

**General Q & As
Hospital Standardized Mortality Ratio (HSMR)
December 2009**

1. What is Hospital Standardized Mortality Ratio (HSMR)?

The Canadian Institute for Health Information (CIHI) has calculated the HSMR for eligible acute care hospitals and regions in Canada (excluding Quebec). The HSMR is a measure that reflects the number of deaths observed in a hospital relative to what would be expected, based on the average Canadian experience. It has been used by many hospitals worldwide to assess and analyze mortality rates and to identify areas for improvement.

2. When will the HSMR data be released?

CIHI plans to publicly release HSMR results on December 10, 2009 (at 3 p.m., ET) for all regions, hospital corporations and facilities that meet a statistical threshold set by CIHI for public reporting.

The Ministry of Health and Long-Term Care (MOHLTC), as with CIHI's previous release of HSMR, will list on its public website eligible hospitals and provide a link to the report on CIHI's website sometime after December 10th and before December 30th.

3. What will be released?

This year, CIHI will publicly release one HSMR (the one previously referred to as HSMR All Cases), and this will be for the fiscal years: 2004-05, 2005-06, 2006-07, 2007-08 and 2008-09.

This measure excludes patients whose most responsible diagnosis is palliative care (patients whose hospitalization was for the purpose of palliative care or patients who received palliative care for the largest portion of their hospital stay), and includes patients who were admitted as acute care cases and received some palliative care (not representing the largest portion of their length of stay).

4. How will the results be published?

On December 10th (at 3:00 p.m. ET), CIHI will publish the nation-wide results (with the exception of Quebec) on their website, www.cihi.ca. In Ontario, the results will be reported at the LHIN, hospital corporation and individual hospital (for hospitals that are not part of corporations) levels. However, only LHIN-level and "eligible" hospital results – only those hospitals and hospital corporations that have a minimum of 2,500 HSMR All Cases separations in the 2004-05, 2005-06, 2006-07, 2007-08, and 2008-09 fiscal years will be reported by CIHI.

On December 10th, the OHA will also post the HSMR results for all eligible hospitals on myhospitalcare.ca.

By December 30th, the MOHLTC will have a page on its Patient Safety public web site devoted to HSMR which will list eligible hospitals. Please note that this data may be available on the MOHLTC's website before December 30th. The page will link directly to CIHI's public posting. Reporting of HSMR results will not be duplicated on the MOHLTC's website.

5. Are hospitals expected to link to the HSMR report on CIHI's website?

The OHA strongly recommends that hospitals post their HSMR, as well as links to the CIHI and MOHLTC websites (when available) as a means for providing additional context.

6. Will HSMR results continue to be released publicly on an annual basis?

Yes. CIHI plans to continue releasing HSMR results for all eligible hospitals on an annual basis. This also corresponds with the MOHLTC's mandatory public reporting requirement that hospitals post their HSMR annually.

7. How is HSMR calculated?

The HSMR is calculated as a ratio of:

$$\frac{\text{The number of (actual) observed deaths}}{\text{The number of expected deaths}} \times 100$$

This is the same methodology used for HSMR calculation in previous years.

The HSMR is based on diagnosis groups that account for 80% of all deaths in acute care hospitals, and is adjusted for factors such as: diagnosis group, age, sex, length of stay, admission category, comorbidities, and transfers.

A ratio that is equal to 100 suggests that there is no difference between the hospital's mortality rate and the average national experience given the types of patients cared for.

A ratio greater than 100 suggests that the hospital's mortality rate is higher than the average national experience.

A ratio less than 100 suggests that hospital's mortality rate is lower than the average national experience.

CIHI is also reporting if the HSMR result is statistically different from the baseline of 2004-05 baseline of 100 ($p < 0.05$).

8. Why won't HSMR values be published for every hospital in Ontario?

Results are only reported for facilities that meet a statistical threshold set by CIHI for public reporting: at least 2,500 qualifying HSMR cases in each of the five years being reported.

9. Our hospital is a multi-site corporation and receives our HSMR reports both at the corporation-level and by site. Will this be how our HSMRs are reported?

No, CIHI will be reporting Ontario HSMR results by hospital corporation only.

10. Why is the HSMR an important measure?

HSMR has been used by hospitals in several countries to assess in-hospital mortality rates and to help organizations identify areas for improvement. As a quality indicator and a measure to help hospitals and health professionals follow trends in their hospital mortality rate, HSMR can be used as yet another tool to help improve quality of care and patient safety over time.

11. How are hospitals and clinical teams using HSMR data to help drive down mortality rates, and make improvements in patient safety and quality care?

Ontario hospitals are using the HSMR for internal benchmarking purposes. Beginning with the reporting that started in 2007, this third year of stable reporting helps to show hospitals how their HSMR has changed, where they have made progress and where they can continue to improve. Many organizations have added HSMR to their balanced scorecard or quality improvement program and have HSMR reviewed by the Board of Directors.

This is similar to hospitals in other jurisdictions, including the United Kingdom, the United States, Sweden and Holland, where HSMR data has been used to monitor performance and reduce mortality rates.

