Appendix A: Maternal morbidity in Aotearoa/New Zealand | Te manaaki i te whaea matemate i Aotearoa

While most women are healthy throughout their pregnancy, a small number experience severe acute maternal morbidity, also known as maternal 'near miss mortality'. One way of describing this is when a pregnant or recently pregnant woman became so unwell that she 'would have died had it not been luck or good care was on her side'.[70]

Rates of severe maternal morbidity can be used alongside maternal mortality as a measure of the quality of maternity care that can help to address health and disability system failures, with the goal of improving maternity care. Research shows that nearly all maternity intensive care unit (ICU) admissions are cases of severe morbidity (ie, high specificity) and make up more than three quarters of all severe acute maternal morbidity (ie, high sensitivity).[71,72] Research shows there are significant health inequities in maternity in Aotearoa/New Zealand. The impact of these inequities is particularly evident for Māori and Pacific peoples.

Oversight of maternal morbidity

In January 2020, the PMMRC committed to providing direct oversight of the maternal morbidity collection and reporting, beginning retrospectively from 1 July 2019. Previously, the Maternal Morbidity Working Group (MMWG) had received funding for three years to oversee and provide advice on maternal morbidity review, which ended on 30 June 2019. The PMMRC acknowledges the dedication and expertise of the MMWG in working towards the goal of improving outcomes for mothers in Aotearoa/New Zealand. It has made this contribution in particular through its woman-centred maternal morbidity reviews. Offering women the opportunity to describe their experiences has been extraordinarily valuable to inform case reviews, panel findings and recommendations. In addition, the MMWG has developed successful quality improvement initiatives, including the sepsis pathways and bundles, the maternity early warning system (MEWS) and the maternal morbidity review toolkit. It also collaborated in the development of the Severity Assessment Code (SAC) to provide guidance around reporting of adverse events in maternity services.
The PMMRC aims to provide and maintain a sustainable maternal morbidity review function and plans to include maternal morbidity findings in its annual reports. The Chair of the PMMRC and the co-Chairs of the MMWG agree that work in this area is important and should continue.

However, in taking on this important role the PMMRC has identified some key areas of data quality and reporting that require dedicated focus and resource to meet our responsibilities to Te Tiriti o Waitangi and to achieve equitable maternal outcomes that benefit all mothers and babies in Aotearoa/New Zealand.

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[70] Mantel GD, Buchmann E, Rees H, et al. 1998. Severe acute maternal morbidity: a pilot study of a definition for a near-miss. *BJOG: An International Journal of Obstetrics and Gynaecology* 105(9): 985–90. doi: 10.1111/j.1471-0528.1998.tb10262.x (accessed 30 December 2020).

[71] Geller S, Rosenberg D, Cox S, et al. 2004. A scoring system identified near-miss maternal morbidity during pregnancy. *Journal of Clinical Epidemiology* 57(7): 716–20. doi: 10.1016/j.jclinepi.2004.01.003 (accessed 30 December 2020).

[72] You W, Chandrasekaran S, Sullivan J, et al. 2013. Validation of a scoring system to identify women with near-miss maternal morbidity. *American Journal of Perinatology* 30(1): 21–4. doi: 10.1055/s-0032-1321493 (accessed 30 December 2020).

Key focus areas to improve maternal morbidity review and reporting

Engage with hospitals and district health boards to improve ethnicity data to better align with the *Principles of Māori Data Sovereignty*[73] and the guidelines set out in *Health Information Standards Organisation (HISO) 10001:2017 Ethnicity Data Protocols* (Ministry of Health 2017).[74]

Review the maternal morbidity notification form to contribute to a robust approach to collecting data.

Explore ways to improve case ascertainment[75] in order to analyse maternal morbidity more accurately in Aotearoa New Zealand.

Te manaaki i te whaea matemate i Aotearoa – Maternal morbidity in Aotearoa/New Zealand

Ngā whakamōhiotanga - data quality

The PMMRC recognises the desperate need for a robust approach to ethnicity data collection to allow accurate and thorough analysis. Through such analysis, we aim to address systemic factors, such as racism and the ongoing effects of colonisation, that contribute to more severe illness.

