Women's Health and Newborn Annual Report

2016 – 2017

COUNTIES MANUKAU HEALTH

1 Introduction

Acknowledgements

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Table of Contents

4 Gynaecology CM Health

5 Newborn Care CM Health

6 Maternity Quality Improvement Workplan 2017-2018

7 Appendices and Glossary

List of Tables

List of Figures

Abbreviations

ADHB	Auckland District Health Board
ANZNN	Australia and New Zealand Neonatal Network
AUT	Auckland University of Technology
BMI	Body Mass Index
CM Health	Counties Manukau Health
DHB	District Health Board
DiP	Diabetes in Pregnancy
ELT	Executive Leadership Team
FTE	Full Time Equivalent
GAP	Growth Assessment Protocol
GDM	Gestational Diabetes Mellitus
GP	General Practitioner
HCA	Health Care Assistant
HIE	Hypoxic Ischaemic Encephalopathy
ICD10	International Statistical Classification of Diseases and Related Health Problems, 10th Revision
IOL	Induction of Labour
KFNC	Kidz First Neonatal Care
LARC	Long Acting Reversible Contraception
LMC	Lead Maternity Carer
MAT	National Maternity Collection
MCIS	Maternity Clinical Information System
MELAA	Middle Eastern Latin American African
MEWS	Maternity Early Warning Score
MFYP	Maternity First Year of Practice programme
MMH	Middlemore Hospital
MoH	Ministry of Health
MQSP	Maternity Quality and Safety Programme
MQSG	Maternity Quality and Safety Group
MSG	Maternity Strategic Group
NEWS	Neonatal Early Warning Score
NISG	National Influenza Specialist Group
NMDS	National Minimum Data Set
NMMG	National Maternity Monitoring Group
NZHIS	New Zealand Health Information Service
OASIS	Obstetrical Anal Sphincter Injuries
PHO	Primary Health Organisation
PIMS	Patient Information Management System
PMMRC	Perinatal and Maternal Mortality Review Committee
POAC	Primary Options for Acute Care
SGA	Small for Gestational Age
SUDI	Sudden Unexpected Death in Infancy
WIES	Weighted Inlier Equivalent Separations

Chief Executive Foreword

Counties Manukau Health is pleased to provide the inaugural Women's Health and Newborn Report for the 2016/17 financial year.

The Women's Health and Newborn Annual Report has evolved this year from the Maternity Quality and Safety Programme (MQSP) Annual Report produced over the previous four years as part of the Ministry of Health (MoH) requirements. As in the past, this report describes practice, projects and achievements which reflect the recommendations from the National Maternity Monitoring Group (NMMG) and the Perinatal and Maternal Mortality Review Committee (PMMRC). While we have had considerable focus on increasing early engagement over the past four years, the recently announced Better Public Service (BPS) target will support further efforts in this area. The activity described in the report also aligns with the Counties Manukau Health (CM Health) Maaori Action Health Plan and the New Zealand Maternity Standards.

This report has broadened its scope from maternity quality and safety to include a wider focus on all care provided for women and their whaanau by Women's Health, including a new gynaecology section. We continue to strengthen our effort on actions that will improve the health of Counties Manukau women by identifying and acting on opportunities to achieve better outcomes that meet their needs.

Some highlights from our report specifically demonstrating work where CM Health has improved access to services and had a positive impact on women are: addressing iron deficiency anaemia in pregnancy and postpartum, improved access to long acting reversible contraception, and supporting women in financial hardship with the co-payments for ultrasound scans ensuring fetal surveillance of babies with growth restriction are monitored as part of an obstetric management plan.

In addition, we have retained the user-friendly design of this report as readers find it engaging, accessible and relevant to key stakeholders including district health board (DHB) staff, community lead maternity carer (LMC) midwives[1], general practitioners (GPs), and women and whaanau who work, live, and/or birth in Counties Manukau. To further assist socialisation, our report was publicly launched in September 2017 and available on Paanui (CM Health intranet website) and CM Health website.

I would like to thank the Maternity Quality and Safety Group (MQSG) and our entire Women's Health team who work within Middlemore Hospital, SuperClinic and our three birthing units, as well as our DHB and community LMC midwifery workforce based out in our communities. Your dedication and contribution ensures Counties Manukau women and whaanau are given the best possible care.

CM Health remains committed to the needs of our community and strives to provide appropriate, accessible, quality clinical care to our women, babies and whaanau.

Dr Gloria Johnson
ACTING CHIEF EXECUTIVE OFFICER

1 Note that throughout the document 'community LMC midwife' is the term used to describe midwives caring for women who claim funding, from the MoH, through Section 88 for their services. Other terms commonly used include lead maternity carer (LMC). This is equivalent to self-employed LMC in previous reports.

