

No Needless Deaths:

HSMR at QHN Symposium
April 2006



Canadian Institute
for Health Information

Institut canadien
d'information sur la santé

IHI: “The Needs of Patients Come First”

- No needless **deaths**
- No needless **pain or suffering**
- No unwanted **waiting**
- No **helplessness**
- No **waste**

What is HSMR?

- Hospital Standardized Mortality Ratios (HSMR) track changes in hospital mortality rates in order to:
 - Reduce avoidable deaths in hospitals
 - Improve quality of care
- Developed in the UK in mid-1990s by Sir Brian Jarman of Imperial College
- Used in hospitals worldwide (i.e. UK, Sweden, Holland and US)

Why Track Deaths?

- Significant numbers of deaths associated with adverse events in health care
- Definite, unique event
- Complements currently-available regional mortality rates for specific conditions
 - e.g. AMI & stroke survival rates
- Emerging evidence that institution-level death rates can motivate improvement and can be changed

100,000 Lives Campaign

Approaching the Finish Line:

IHI estimates 63,233 lives saved as of April 1st



Success stories

Unity Hospital, Minnesota

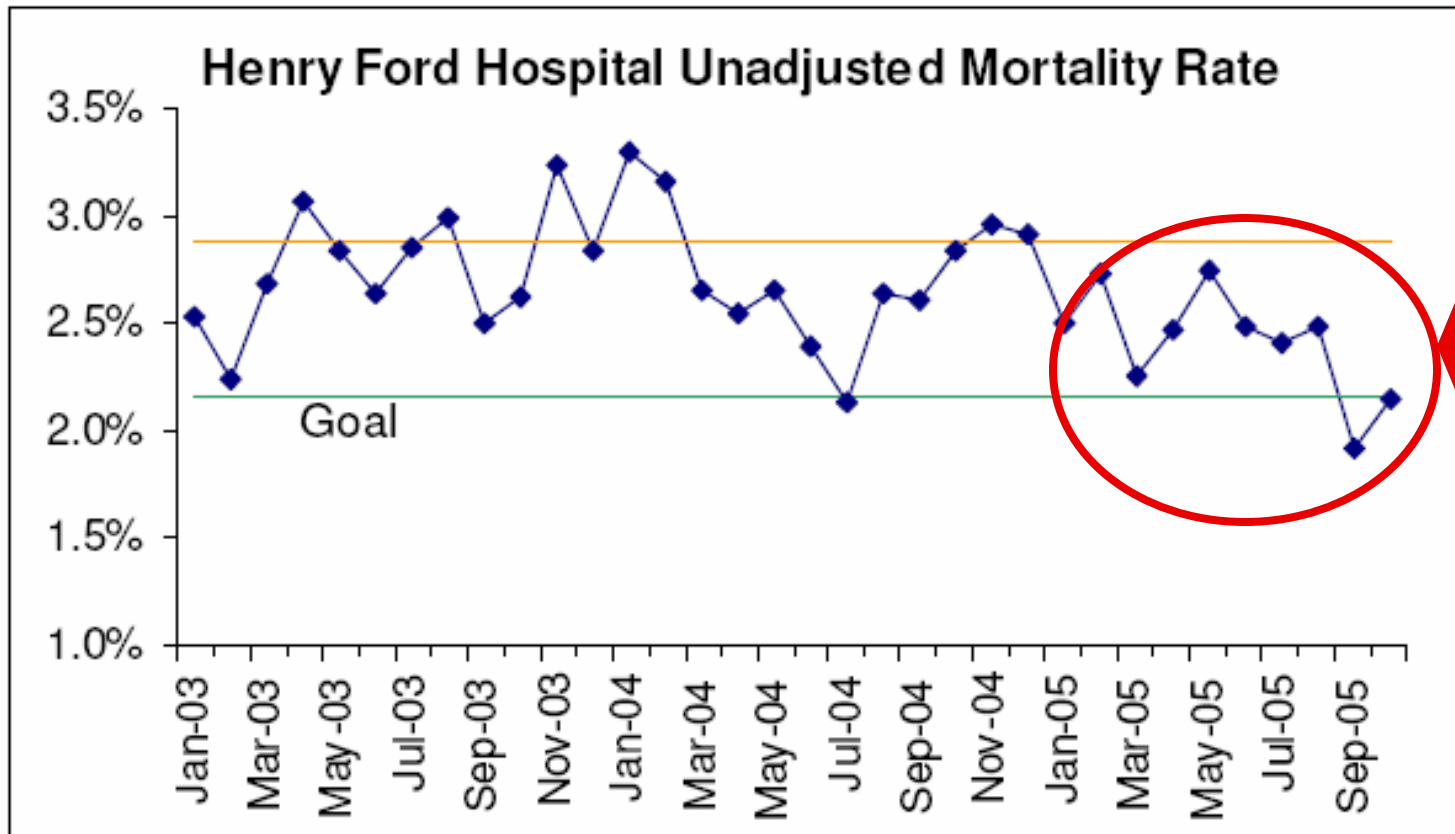
- HSMR in 2001 = **113**
- HSMR in 2003 = **75**
- Quality improvement strategies included:
 - IHI's IMPACT network
 - Rapid response teams
 - Introduction of hospitalists
 - Ventilator bundle
 - 448 days without a VAP case