Through HSMR, hospitals have been able to *learn* more about the tool, more effectively *examine* their results, *identify* areas for improvement, *implement* strategies to lower mortality, and *track* results over time.

12. Why isn't the number of expected deaths calculated by hospital category (i.e. teaching, community)?

The current method of calculating the number of expected deaths in acute care hospitals in Canada (excluding Quebec) adjusts for several variables that may affect in-hospital mortality (i.e. age, sex, length of stay, admission category, diagnosis group, other). This method provides for simplicity in reporting and a more stable platform to observe trends over time. This is the overall goal of HSMR.

13. Will the HSMR results be grouped by peer hospital?

There are no peer groups involved in the publicly reported HSMR results.

14. Should hospitals compare their HSMR results against other organizations?

The HSMR tool is not intended to serve as a measure for hospitals to compare themselves against other organizations, or for the public to use as a measure of choosing where to seek care.

The HSMR should be used as a tool to help follow progress over time, and make quality improvements based on the results.

15. My hospital treats more complicated patients. How has this been taken into account in the HSMR methodology?

There are a number of factors that contribute to in-hospital mortality. Complicated patients tend to be those who are older, admitted under the urgent or emergency category, and those who stay longer in the hospital. The HSMR methodology takes these and some other factors into account.

16. What does the public reporting of HSMR mean for my hospital?

HSMR is a “big dot” indicator that can serve as a catalyst to hospital and medical leaders to identify areas for system-level quality improvements that may help reduce deaths that occur in hospital. Since HSMR has been reported for a number of years, hospitals can now track the change in their HSMR to assess how effective its performance improvement strategies have been in reducing overall mortality rates.

Similar to indicators used on the OHA’s myhospitalcare.ca website as well as those included on the MOHLTC’s patient safety indicators website, HSMR can be a very effective quality improvement tool to highlight potential areas for investigation. It should be seen as a system-level measure, and not a measure that is directly related to specific events at the level of the individual. That said, HSMR is only one of a number of performance and quality improvement indicators and, like other indicators, is not perfect or without critics. Like other indicators, it is important to look at HSMR results in a broader context and to drill down in the data to obtain a better understanding of where challenges to improvement may exist.

17. What else are Ontario hospitals publicly reporting?

Ontario hospitals are also publicly reporting on a host of other patient safety indicators to inspire improved performance, enhance patient safety and strengthen the public’s confidence in Ontario’s hospitals. The Ministry of Health and Long-Term Care passed a regulation in June 2008, requiring all Ontario hospitals to report on a variety of patient safety indicators, including

- Hospital-acquired Clostridium difficile (C. difficile) infection, began September 30, 2008
- Hospital Standardized Mortality Ratio (HSMR), began December 31, 2008
- Methicillin-resistant Staphylococcus aureus (MRSA) bacteremia, began December 31, 2008
- Vancomycin-resistant Enterococci (VRE) bacteremia, began December 31, 2008
- Ventilator-associated pneumonia in ICU, began April 30, 2009
- Central line infections in ICU, began April 30, 2009
- Surgical site infection prevention, began April 30, 2009
- Hand hygiene compliance among health care workers, began April 30, 2009

Beginning in July 2010, all hospitals with operating rooms will also be required to publicly report on their compliance with a surgical safety checklist for all surgeries.

18. Can the HSMR results be used as a guide to choosing a hospital?

No. The HSMR results should not be used as a guide to choosing which hospital to seek care at. HSMR looks at mortality rates only and represents just a snapshot of one area of a hospital's performance.

A higher than average HSMR result does not necessarily mean that a hospital is "unsafe;" a lower than average HSMR does not necessarily mean a hospital is "safe." It is vital that HSMR results be viewed in the context of other performance indicators.

Hospital care is complicated and depends on many factors, not all of which are reflected or accounted for by HSMR. That is why many indicators must be examined in order to get a sense of how hospitals are performing - where they excel and where improvements could be made. It is important to look at all of these indicators in combination. To judge performance on only one indicator would be misleading.

19. What should physicians and other health professionals say to patients worried about referral to a particular hospital given its HSMR score?

Patients should know that their hospital is safe and that the care they receive there is top-notch, and that every effort – on behalf of everyone serving patients in a hospital – is made to ensure patients receive the highest-quality care possible.

HSMR is another helpful measure for hospitals and health professionals to use to ensure patient care gets even better over time. Like other patient safety indicators, understanding how to interpret the results is crucial. HSMR results are useful for highlighting potential areas for further investigation and should be looked at in a broader context which incorporates additional quality and safety indicators.

20. This year's HSMR report includes a national sepsis analysis. What does this entail?

The 2009 HSMR public release provides a brief analysis of sepsis at the national level including:

- sepsis hospitalizations
- characteristics of patients with sepsis
- sepsis mortality
- hospital care including length of stay and ICU stay
- Canadian hospitals' experiences related to reducing sepsis mortality

Hospital-level sepsis results were not calculated and will not be provided.