Purpose of Annual Report

The purpose of CM Health's Women's Health and Newborn Annual Report is to:

- Provide information about the quality improvement work underway in the Counties Manukau area to women living and birthing in our district.
- Provide information about the maternity workforce, including quality improvement work underway in Counties Manukau.
- Describe the work, and provide examples of quality initiatives and outcomes in newborn care.
- Describe the work, and provide examples of quality initiatives in gynaecology.
- Provide the MoH with the contractually required information as set out in Section 2 of MQSP Crown Funding Agreement Variation.
- Document CM Health's progress towards achieving the MQSP Work Plan deliverables in 2016/17.
- Describe the work planned to improve the quality and safety of maternity services to be delivered in 2017/18.
- Benchmark against New Zealand Maternity Clinical Indicators.
- Work with the PMMRC recommendations to bring about improvements to specific areas identified as priorities.

Alignment with the New Zealand Maternity Standards

The New Zealand Maternity Standards provide guidance for the provision of equitable, safe and high quality maternity services throughout New Zealand. They consist of three high level strategic statements to guide the planning, funding, provision and monitoring of maternity services by the MoH, DHBs, service providers and health practitioners.[2]

Standard One: **Maternity services provide safe, high-quality services that are nationally consistent and achieve optimal health outcomes for mothers and babies.**

8.1 Multidisciplinary meetings convene at least every three months.

8.2 Report on implementation of findings and recommendations from multidisciplinary meetings.

8.3 DHBs invite all practitioners linked to maternity care, including holders of access agreements, to participate in the multidisciplinary meetings, and report on proportion of practitioners who attend.

8.4 Produce an annual maternity report.

8.5 Demonstrate that consumer representatives are involved in the audit of maternity services at CM Health.

9.1 Plan, provide and report on appropriate and accessible maternity services to meet the needs of the Counties Manukau region.

9.2 Identify and report on the groups of women within their population who are accessing maternity services and whether they have additional health and social needs.

9.3 All DHBs plan and provide appropriate services for the groups of women within their population who are accessing maternity services and who have identified additional health and social needs.

9.4 The proportion of women with additional health and social needs who receive continuity of midwifery care is measured and increases over time.

10.1 Local multidisciplinary clinical audit demonstrates effective communication among maternity providers.

10.2 The number of sentinel and serious events in which poor communication is identified as a risk decreases over time.

Standard Two: **Maternity services ensure a women-centred approach that acknowledges pregnancy and childbirth as a normal life stage.**

13.2 DHB service specifications for pregnancy, childbirth and parenting education services are informed by evidence and best practice and are reviewed at least every five years.

15.1 A national tool for obtaining quantitative and qualitative data and consumer feedback on women's maternity experiences at the local level is developed, implemented and reported on.

17.1 All DHBs provide access to pregnancy, childbirth and parenting information and education services.

17.2 Demonstrate in the annual maternity report how CM Health have responded to consumer feedback on whether services are culturally safe and appropriate.

19.2 Report on the proportion of women accessing continuity of care from a LMC for primary maternity care.

19.1 All DHBs have a mechanism to provide information about local maternity facilities and services and facilitate women's contact with LMCs and primary care.

19.2 The proportion of women accessing continuity of care from a LMC for primary maternity care is reported in each DHB's annual maternity report.

2 Ministry of Health. 2011. New Zealand Maternity Standards: A set of standards to guide the planning, funding and monitoring of maternity services by the Ministry of Health and District.

Standard Three: All women have access to a nationally consistent, comprehensive range of maternity services that are funded and provided appropriately to ensure there are no financial barriers to access for eligible women.

23.1 Local multidisciplinary clinical audit demonstrates women and babies have access to levels of care that are clinically indicated.

24.1 All DHBs report on implementation of the Guidelines for Consultation with Obstetric and Related Medical Services (referral guidelines) processes for transfer of clinical responsibility.

24.2 Local multidisciplinary clinical audit demonstrates effective linkages between services.

25.1 All DHBs have local and regional maternity and neonatal emergency response plans agreed by key stakeholders including emergency response services.

25.2 All maternity providers can demonstrate knowledge of local and regional maternity and neonatal emergency response plans.

25.3 Local multidisciplinary clinical audit demonstrates effective communication among maternity providers in cases of clinical emergency.

26.1 All DHBs provide, or accommodate, a model of continuity of midwifery and obstetric care when secondary or tertiary services are responsible for the woman's care.

Alignment to the CM Health Healthy Together Strategic Plan 2015-2020

Our Strategic Goal[3]

We care about achieving healthy equity for our community. Together, the Counties Manukau Health system will work with others to achieve equity in key health indicators for Maaori, Pacific and communities with health disparities by 2020. We will measure the impact we have on healthy life years every year. This is our commitment to act and be deliberate in our choices and priorities. This means that people will live longer healthier lives in the community.

