Maternal Fetal Medicine (MFM) - Auckland wait times for Tauranga patients

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Aim: To assess the timeliness of the MFM Auckland scheduling service for Tauranga patients, in the hope of improving NZMFM's maternal and fetal outcomes.

Standard: 100% of pregnant women should be seen...

- "within 7 days, if a scan abnormality is present" [MFM public website (1)]
- "within 7 days if urgent, and ideally everyone within 14 days" [as reported by NZMFMN Midwife Specialist Alison Hedge]
- "within 5 days if urgent, and within 21 days if non-urgent" [MOH 2019 MFM Action Plan (2)]

...following an accepted referral to MFM Auckland

Methods:

- **Sampling strategy:** Consecutive Block Sampling.
- **Sampling frame dates:** MFM appointment dates from 01/07/2019 - 01/07/2020.
- **Inclusion criteria:** Women from Tauranga with an accepted referral to MFM Auckland.
- **Exclusion criteria:** Women not referred to MFM; Women outside of the Tauranga catchment referred to MFM; Women with declined MFM referrals; Women with inadequate evidence of referral date to MFM; Women with inadequate evidence of MFM appointment date.
- **Sampling size:** 122. 67 cases excluded for insufficient information --> 55 auditable records (45%).
- Data was collected from the Tauranga Hospital MFM referral logbook, and electronic clinic letters and documents located on the Tauranga Hospital 'CHIP' system.
- **Data variables collected:** Date referral made, Date of first MFM appointment, Date MFM report uploaded to CHIP, Indication for referral, Outcome of appointment.
- Our standards are 'process' indicators.

Strengths:

- Reasonable sample size and time frame, with population data easily retrievable from logbook.
- Electronic MFM reports were a reliable data source - no need to analyse physical clinical notes.
- Data is easily available in logbook for extension of audit to cover previous years.
- Data is recent but not contemporaneous with timing of the audit, so we weren't awaiting reports.
- We had to exclude a significant proportion of our sample population in our primary analysis, but could for our secondary analysis (days between MFM appointment and uploading of report).

Limitations:

- Technically we are auditing a practice outside our own DHB, and we were unable to obtain patient triage categories from ADHB, and lack the expertise to determine this ourselves. This limits our ability to draw meaningful conclusions - more so for any cases triaged as 'urgent'.
- No clear single standard to audit against.
- Assumption that logbook accurately records all women from Tauranga referred to MFM Auckland.
- Only 45% of women with an MFM appointment have evidence of the referral date - the majority of these are from primary care. In addition, we are therefore analysing the quality of Tauranga LMC practices, not just Tauranga Hospital O&G department staff.
- Some women have written logbook evidence of a MFM appointment but no electronic evidence on CHIP, limiting reliability.
- A consecutive block sampling method introduces sampling risk, making it more difficult to make inferences outside of this time frame.
- Data sourced is only from Tauranga Hospital catchment and only in relation to MFM Auckland, limiting generalisability to other geographical areas/DHBs.

Interpretation of Findings:

Primary analysis: Number of days between referral and MFM appointment

- We are unable to draw conclusions on the timeliness of referral for cases triaged as 'urgent', which should occur within either 5 or 7 days depending on the standard referred to, due to being unable to determine the triaging code set by ADHB, which appears to largely depend on consultant expert opinion.
- However, we can draw conclusions when looking at all patients. As per Figure 2, a significant proportion of referrals are not meeting the standards. The reasons for referral of these patients are displayed in Appendix 1.
- Extended wait times seen in both 'urgent' and 'non-urgent' cases may have clinically significant maternal and/or fetal consequences.
- NZMFM is a multidisciplinary network with many potential factors contributing to our findings.

Recommendation

- Aim to reduce wait time between referral and MFM appointment so that all patients meet both the ADHB and MOH standards with 100% compliance.
- Knowing the triage category of each case would add valuable context for complete interpretation - especially regarding 'urgent' cases, which are most likely to benefit from strict compliance to a standard.
- ADHB has expressed interest in our findings in order to guide further NZMFM system reviews.
- A single defined standard and triage system would be favourable, and make future auditing more meaningful.

Secondary analysis: Number of days between MFM appointment and report being uploaded onto CHIP

- The aim of using an electronic system is timeliness and reliability. Ideally, we should receive a clinic letter as soon as it is typed.
- The scheduler at MFM Auckland sends reports to Tauranga Hospital's Antenatal Clinic Midwife every Monday, hence the clustering found. However, this practice can cause urgent clinic plans to be unknown.

Recommendation

- To optimise maternal and fetal outcomes, we encourage sending urgent (action required within 7 days) MFM reports to Tauranga immediately.

Additional finding: Lack of evidence of referral date

- Only 45% of our sample population had evidence of their referral date, whether written in the logbook or identifiable on electronic documents. The vast majority of these were primary care referrals.
- Even when referrals were made from secondary care there was poor documentation, with the common practice being multiple handwritten notes on a single sheet that was later scanned and uploaded, which isn't necessarily safe practice.

