# RACMA

THE ROYAL AUSTRALASIAN COLLEGE OF MEDICAL ADMINISTRATORS

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|---|---|
| Medical Leader | |
| Medical Expert | ✓ |
| Communicator | |
| Advocate | ✓ |
| Scholar | |
| Professional | • |
| Collaborator | |
| Manager | ✓ |

## DISTRICTWIDE HSMR REPORT

2017 National Trials (August) – Day 2, Question 1

You have just started as a medical administrator for a District Health Board. During your first month in the job you receive the quarterly report from the Health Roundtable – the agency that does your health service's benchmarking. You thumb through the Executive and KPI reports and note the latest mortality statistical data for the five hospitals in your District.

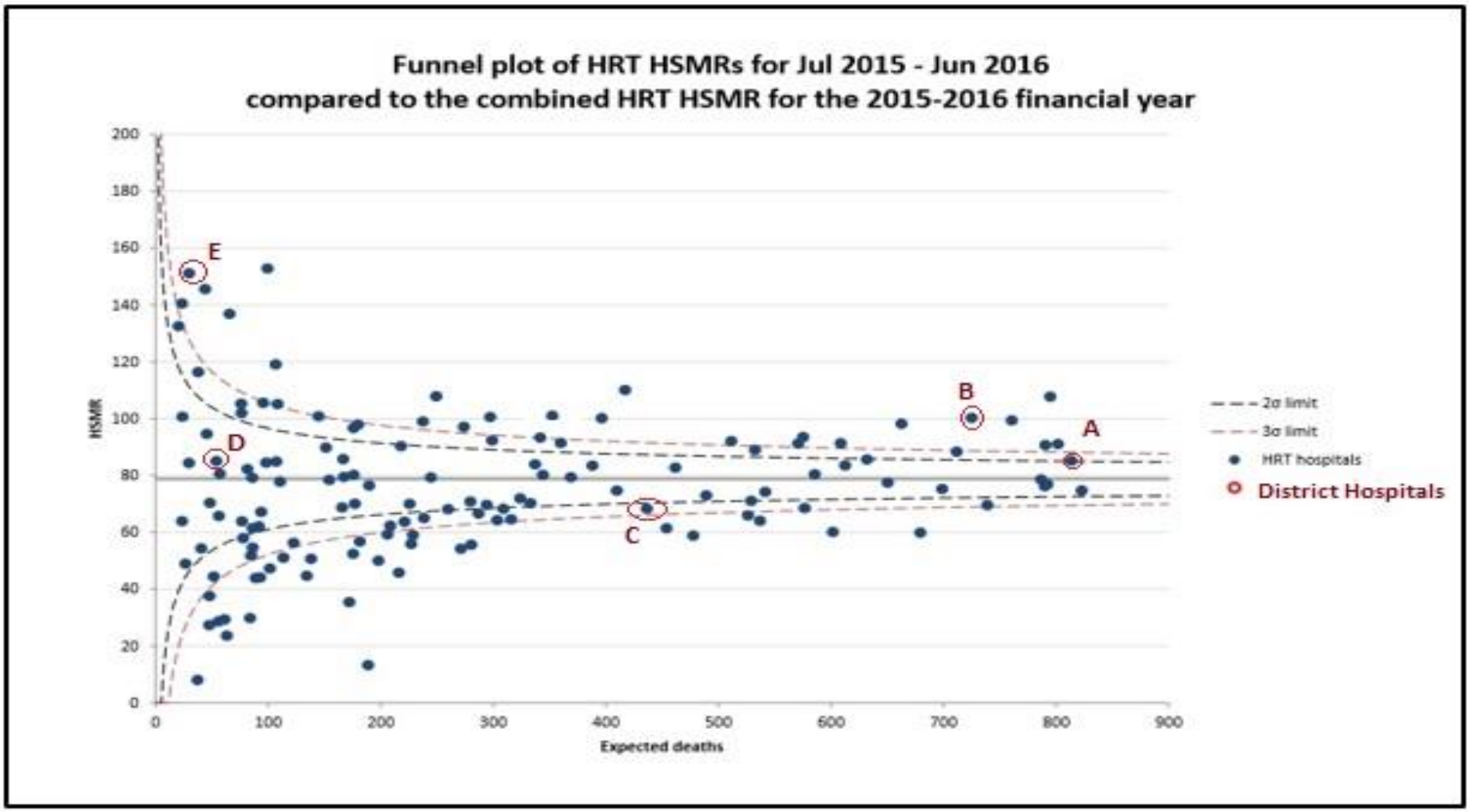
Hospital A: a major teaching hospital of 720 beds.
Hospital B: a major city Hospital of 450 beds.
Hospital C: an obstetric hospital of 250 beds.
Hospital D: a rural hospital of 75 beds.
Hospital E: a rural hospital of 55 beds.

The data points for the five hospitals are shown on the attached funnel plot.

