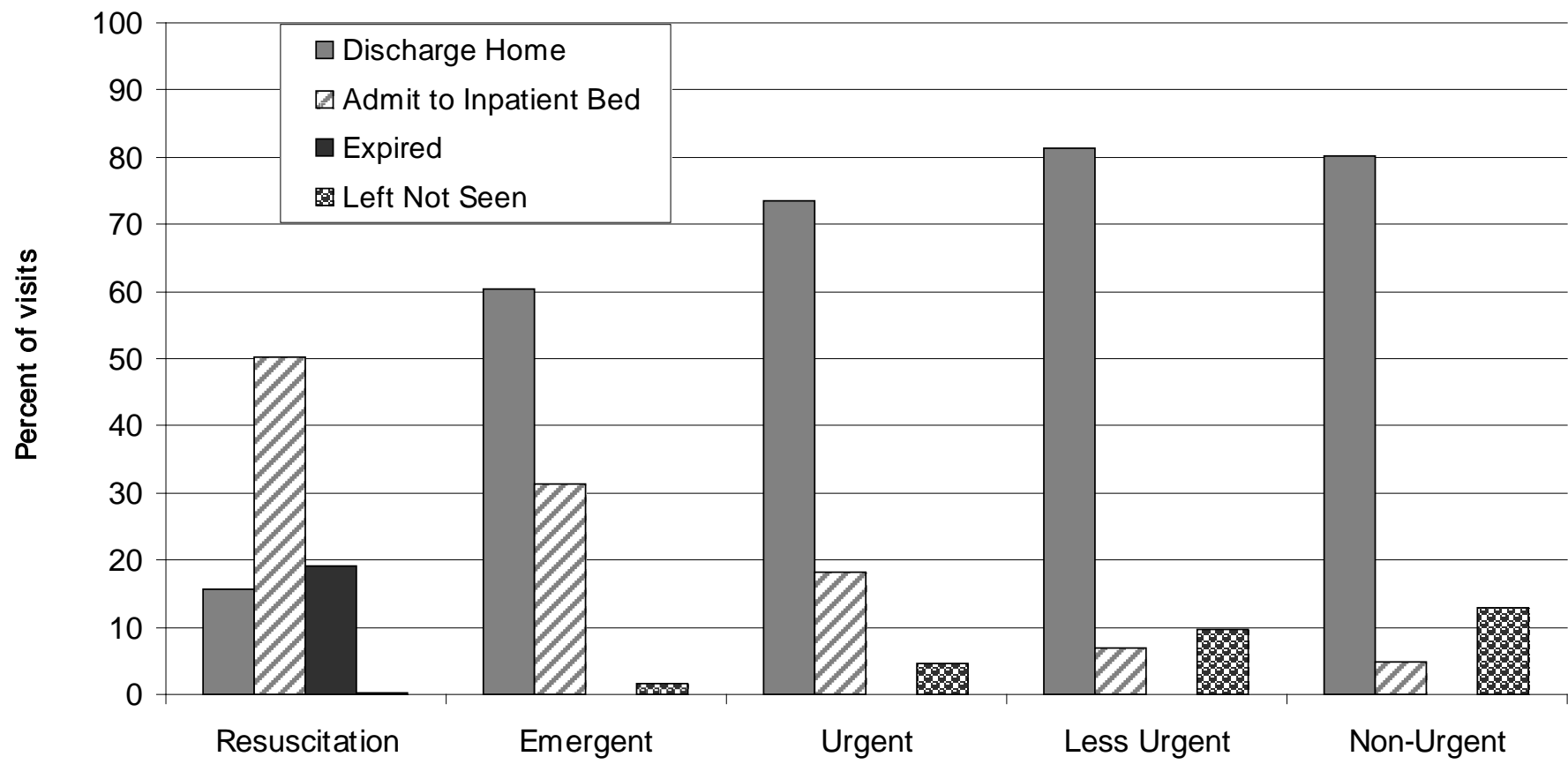


**Myth...**  
Emergency room  
overcrowding is  
caused by non-  
urgent cases

# *In Sum...*

- ✓ There is no easy button
- ✓ An ounce of prevention is worth a pound of cure
- ✓ Keep and build positive relationships
- ✓ No data are perfect

# Percent of Disposition Status Options by Triage Code, Emergency Department, 2004/05



Exclusion: SOGH (as it does not code disposition)

Triage Code

Source: Manitoba Centre for Health Policy, 2008



**Left not seen occurs more frequently in less and non-urgent visits.**