Success stories

Baptist Memorial, Memphis

- HSMR dropped from 109 to 75
- Quality improvement strategies included:
 - IHI's IMPACT network
 - Rapid response teams
 - Introduced in August 2003
 - Codes down 28% and most occurring in ICU

Henry Ford Hospital



**Estimate
165 lives
saved in
1st 10
months of
2005**



Reducing Deaths in Walsall Hospital in the NHS

- In 2000, HSMR was 130
 - highest of all main acute hospitals in England
- Initially questioned data extensively
- Set up 7 clinical governance groups
- Implemented range of improvements
- By September 2004, HSMR was 93
 - Translates to a fall of 295 observed minus expected deaths

Mike Browne, medical director at Walsall Hospitals NHS Trust

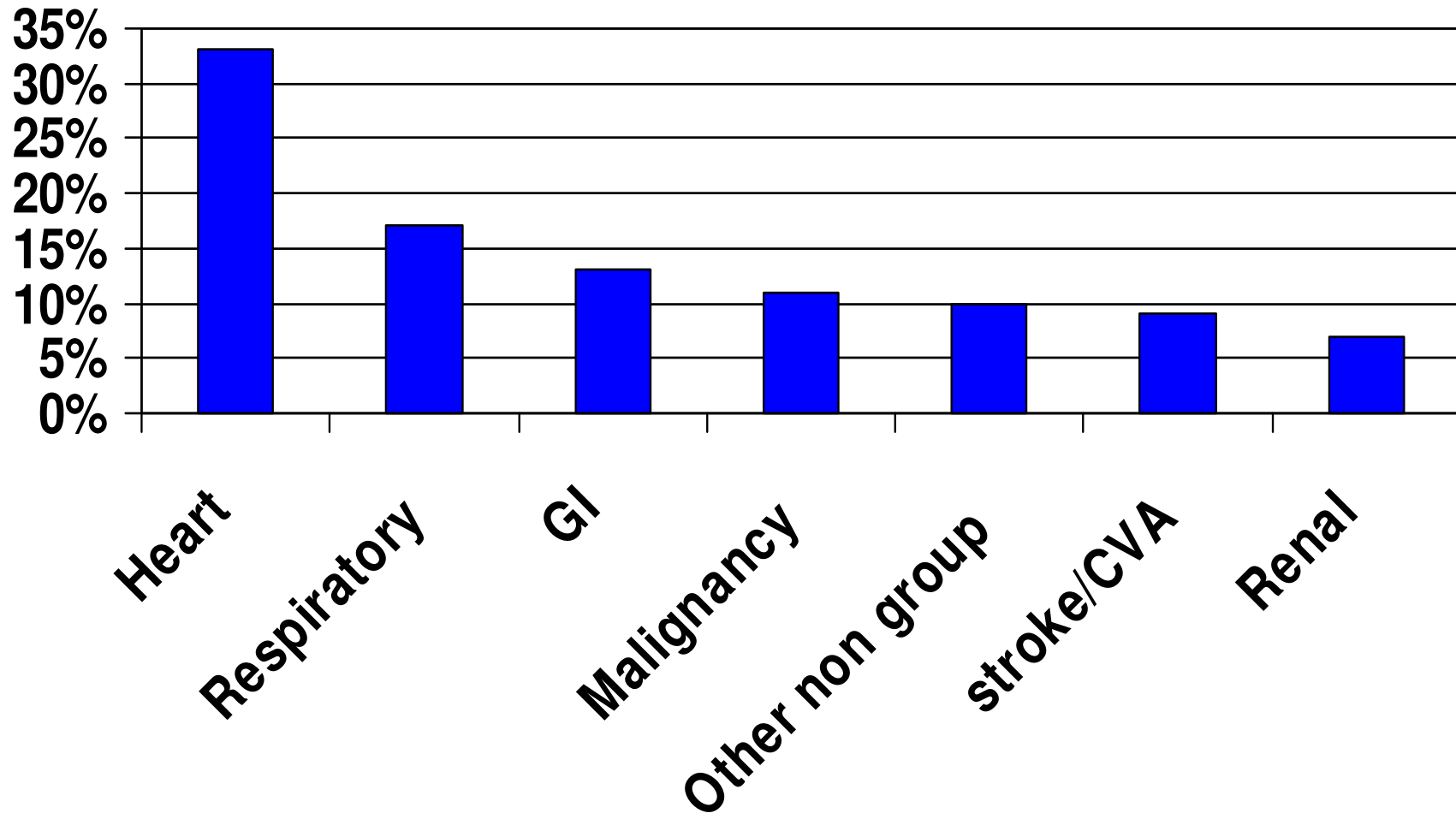
“After the first [HSMR data were published in Jan 2001] we spent a lot of time setting up what I think is a first class clinical governance framework. We focussed on mortality and looked at all the outlying areas [ie the groups of patients with high mortality ratios].”