The PMMRC acknowledges that the data currently collected on maternal morbidity require significant review to better align with our commitment to the *Principles of Māori Data Sovereignty*[73] and the guidelines set out in *HISO 10001:2017 Ethnicity Data Protocols* (Ministry of Health 2017).[74]

Part of best practice is for ethnicity data collection to be self-identified; people should be able to identify with more than one ethnic group (multiple ethnicities) and information systems must be capable of recording up to six responses.[74] However, the approach to collecting the ethnicity data that are in the maternal morbidity notification database falls well short of best practice: the data come from the ethnicity recorded on the patient's clinical file; only one ethnicity can be selected even though the maternal morbidity notification form has six options of ethnicity to choose from; and ICU or high dependency unit (HDU) staff fill out the form.

Ngā whakamōhiotanga – reporting

Reporting cases of maternal morbidity in Aotearoa/New Zealand is recommended and requested, yet it is not required. If we are to effectively analyse maternal morbidity trends, it

[73] Te Mana Rauranga. 2018. *Principles of Māori Data Sovereignty.* URL: https://static1.squarespace.com/static/58e9b10f9de4bb8d1fb5ebbc/t/5bda208b4ae237cd89ee16e9/1541021836126/TMR+Ma%CC%84ori+Data+Sovereignty+Principles+Oct+2018.pdf (accessed 30 December 2020).

[74] Ministry of Health. 2017. *HISO 10001:2017 Ethnicity Data Protocols*. Wellington: Ministry of Health. URL: https://www.health.govt.nz/publication/hiso-100012017-ethnicity-data-protocols (accessed 30 December 2020).

[75] Case ascertainment refers to the completeness and accuracy of information collected

is important to have full case ascertainment, which requires robust, self-identified ethnicity data.
Inconsistent reporting across hospitals and district health boards will lead to an underestimate of the incidence of maternal morbidity. This is particularly concerning for Māori, Pacific peoples and those with multiple risk factors.

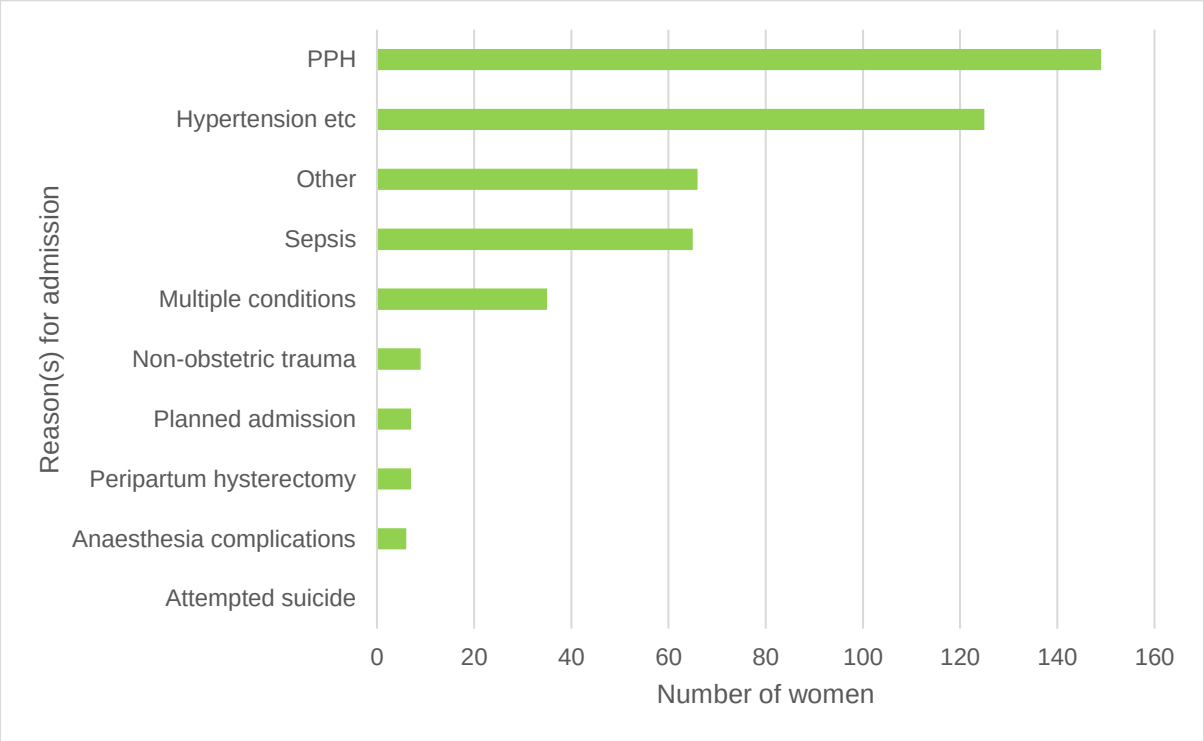
For this reason, this year the PMMRC has agreed to not report on the maternal morbidity data at the same level of detail as previous years. Although the trends they reveal can be useful, analysis and comparisons of specific rates are of limited value due to the variations in reporting and do not meet our commitment to improve ethnicity data. Reporting of these current data may lead some readers to misinterpret them and may not fully represent any existing inequities or the realities of the experiences of the women and babies involved.