Alignment to the CM Health Maaori Health Plan

The CM Health Maaori Health Plan 2016/17[4] had a focus on improving breast feeding rates for Maaori infants (refer to section 5.1.4 in the plan) and reducing Sudden Unexpected Death in Infancy (SUDI) (refer to 5.1.12 in the plan). This report describes work aligned to these priority areas in the relevant sections.

3 Counties Manukau District Health Board, 2015. Healthy Together Strategic Plan 2015-2020. http://www.countiesmanukau.health.nz/about-us/what-we-do/strategy-and-values/

4 Counties Manukau District Health Board, 2016. Maaori Health Plan 2016/17. http://countiesmanukau.health.nz/assets/About-CMH/Reports-and-planning/Maori-and-pacific-health/2016-2017-CM-Health-Maaori-Health-Plan-2016-17.pdf

Alignment with Better Public Service

The Government has committed to delivering a set of 10 Better Public Services (BPS) results. The BPS results were chosen for their importance in improving the lives of New Zealanders.

One of the BPS that MoH is leading (in collaboration with the Ministry of Social Development, the Ministry of Business, Innovation and Employment, and Housing New Zealand) is:

Result 2: Healthy mums and babies

Target: By 2021, 90% of pregnant women are registered with a LMC in the first trimester, with an interim target of 80% by 2019, with equitable rates (12+6 as defined by the MoH) for all population groups.

Healthy pregnancy and safe birth are foundations for a good start to life. Maternal health is important because the status of a pregnant woman's health can have a lifelong impact on her child. The medical literature now identifies a range of chronic diseases in adulthood as having their origins in childhood or fetal life. Most pregnant women and children experience good health and wellbeing most of the time, but for a range of reasons Maaori and Pacific families, and families in high deprivation areas, have poorer maternal and child health outcomes compared to the New Zealand average.

To find out more about this target, please visit the MoH website or the State Services Commission website: **http://www.ssc.govt.nz/bps-good-start-to-life** for a summary.

Our Population

CM Health is responsible for providing (or funding) women's health services for our communities in Counties Manukau.

In 2016, CM Health provided health and disability services to an estimated 534,180 people who reside in the local authorities of Auckland, Waikato District and Hauraki District. Our population is growing at a rate of one to two percent per year; one of the fastest growing DHB populations in New Zealand. From 2015/16 to 2025/26 the number of new residents in Counties Manukau is projected just over 84,000. A propitiation of this growth will be due to migration into Counties Manukau district.

There are a diverse range of needs that can be further distinguished by four geographical locality areas that have been defined covering the Counties Manukau district: Maangere/Otara, Eastern, Manukau and Franklin.

The Counties Manukau district has an ethnically diverse population: 39% NZ European, 24% Asian, 21% Pacific Island and 16% Maaori. Twelve percent of all New Zealand's Maaori population, 37% of New Zealand's Pacific Islanders, and 21% of New Zealand's Asian population live in Counties Manukau.

Compared with other DHBs, Counties Manukau has the second highest number of Maaori (after Waikato), the highest number of Pacific Islanders, and the second highest number of people (after Auckland DHB) who identify as Asian ethnicities.

According to current population projections, the Asian population of CM Health will continue to increase the fastest of our ethnic groups, followed by Pacific Islanders, then Maaori, while our New Zealand European/Other population will show little growth.

At the time of the 2013 Census, 36% of the Counties Manukau population lived in areas classified as being the most socio-economically deprived in New Zealand. Fifty-eight percent Maaori, 76% are Pacific Islanders, and 45% of 0-14 year olds in Counties Manukau lived in the most deprived area (NZDep 9 or 10) at the time of the 2013 Census. On the basis of the NZDep 2013 measure, Otara, Maangere and Manurewa are the most socio-economically deprived areas in the Counties Manukau district.

FIGURE 1.

Map displaying CM Health locality geographical boundaries, facilities and travel times

2 Our Maternity Services

Counties Manukau Health Maternity Strategy

Aim

"Our aim at Counties Manukau Health is to support the provision of quality maternity care which is woman centred, safe and equitable for all mothers and babies."

Principles

Maternity care is provided in a culturally appropriate way which supports care that protects, promotes, and supports normal childbirth for women and babies, with evidence-based medical intervention when required.

Women will easily access a local lead maternity carer who will provide individualised care, navigate and support the woman and her family/whaanau through the maternity care system as close to home as possible.

Having a baby and the transition to parenthood is recognised as a socially significant event for families/whaanau.

Childbearing women and their families are supported to make choices which are underpinned by the maternity care providers sharing evidenced-based information.

Maternity care is co-ordinated across settings and disciplines to maximise safety and use resources wisely.