**Questions:**

1. Please describe your understanding of Hospital Standardised Mortality Rate (HSMR) and why it is measured?
2. From this plot, which hospital(s) has/have the most concerning HSMR and why?
3. For the hospital(s) that you are concerned about, what other reports might you want to have a look at and why?
4. For the hospital(s) that you believe has the most concerning HSMR what course of action might you suggest to your Board and CEO?
5. For the hospitals that you believe to have acceptable HSMR, can it be assumed that they have no issues of concern?

**Report page 1.**



**CENSOR NOTES**

This is a question that seeks to understand the candidate's knowledge about inappropriate / unexpected mortality in a hospital and how it can be measured, investigated and managed. An understanding of why Hospital Standardised Mortality measurement is essential and a lack of understanding should not result in a pass mark.

The five hospitals in the District Health Board's network are different sized and have different results. Specifically, the following are the key points for each hospital:

Hospital **A**: Has a rate that is just on 2 standard deviations and probably does not have a problem from a whole of hospital perspective.

Hospital **B**: Has a rate that is outside of 3 standard deviations and does have a result that is significant and warrants investigation.

Hospital **C**: Has a rate that is between 2 and 3 negative standard deviations below the median and probably does not have a problem from a whole of hospital perspective. As it is an obstetric hospital, it may be worth looking at a comparison to other exclusively obstetric hospitals.

Hospital **D**: Has a rate that is just above the mean and probably does not have a problem from a whole of hospital perspective.

Hospital **E**: Has a rate that is outside of 3 standard deviations. As this is a small rural hospital with around 35 recorded deaths, there is a probability that the high rate may simply be due to random statistical variation. Nevertheless, it would be prudent to look at the deaths that have occurred to see if there is a problem or not.

**Question 1:**

To obtain a pass a candidate must be able to explain what HSMR is, and why it is measured. They should also know that there are different methods as to how it can be measured and that hospitals that have a HSMR greater than 3 standard deviations from the mean have an issue that should be investigated. An acceptable definition of Hospital Standardised Mortality Ratio (or Rate) is the ratio of the observed to expected deaths, multiplied by 100, with expected deaths derived from statistical models that adjust for available case mix factors such as ICD10 Code for Principal diagnosis; Gender; Age; Admission type Emergency / planned; transfer status i.e. if a patient is transferred in from another acute hospital as opposed to a regular admissions; Charlson Comorbidity Index or other methods that account for the pre-existing patient diseases. Candidates should be aware that there are several legitimate methods used in Australia and New Zealand. There should also be an understanding of whether patients receiving palliative care are included or excluded.

HSMR's are intended to be a screening tool that is an overall measure of deaths in a hospital, a number of which will be preventable. High ratios may thus suggest potential problems with quality of care. The figures can be broken down by diagnosis group, and any potential problems investigated by checking the data and analysing processes, often going as far as a case note review. This is considered the gold standard method for deciding whether an individual death was preventable but has inherent difficulties such as inter-rater reliability.

High performing candidates will know that issues which may affect the result include factors associated with: - the numerator, the denominator, coding, risk modelling and interpretation. They will also be able to explain that hospitals with high rates to the very left of the plot are probably small hospitals with very few deaths and that the rate might simply be due to random variation. High outlying points to the right of the plot are most likely due to actual issues and not random variation.

**Question 2:**

The hospital that most likely has a problem is Hospital B. It has a rate that is well outside the 3 sigma limit. This hospital's rate warrants an investigation.
Hospital E also has a rate that is outside the 3 sigma limit, however, as it is a small hospital with few deaths, the rate may simply be due to random statistical variation. This hospital may or may not have a problem, but it would be worth reviewing the deaths to check that there is not a problem.
Hospitals A, C and D have rates within the 2 sigma range of the median and most likely do not have a problem.

**Question 3:**

The candidate should suggest that any previous charts should be reviewed to see if these results are a 'one off' or if the rate has been high for some time. A persistently high rate could indicate a problem that has not been understood and/or effectively addressed in the past.
It would also be useful to look at rates for specific hospital divisions, departments or specific DRG's that may indicate if there is an issue that is isolated to a particular area or if the issue is more widespread.
High performing candidates, should also suggest looking at weekday –v- weekend day of admission reports to see if there is a problem at weekends. There is a growing collection of international evidence to suggest that mortality rates are higher for patients admitted on the weekend compared to those admitted during the week. There are several possible explanations for this difference with some studies suggesting that at least part of the effect is due to variation in care between weekdays and the weekend.