“We set up seven groups. Each group was given outliers to look at and identify where things could be done. Each group had a senior director on it to give it clout. There was no simple way to change things – no single cause. It was one long slog across the board”

Summary Key Principles (Mike Browne)

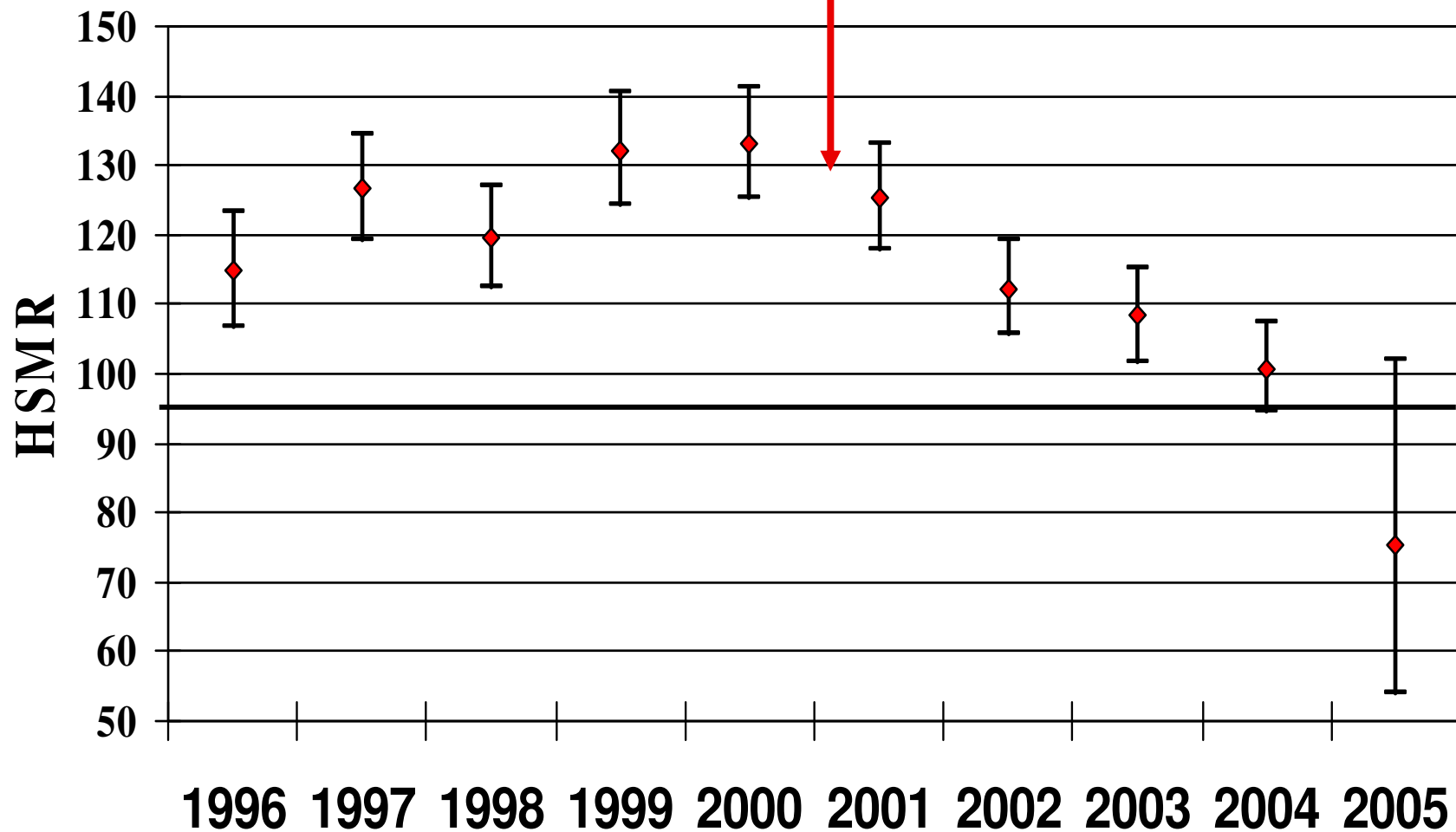
1. Involve whole organisation
2. Involve primary care/patients
3. Robust infrastructure (matrix)
4. CG facilitators
5. Incorporate all existing resources
6. Local focus on big themes
7. Chronic disease management (major influence on all outcomes)
8. Annual CG away day/awards