People who work in the maternity care system are provided with a safe and respectful environment in which they can learn and grow together.

The quality of maternity care and services is measured and evaluated.

CM Health Shared Vision and Values

We aspire to live and breathe our values every day as the foundation of our strategic actions:

Valuing everyone Whakawhanaungatanga	Make everyone feel welcome and valued
Kind Manaakitanga	Care for other people's wellbeing
Together Kotahitanga	Include everyone as part of the team
Excellent Rangatiratanga	Safe, professional, always improving

The Women We Serve

BY DR PIP ANDERSON, PUBLIC HEALTH PHYSICIAN

CM Health is responsible for providing maternity services to women who live within the Counties Manukau DHB boundary.

Most women (83%) living in Counties Manukau choose to birth at CM Health facilities (Table 1). However, a woman living in Counties Manukau, may birth at another facility for a range of reasons.

There a small number of women who are referred to ADHB because of identified fetal complications such as congenital heart disease or severe maternal cardiac conditions. A woman may also birth at another facility if she has a community LMC midwife who has an access agreement with another DHB or if she goes into labour unexpectedly while away from home.

TABLE 1.

Location of birthing for Counties Manukau Domicile Women, 2012-2016

DHB LOCATION OF BIRTHING	2012	2013	2014	2015	2016
Counties Manukau	7424	6840	6775	6696	6679
Auckland facilities	1085	1064	1196	1165	1227
Waitemata facilities	50	50	41	48	66
Elsewhere	72	74	88	88	79
TOTAL	**8631**	**8028**	**8100**	**7997**	**8051**
Percentage Birthing at Counties	86.0%	85.2%	83.6%	83.7%	83.0%

Source: National Minimum Dataset (NMDS). Note women who birth reflect the number of women giving birth rather than the number of babies born. Note there is variation in the data extracted from Health Intelligence and Informatics and data extracted from NMDS. NMDS is updated these numbers differ slightly from numbers in last year's report.

In 2016, 60% of women living in Counties Manukau who birthed at an Auckland DHB facility lived in Howick, with 45% of these women identifying as Chinese.

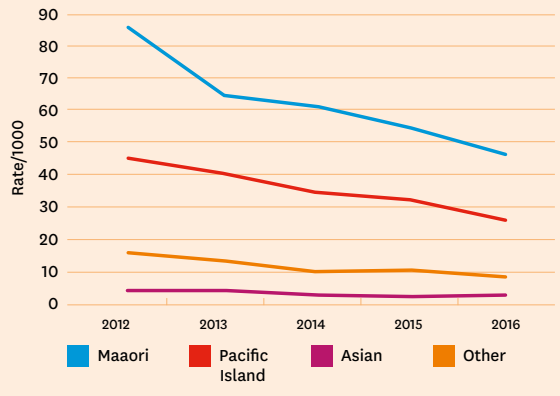
The characteristics of women who live in Counties Manukau and birthed in 2016 (regardless of where they birthed) are shown in Table 2.

Of the women who live in Counties Manukau and birthed in 2016, 27.9% were Pacific Island, 26.3% were NZ European/ Other, 19.8% Maaori, 11.0% were Indian and 8.6% were Chinese. It is important to note that ethnicity is prioritised[5] (see Table 2). Maaori and Pacific women birthing, as a percentage of birthing cohort, is trending down over time, while the percentage of Indian women birthing has been trending up (see Table 2).

The number and rate of births to women aged less than 20 years-of-age, domiciled in CM Health, has continued to decrease in Counties Manukau since 2012 with 403 women, domiciled to CM Health aged <20 years, giving birth in 2016 (see Figure 2 and Table 2).

FIGURE 2.

Birth rate,<20years, by ethnicity, for women living in Counties Manukau, 2012-2016



Source: NMDS. Extracted by Dean Papa 2017.Denominator is women aged 15-19 years Census 2013 updated projections 2016.

5 This is a process which assigns the ethnicity of a person who has given multiple responses to just one ethnicity in order to ensure that the total by ethnicity equals the total number of women. This means that if a woman identifies as more than one ethnicity only one ethnic group is assigned to her with Maaori prioritised first followed by Pacific, then Asian and then European. Prioritisation conceals diversity within, and overlap between, ethnic groups by eliminating multiple ethnicities from data.

TABLE 2.