**Question 4:**

The candidate should be able to outline a simple plan of how they would investigate the issues at Hospital B and E.
An acceptable approach would involve the following elements:

i. Check that the data is correct – in particular, that there hasn't been coding errors. Ideally do a review of all deaths over the last year or at least a statistically significant sample of records. Better performing candidates will be aware that Health Roundtable Repots come with reports that allow drilling down to episode level.
ii. Do a desk audit of the data using an appropriate methodology (e.g. the DECS methodology provided)
iii. If one clinical area seems to have a higher rate, obtain mortality data/reports for specific departments, units or clinicians.
iv. There should be an appropriate reporting of the issue to the Quality & Safety Committee, CEO and Board. The reporting should not be alarmist in the first instance, but it should express concern that the matter warrants appropriate investigation that may or may not highlight an issue. There should be an assurance given that the matter will be appropriately investigated for Hospitals B and E and that if the results are confirmed, that an appropriate course of action will be suggested for implementation. There should also be confirmation that a precautionary check of all of the other hospitals will be done in due course to ensure there are no poor performers amongst an otherwise well performing hospital.

**High performing candidates** will also know:

v. That sensitivity is required when doing mortality reviews and that relevant senior clinical staff should be involved / aware of the process.

vi. If the issue has been present for some time, it will require a concerted plan of action. Diplomacy will be need as the existing hospital executive either may not have appreciated the issue and/or not been able to address it effectively. Situations like this often reflect systemic issues that need to be addressed as well as specific department or clinician issues. Consequently, there may be a need for a 'marketing plan' to enlighten senior staff to the issues and how they can be addressed.

**Question 5:**

The candidate should be aware that an overall hospital rate that is within expected limits could be masking an area of particular concern. As an example, a hospital may have excellent performance across all but one division that is helping to keep the rate low. Within the division that has a higher rate than the rest of the hospital, there may be one poor performing department, unit or clinician. It is therefore always prudent to look at least one level down from whole of hospital level to see if there is an area that does not have rates similar to the rest of the hospital.

| **Score:** | | **Knowledge**<br>Knows what to do | **Skills**<br>Knows how to do | **Attitude/Behaviour**<br>Shows s/he knows the consequences, leadership responsibility |
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| Poor | 1 | Candidate cannot define what HSMR means and does not understand its significance. Does not recognise the problem hospitals. | Candidate cannot provide an explanation of the data in the reports and what it is showing. | Even if the candidate understands some of the basic data, does not appreciate that there is at least one hospital with a significant issue in the District. |
| Limited | 2 | Only demonstrates a limited understanding of the data and the issues with or without prompting. No formal logic to the analysis. | Does not indicate with, or without, prompting that they have the skills to do an analysis of mortality data. | Demonstrates some very basic understanding of the significance of the task, the sensitivities that may be involved and how careful consideration has to be given on explaining what is being / going to be done. |
| Borderline | 2.5 | In the answers to all 5 questions, provides most of the basic knowledge elements that are required but even with, or without, prompting still misses one or two issues that would impede a successful completion of the tasks. | Provides some reasonable evidence that they have, or know of, the skills to manage some of the more significant tasks but miss one or two elements that would be needed to successfully undertake the tasks in a real life situation. | Demonstrates with, or without, prompting more than a basic understanding of the significance of most issues but fails to understand one or two significant issues that will cause the task to be unsuccessful or create unnecessary problems for the District and the effected Hospitals. |
| Meets standard | 3 | Provides sufficient information that they understand the contents of the data and what actions are required. | Provides sufficient information that they could verify the data and has a logical plan to address i) the data verification, ii) address problem areas, iii) effectively engage senior management /CEO/Board with the issue and iv) places appropriate significance of the issues that need to be addressed. | Indicates that they understand the need to work with other hospital staff and the sensitivities that may be required if there have been inappropriate actions / non-action by the hospital in the past. Appreciates that any initial proposed actions will have to be correctly developed and what some of the consequences could be for the effected district hospitals both internally and externally. |
| Good | 4 | In addition to providing the basic answers to all five questions, the candidate demonstrates that there is a very clear logic to the interpretation/analysis. Is aware of relevant current national or jurisdictional priorities and reports relating to mortality issues. Understands that diplomacy will be needed in engaging senior District staff and Board. | As well as demonstrating they have the skills and/or understand the skills that are required to manage the core elements of this task, the candidate can demonstrate how they would work with the effected hospital executives and a clear understanding of the complexity of the task and the resources required. | Demonstrates they know of all the basic issues required for a pass but in addition, clearly articulates that if the data is correct, there could be significant ramifications if there is a whole of hospital and/or a significant poor performing department. They flag issues around potential community, media and political interest. |
| Outstanding | 5 | Candidate demonstrates an exceptional understanding of HSMR and how to investigate unexpected results and the consequences that follow. Fully understand relevant recent issues, research, policy and commentary on the topic. | Demonstrates that they have, or understand, all of the skills that are required to effectively manage the complexities that this type of scenario presents. Clearly understands that 'good results' may mask underlying problems. Exceptional understanding of what good mortality issue awareness / investigation involves. | Demonstrates that they clearly understand and could manage all of the interrelated complexities that could arise in managing a scenario like this- especially how they would manage the interaction with existing executive staff and Board, and how they would anticipate and manage possible complications. |