Recommendation

- In order to promote optimal record-keeping and the ability to audit easily in future, we recommend thorough systematic documentation of MFM referral dates.
- Formally requiring LMCs to directly notify Tauranga's Antenatal Clinic Midwife of the date they make a referral.
- Chronological note-making template to better record a patient's pregnancy events.
- Incorporating the date of referral in ADHB's clinic letter template.

Primary Analysis Results:

Table 1

Categories of days corresponding to guideline standards	Number of patients	Cumulative percentage of patients	Guideline
0-5	10	18%	Ministry of Health, urgent
0-7	7	31%	Auckland published and Auckland reported, urgent
0-14	15	58%	Auckland reported, non-urgent
0-21	12	80%	Ministry of Health, non-urgent
>21	11	20%	

Figure 1

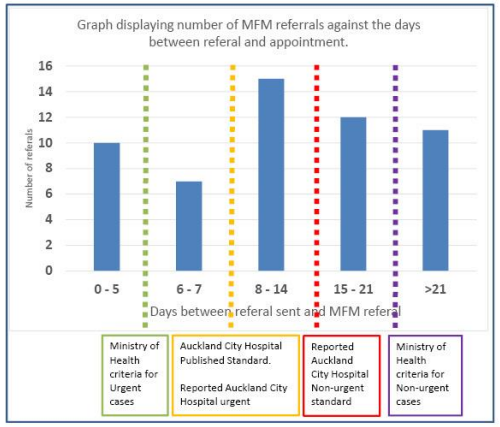


Table 1 shows the various number of days that correspond with the standards being assessed, with a cumulative summary of the % of patients who fulfil them.

- Following referral, urgent cases should be seen within 5 days as per the MOH standard and 7 days as per the ADHB reported and website standards. 18% of patients were seen within 5 days of referral and 31% within 7 days.
- Following referral, all patients should be seen within 14 days as per the reported standard and 21 days as per the MOH standard. 58% of referrals were seen within 14 days, and 80% within 21 days.

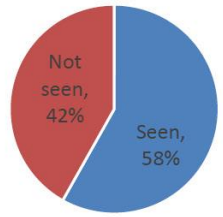
- 42% of patients were not seen within the ADHB reported standard of 14 days. 20% of patients were not seen within 21 days, and therefore do not meet the most lenient of the three standards (Figure 2).
- The average wait time was 14 days, with the longest being 43 days. This occurred in June 2020, for a fetus subsequently diagnosed with multiple fetal abnormalities including bilateral talipes, overlapping fingers, early megacystis, hypertelorism, and T18 karyotype 47+XY
- Interestingly, the March/April 2020 COVID lockdown had no detrimental effect on wait times.

Secondary Analysis Results:

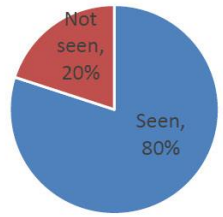
- The number of days between MFM appointment and the report being uploaded onto CHIP varied from 0-30 days. The average was 9 days.
- There was significant clustering of upload dates.
- For example, 7 letters were uploaded to CHIP on 22/4/20 with appointments having occurred between 22 and 8 days prior.

Figure 2

Patients seen within 2 weeks of MFM appointment



Patients seen within 3 weeks of MFM appointment



Appendix 1:

Cases beyond 14 days (in addition to the cases >21 days)	Cases beyond 21 days
Reduced fetal growth	Multiple fetal abnormalities; T18
IUGR	Bilateral talipes
Right-sided aortic arch	Unilateral left multicystic dysplastic kidney
Fetal abnormality; VSD	MSS1 positive
LMC sent 2 previous referrals but not received; polydactyly	Bilateral talipes
Cleft lip	Bilateral renal pelvis dilatation
Antenatal scan small stomach	Multiple previous preterm births
Early onset IUGR	Previous child CDA T2
Increased probability for T18	2x mid-trimester loss, PPROM 34
Cleft lip	Gastroschisis
Maternal Rheumatic Heart Disease	USS abnormality ?aneuploidy

References:

1. *New Zealand Maternal Fetal Medicine Network (NZMFMN) - Auckland.* Healthpoint. March 18 2020. Accessed July 2020 **https://www.healthpoint.co.nz/public/maternity/new-zealand-maternal-fetal-medicine-network-4/**
2. *Maternal Fetal Medicine (MFM) Action Plan. Delivering safe, sustainable MFM services to women and babies in Aotearoa New Zealand. Ministry of Health.* New Zealand. Published September 2019. Accessed July 2020 **https://consult.health.govt.nz/electives/mfm-action-plan/supporting_documents/MFM%20Action%20Plan%20Consultation%20%20Draft.pdf**

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