Demography of women living in Counties Manukau who birthed in 2012-2016, regardless of DHB facility of birth

	2012		2013		2014		2015		2016	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
Maaori	1972	22.8%	1722	21.4%	1690	20.9%	1626	20.3%	1595	19.8%
Pacific Island	2774	32.1%	2540	31.6%	2482	30.6%	2422	30.3%	2249	27.9%
Indian	621	7.2%	650	8.1%	719	8.9%	810	10.1%	886	11.0%
Chinese	612	7.1%	554	6.9%	632	7.8%	546	6.8%	689	8.6%
Other Asian	405	4.7%	383	4.8%	411	5.1%	489	6.1%	511	6.3%
European/Other	2247	26.0%	2179	27.1%	2166	26.7%	2104	26.3%	2121	26.3%
<20 years	698	8.1%	580	7.2%	510	6.3%	477	6.0%	403	5.0%
20-24 years	1929	22.3%	1806	22.5%	1723	21.3%	1587	19.8%	1545	19.2%
25-29 years	2363	27.4%	2148	26.8%	2326	28.7%	2263	28.3%	2387	29.6%
30-34 years	2165	25.1%	2096	26.1%	2212	27.3%	2287	28.6%	2282	28.3%
35-39 years	1139	13.2%	1124	14.0%	1031	12.7%	1096	13.7%	1132	14.1%
40+ years	337	3.9%	274	3.4%	298	3.7%	287	3.6%	302	3.8%
Unknown	9	0.1%	11	0.1%	14	0.2%	3	0.0%	1	0.0%
Decile 1	225	2.6%	210	2.6%	224	2.8%	189	2.4%	242	3.0%
Decile 2	426	4.9%	355	4.4%	363	4.5%	341	4.3%	384	4.8%
Decile 3	512	5.9%	410	5.1%	449	5.5%	436	5.5%	496	6.2%
Decile 4	444	5.1%	472	5.9%	413	5.1%	437	5.5%	426	5.3%
Decile 5	461	5.3%	442	5.5%	467	5.8%	473	5.9%	440	5.5%
Decile 6	475	5.5%	482	6.0%	479	5.9%	502	6.3%	493	6.1%
Decile 7	598	6.9%	516	6.4%	523	6.5%	574	7.2%	614	7.6%
Decile 8	680	7.9%	714	8.9%	748	9.2%	724	9.1%	731	9.1%
Decile 9	1413	16.4%	1315	16.4%	1368	16.9%	1324	16.6%	1363	16.9%
Decile 10	3388	39.3%	3101	38.6%	3052	37.7%	2994	37.4%	2861	35.5%
CM Health nfd*	2	0.0%	4	0.0%	1	0.0%	6	0.1%	1	0.0%
Franklin	909	10.5%	813	10.1%	848	10.5%	844	10.6%	942	11.7%
Howick	1774	20.6%	1699	21.2%	1746	21.6%	1736	21.7%	1752	21.8%
Maangere & Otara	2334	27.0%	2234	27.8%	2105	26.0%	2052	25.7%	1879	23.3%
Manukau	3612	41.8%	3278	40.8%	3400	42.0%	3359	42.0%	3477	43.2%
TOTAL	8631		8028		8100		7997		8051	

Source: National Minimium Dataset. Note Ethnicity is prioritized.NZ deprivation is at Meshblock level (PHO register). Localities defined by CM Health. *nfd=not further defined.

The MoH provided DHBs with a national analysis of the National Maternity Collection (MAT) for 2015. This data is derived from the National Minimum Data Set (NMDS), LMC claims for services provided under the Primary Maternity Services Notice, as well as data from Births, Deaths and Marriages collected by the Department of Internal Affairs.

Historically MAT hasn't had good coverage of all the data elements for CM Health women because it relied on LMC claim data for body mass index (BMI) and smoking status.

In CM Health, we've always had a large percentage of women receiving their care from DHB services and their data for BMI and smoking status were not included in MAT. The MoH has been working to improve the coverage of MAT, and now receives information from the DHBs primary maternity services as well as LMC claims. While the dataset is still not complete, it has far better coverage of these data elements than in previous years (see Table 3). There remain limitations in generalising the data from MAT to all women living in CM Health.

TABLE 3.

Characteristics of women birthing in 2015, Counties Manukau versus the rest of New Zealand

	COUNTIES MANUKAU		REST OF NEW ZEALAND	
ETHNICITY	**NO.**	**%**	**NO.**	**%**
Maaori	1881	22.9%	12774	25.2%
Pacific Isaland	2509	30.6%	3577	7.1%
Asian	1856	22.6%	7390	14.6%
European/Other	1948	23.8%	26990	53.2%
Unknown	7	0.1%	22	0.0%
TOTAL	**8201**		**50753**	
TRIMESTER OF BOOKING	**NO.**	**%**	**NO.**	**%**
1	3514	42.9%	35126	69.2%
2	2855	34.8%	12289	24.2%
3	460	5.6%	1908	3.8%
Postnatal	77	0.9%	152	0.3%
Unknown	1295	15.8%	1278	2.5%
TOTAL	**8201**		**50753**	
BMI	**NO.**	**%**	**NO.**	**%**
Extremely obese (40+)	502	6.1%	1881	3.7%
Healthly weight (19-24)	2319	28.3%	22140	43.6%
Obese (30-39)	2004	24.4%	10027	19.8%
Overweight (25-29)	1861	22.7%	13906	27.4%
Underweight (<19)	182	2.2%	1396	2.8%
Unknown	1333	16.3%	1403	2.8%
TOTAL	**8201**		**50753**	
SMOKING STATUS AT BOOKING [6]	**NO.**	**%**	**NO.**	**%**
No*	7331	89.4%	43632	86.0%
Yes	870	10.6%	7121	14.0%
TOTAL	**8201**		**50753**	