Walsall reduction of observed – expected deaths: % of total reduction between diagnostic groups



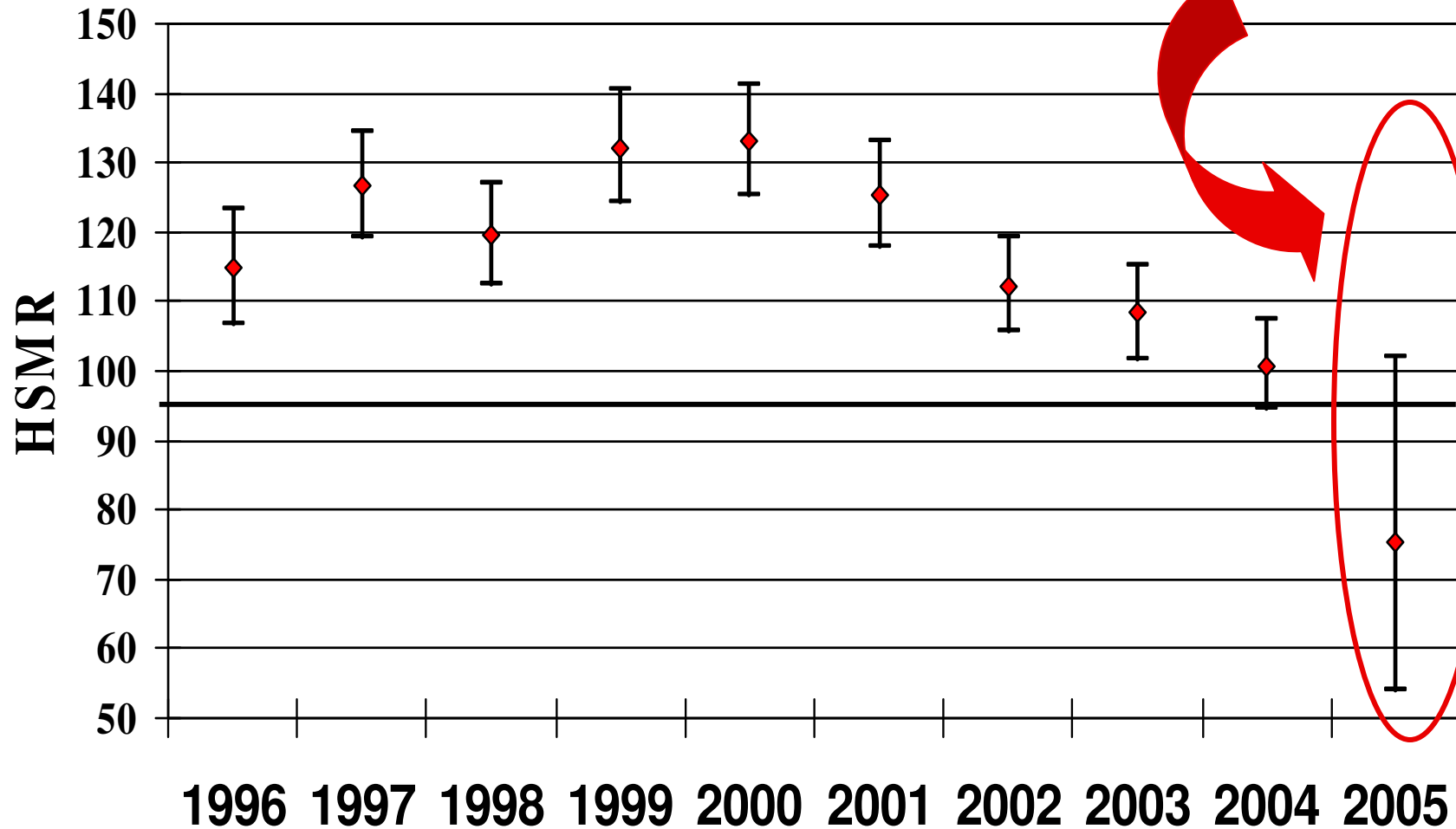
Walsall change of HSMR

First publication of HSMR Jan 2001



Saving More Lives in Walsall

Represents ~ 290 fewer deaths



Understanding HSMR



Canadian Institute
for Health Information

Institut canadien
d'information sur la santé

What is the HSMR?

$$\text{HSMR} = \frac{\text{Observed deaths}}{\text{Expected deaths}} \times 100$$

- HSMR is a measure designed to track changes in hospital mortality rates
- Based on diagnosis groups that account for 80% of deaths
- Adjusted for factors affecting mortality (e.g. mix of diagnoses, age, sex, length of stay)

Importance of HSMR - Jarman

- Large number of deaths, narrow CIs
- Overall measure for hospital
- Allows for variations of coding between hospitals into related ICD codes
- Automatically adjusted for case-mix and social factors (case-mix is a proxy)

HSMR is easy to interpret

Equal to 100

- No difference between facility's mortality rate and average rate

• More than 100

- Facility's mortality rate is higher than the average rate

• Less than 100

- Facility's mortality rate is lower than the average rate

Canadian HSMR: Progress to date

- Methodology developed and tested with Pioneer Group & experts
- ~ 350 hospital sites from 125 organizations & jurisdictions have registered to receive their HSMR
- First HSMR data sent in December 2005
 - Validation toolkit included methodological information, presentation materials and resources on how to use the HSMR