Ngā whakamōhiotanga – notifications

Health providers send maternal morbidity notifications to the Commission for women who have been admitted to an HDU or ICU while pregnant, or within 42 days of the end of the pregnancy. These notifications include demographics, the reason for admission and the treatment the women received. Some women who experience severe maternal morbidity receive specialised care in other areas of hospitals, such as birthing/delivery suites. The maternal morbidity notification database does not include these women. While data collection for these cases is not yet robust, it does not discount or diminish the experiences of those women, their whānau or the people who care for them.

Between 1 September 2018 and 31 August 2019, there were 421 notifications of 401 women admitted to an HDU or ICU. The leading reason for admission was postpartum haemorrhage, which accounted for 37.1% of cases (Figure A1). This was followed by hypertensive disorders (31.2%) and sepsis (14%).

Figure A1: Number of pregnant or recently pregnant women admitted to an HDU or ICU by reason(s) for admission 1 September 2018–31 August 2019



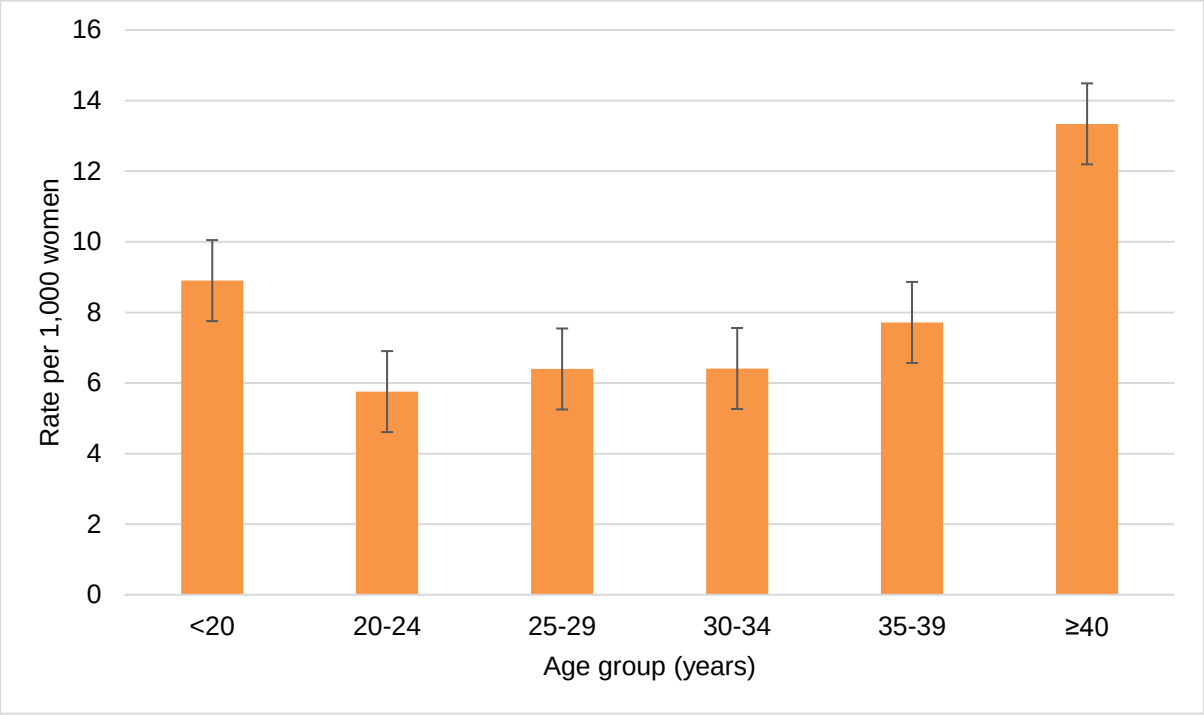
Note: 'Other' includes a wide range of other conditions or causes for admission, including but not limited to cardiac issues, anaphylaxis and chronic co-morbidities. 'Multiple conditions' includes all women who were admitted with more than one diagnosis; these women are counted in the data collection multiple times.