Source: MAT provided by MoH 2017. Note this data is sourced from NMDS, LMC claims and Births, Deaths and Marriages. *Number includes unknown. This is different from NMDS data presented in other tables. Refer to smoking section pg 74 where provider arm smoking data is presented (16% of women identified as smokers compared to 10% in MAT database).

The maternity dataset (MAT), provided by the MoH, does not include a measure of socioeconomic status. Table 2 shows that over 50% of women birthing in Counties Manukau live in decile 9 and 10.

Table 3 shows a higher percentage of women living in Counties Manukau and having babies, are Pacific Islanders compared to the rest of New Zealand.

Table 3 shows that 30.6% of women living in Counties Manukau who birthed in 2015 identified as Pacific Islanders, compared to 7.1% in the rest of New Zealand. Only 23.8% of women birthing in Counties Manukau were New Zealand European/Other, compared to 53.2% of women birthing in the rest of New Zealand.

A higher percentage of women living in CM Health booked after the first trimester and are overweight or obese compared to the rest of New Zealand (see Table 3). It is worth noting the data is less complete for CM Health women, with a high percentage of unknown data for weight, time of registration, and smoking status compared to the rest of New Zealand.

There are currently issues with CM Health data for women cared for by hospital services being uploaded into the maternity dataset. This is due to the fact that MoH Maternity Care Information System (MCIS) project has not enabled the connectivity between the systems to enable data sharing to MoH. It has also been recently discovered that there are errors in the healthware data that need to be corrected.

CM Health is working with MoH to resolve these matters. It is expected the data quality concerns will be much improved when these issues are resolved. We look forward to there being more complete data in the future.

Our Maternity Workforce

BY THELMA THOMPSON, DIRECTOR OF MIDWIFERY PRACTICE, DR SARAH TOUT, CLINICAL DIRECTOR WOMEN'S HEALTH & DEBRA FENTON, MATERNITY SERVICE MANAGER

CM Health's aim is for maternity care to be planned around the needs of women and their whaanau. Health professionals are working collaboratively to ensure that women and their family have a positive experience with the care we provide, as well as confidence in our maternity system.

The Women's Health service operates across the community with services at Middlemore Hospital and Manukau SuperClinic, as well as running specialist clinics in Otara, Papakura and Pukekohe Birthing Units. An obstetrician is onsite at Middlemore Hospital 24 hours a day, seven days per week and is available to community LMC midwives and GPs for consultation.

Our registered medical officer (RMO) workforce currently consists of eight house officers, 15 registrars and four fellows. CM Health is an accredited Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) training site for new O&G specialists; with an intake of four to five new registrar trainees per year. We are also an accredited RANZCOG training site for sub-specialist training in maternal fetal medicine and urogynaecology and by the Australian Gynaecology Endoscopy Society (AGES) for minimal access surgery. General house officers rotate through our service and receive an introduction into Women's Health, many of whom chose this area of their practice for their career, either as a GP, or go on to specialist training.

There were 284 midwives who identified Counties Manukau as their first work area in the 2016 Midwifery Council of New Zealand Workforce Survey. This is 9.4% of 3023 midwives nationally with an Annual Practising Certificate.

The average age of midwives practising at CM Health is 42.2 years compared with 47.7 years nationally. The percentage of midwives in CM Health who give New Zealand Maaori as their first, second, or third ethnicity is 10.1% compared with 9.4% nationally. The percentage for Pacific Island midwives is 3.9% for CM Health compared with 2.2% nationally.

The CM Health long-term workforce strategy has focused on providing future workforce stability through increasing the local midwifery workforce to match the demographics of the Counties Manukau area. Initiatives as part of the strategy have included the "Grow our Own" programme[6] which includes Pacific Midwifery Student Scholarships, Graduate Midwifery programmes, and on-going education support for career development.

Maternity Workforce Strategies

Our maternity service has been challenged since October 2016, with midwifery shortages in secondary care inpatient services and LMC practice. Along with this, even though our birth volumes are static, our WIES[7] has increased by 7% over the last year. Counties Manukau maternity managers work closely with the Talent Acquisition Centre to employ staff, and also union representatives to discuss maternity strategies to address our shortfall. Midwifery shortages are a standing agenda item on regional meetings and work is underway nationally with Health Workforce NZ to determine the longer term needs of the midwifery workforce.