- “Trend tracker” real-time quarterly HSMR updates sent to participating organizations in February & April 2006

Getting Started with HSMR (IHI)

- Plot your dot
 - Request your HSMR from CIHI
- Examine (& validate) your dot
 - Trends
 - Results by service
- Evaluate your dot
 - e.g. Hospital Mortality Review Tool – IHI
- Understand your dot
 - Potential improvement strategies
- Test changes
- Track your dot

What About?

- Late (or missing) data
- Presence of hospices/patients admitted to hospital to die
- Smaller facilities
- Transfers
- Specialized facilities
- Consistency of results from year to year
- My patients are older and sicker
- Social factors
- But my HSMR is already better than 100
- Do I also need to measure my interventions?

Early applications

- Data validation
- Board/senior team “big dot” indicator
- Clinical/improvement teams doing mortality reviews & developing strategies
 - Data analysis (e.g. patients transferred in)
 - 2X2 matrix

2X2 Matrix for Review of Last 50 Deaths

	In ICU	Not in ICU
Yes		
No		

“Comfort Care” only

HSMR: Future plans

- Continue to send quarterly “trend tracker” results to participating organizations
 - Facilitate data validation and use for quality improvement
 - Exploring inclusion in electronic portal
- Share info on HSMR & work with regions/hospitals
- Develop HSMR for Quebec
- Explore HSMR for specialty hospitals
- Explore development of aggregate HSMR data (e.g. for health regions)
- Analysis of factors affecting HSMR

For more information

- For general information: HSMR@cihi.ca
- To download the registration form and additional information on the HSMR:
<http://www.saferhealthcarenow.ca/en/hsmr.aspx>