PPH = postpartum haemorrhage.

Source: MMWG Notifications Database: Admissions to an HDU or ICU during or within 42 days of pregnancy.

As Figure A2 shows, women aged over 40 years made up the highest admission rate (13.3:1,000 women giving birth) followed by those aged under 20 years (8.9:1,000 women giving birth).

Figure A2: Rate per 1,000 women giving birth with an HDU or ICU notification by age
1 September 2018–31 August 2019



Sources: Numerator: MMWG notification database: Admissions to an HDU or ICU during or within 42 days of pregnancy; Denominator: MAT: Women who had babies born ≥20 weeks, average between 2017 and 2018.

The notifications suggest the rate of maternal morbidity in Aotearoa/New Zealand during this reporting period was 6.69 per 1,000 women giving birth. This rate is in line with other high-income countries, where the maternal morbidity incidence rate is suggested to range from 3.8 (95% CI 3.3–4.4) to 12 (95% CI 11.2–13.2) per 1,000 births.[76]

Note that the classification of maternal morbidity varies internationally. The rate in this report reflects notifications in Aotearoa/New Zealand of women who were severely unwell and received HDU and/or ICU care; it does not include women who were very unwell and received care in other areas.

Numerator data for notifications

The numerator data come from the MMWG notification database on admissions to an HDU or ICU during or within 42 days of pregnancy.

The Commission provides all HDUs and ICUs in Aotearoa/New Zealand with a maternal morbidity notification form. The form gives the following instructions: 'Please fill in the details

[76] van Roosmalen J, Zwart J. 2009. Severe acute maternal morbidity in high-income countries. *Best Practice & Research Clinical Obstetrics Gynaecology* 23(3): 297–304.

below for each woman admitted to HDU and/or ICU who was pregnant or had delivered within 42 days prior to admission.'

After a pregnant or recently pregnant woman is admitted to an HDU or ICU, organisations are responsible for returning the completed notification form to the Commission. All notification data presented in this report came from the MMWG's notification database, which is managed by the Commission.

Denominator data for notifications

The denominator data for notifications come from MAT data on women who had babies born ≥20 weeks, averaged between 2017 and 2018. See *Methods and definitions for Perinatal and Maternal Mortality Review Committee (PMMRC) reporting* document, available at: www.hqsc.govt.nz/our-programmes/mrc/pmmrc/publications-and-resources/publication/4210.

Maternal morbidity review toolkit for maternity services | Te kete arotake mate whakawhānau mō ngā ratonga whakawhānau

The PMMRC and the MMWG continue to recommend using the *Maternal Morbidity Review Toolkit* (the toolkit) for maternity services to guide local DHB review of maternal morbidity.

In 2018 the MMWG released this toolkit to provide a sustainable reviewing method of maternal morbidity. It intended that this practice would become business as usual from July 2019.

The purpose of the toolkit is to provide maternity services with clear, easy-to-use, evidence-based guidance and resources for implementing a consistent process for reviewing cases of significant maternal morbidity.