As well as our midwifery new graduate programme (pgs. 20-21) a number of registered nurses, with support, have been employed in secondary care areas where it is recognised they bring medical/surgical/neonatal skills to assist with providing care as acuity in these areas rises

Retention of all current staff is important to ensure the skill mix of the maternity workforce remains as it supports the volume of new midwifery graduates and nurses to maternity. Strategies to retain staff are being discussed in multiple forums. Support staff is also key to our workforce. A new clerical operational manager position has been established to support the clerical workforce across the adapting Women's Health services.

CM Health maternity managers continue to explore all avenues to recruit, sustain and retain staff, acknowledging the ongoing shortage of midwives and the strain this puts on the service.

7 Scholarships and mentoring programmes supported by The Tindall Foundation, Pu Ora Matatini Maaori Midwifery and CM Health Pacific Unit.
8 WIES is a method of weighting individual discharges based on complexity.

Ngaa Maaia ki Taamaki Makaurau June 2017 monthly hui with guest speaker Dr Naomi Simmonds.

Pu Ora Matatini Midwifery Scholarship Programme

BY MEGAN TAHERE, MAAORI MIDWIFERY LIAISON, CLINICAL EDUCATOR AND POM PROGRAMME CO-ORDINATOR, AUT

Since 2010 CM Health, with funding and support from the Tindall Foundation, has continued to develop and deliver the Pu Ora Matatini Midwifery Scholarship Programme (POM Programme).

The POM Programme provides financial, academic and pastoral support to Maaori students enrolled in the Auckland University of Technology (AUT) Bachelor of Health Science Midwifery Programme in response to the shortage of Maaori midwives working in Counties Manukau. The purpose is to support Maaori midwifery students to pursue excellence and succeed in their undergraduate midwifery journey. The aim is to increase the Maaori midwifery workforce by supporting Maaori midwifery students through the AUT Midwifery Programme, assisting them to establish themselves as health care professionals in Counties Manukau and the wider Auckland region.

In 2014 a joint venture partnership between CM Health and AUT introduced a Maaori midwifery liaison role based at the AUT Manukau Campus to support the POM Programme and provide wraparound support to all Maaori midwifery students at AUT. In 2016 this role was extended to include co-ordination of the POM Programme. Collaboration with Ngaa Maaia ki Taamaki Makaurau, the Auckland regional group of Ngaa Maaia, and Kia Ora Hauora provides additional wraparound support to accelerate development of the Maaori midwifery workforce and promote workforce retention.

Since commencing, the POM Programme has supported 15 Maaori women to graduate from the AUT Midwifery Programme and one to graduate from the AUT Bachelor of Health Science Standard Pathway. Of these graduates, six are currently employed by CM Health, six are LMC midwives in the Counties Manukau community, and one is employed by Waitemata DHB. There are four Maaori midwifery students currently in year three of the AUT Midwifery Programme who have been past recipients of the POM Programme scholarship.

The 2017 POM Programme scholarship opened for applications in July offering 10 scholarships that pay the recipients study fees and a fixed amount for course related costs. There are currently 58 Maaori students enrolled in semester two of the AUT Midwifery Programme across all three years. This provides increased potential for POM Programme scholarship applicants, and increased opportunity for continued development of the Maaori midwifery workforce within Counties Manukau and wider Auckland region.

TABLE 4.

Students enrolled in semester two of the AUT Midwifery Programme, 2015-2017

	2015	2016	2017
Total	247	253	255
Maaori	35	42	58
Maaori Percentage of Total	**14.2%**	**16.6%**	**22.7%**

Source: AUT Maaori Midwifery Liaison data.

Pasifika Midwifery and Scholarships

BY NGATEPAERU MARSTERS, PASIFIKA MIDWIFERY LIAISON AND STUDENT SUPPORT, AUT

In 2016, CM Health awarded four Ko Awatea scholarships to AUT Pasifika midwifery students. The recipients were two third year students and two second year students.

A total of eight AUT Pasifika students graduated in March and are now registered midwives. CM Health have welcomed six from this group into the Midwifery New Graduate Programme. One new graduate has joined CM Health as a community midwife, with the other five practising within the CM Health catchment. The two remaining graduates; one is on maternity leave and the other a community LMC midwife in Northland.

"Scholarships have meant support and recognition for all the hard work and effort that my family and I have put into me becoming a qualified midwife. Financially it has made what seemed like a massive mountain of debt, become something much more manageable for my family and me. I am extremely thankful and blessed to have been a recipient."

Dinah Otukolo – Ko Awatea scholarship recipient

TABLE 5.

Total Pasifika midwifery students across all years

	2013	2014	2015	2016	2017
Total number of midwifery students	204	218	232	237	220
Pasifika Students	20	27	28	26	26 + 3 (on leave)
	10%	12%	12%	11%	13.1%

Source: AUT Pasifika Midwifery data.

On-going support of Pasifika students comes from many avenues:

- Pasifika Midwives Aotearoa (PMWA):
  - 'Aunties' mentoring initiative.
  - 2016 NZCOM Biennial Conference (subsidised registration).
  - The 2nd National Pasifika Midwifery Fono (free registration).
- CM Health and AUT's jointly proposed role of Pasifika midwifery liaison position at AUT.
- TAHA Maternal Child Health Services*:
  - 2016 Catalyst 4 Change Conference (free registration).
- NZCOM Auckland region – Pasifika Midwifery Strategic plan.

The goal of 17% of midwifery students identifying as Pasifika by 2020 appears achievable.

The National Pasifika Midwifery Fono – April 2017, Kia Aroha College, Manukau.

*Subsequent to the time period covered by this report, TAHA is no longer functioning as an organisation.

Midwifery New Graduate Programme at CM Health

BY SANNE WESSELING, MIDWIFERY CO-ORDINATOR OF NEW GRADUATE PROGRAMME & DONNA RITCHIE, LMC MIDWIFE LIAISON

CM Health midwifery graduates May 2017.

CM Health has provided and co-ordinated a new graduate midwifery programme since 2002 and is constantly reviewing and adapting it to meet the evolving needs of the service. After trialling several formats and following feedback and evaluation, CM Health settled on a 15 month programme, which enables the new graduate midwife to 'find her feet' for approximately the first 12 weeks, followed by a solid two months of feeling confident and truly part of the team.

In 2013 new graduate community LMC midwives, working in the Counties Manukau area, were invited to join the midwifery graduate programme orientation and study days. This enables new graduate midwives, irrespective of midwifery practice settings, to continue their pre-registration collegial relationships into supportive professional networks.

The programme is led by the midwife co-ordinator. This role provides support, guidance, pastoral care and resource to CM Health new graduate midwives during their 15 month programme. The LMC Liaison's role is to support new graduate community LMC midwives into practice and to aid communication between DHB and primary care maternity providers. This support is in addition to that provided by the midwifery graduate's MFYP mentor, midwifery practice partners, midwife managers, and senior midwives.

The midwifery graduate programme begins with an orientation week with orientation sessions scheduled over a five-day period. For the employed new graduate midwives the programme consists of three five-month placements: Maternity Wards (high risk antenatal/postnatal), Birthing and Assessment, and either a Birthing Unit or the DHB community midwives in Manukau (antenatal and postnatal caseloading excluding intrapartum).

The CM Health Midwifery New Graduate Programme offers four new graduate midwife study days over the 15 month period. These study days are facilitated specifically for new graduate midwives. Past topics have included perineal suturing, resilience and self-care, neonatal cardiac exam and jaundice, interpreting laboratory results/biochemistry in pregnancy, and legal matters in midwifery. In addition, the study days include practical skills sessions, as well as the opportunity to share clinical experiences.

For CM Health employed new graduate midwives, the orientation and study days are paid rostered days. For community LMC new graduate midwives, attendance is free of charge and offers the opportunity to reflect on practice and skills, as well as providing support and networking opportunities.

Support for new and graduate community LMC midwives to the Counties Manukau area

The support provided for graduates and new community LMC midwives to the area comprises:

- Orientation sessions run by CM Health staff alongside employed graduates.
- $2000 set-up grant for new graduate community midwives to help with purchasing midwifery equipment.
- Reimbursement for the Children's Worker Safety Check fee.
- A New Self-Employed Midwifery Business Start-up booklet to help new midwives navigate through the business side of self-employed midwifery.
- A Maternity Information Directory and a Community Prescribing Guide for Maternity Care available online with hard copies available to all new access holders.
- Our Maternity Monthly (OMM); a monthly digital newsletter.
- Access to CM Health Education as outlined in the annual education calendar.
- Monthly Access Holders meetings. These meetings provide an opportunity for improved communication and interface between CM Health and community LMC midwives, as well as offering a forum for education and updates.
- Regular lunchtime meetings with a variety of interesting speakers to keep up-to-date with current services.
- Support to connect online with MCIS via CITRIX.
- Familiarisation shifts at CM Health birthing facilities as arranged with the midwife co-ordinator and midwife manager concerned.
- Four weekly multidisciplinary perinatal and maternal mortality meetings which involve confidential discussion and valuable recommendations being made to improve outcomes.
- Quarterly serious adverse event and morbidity meetings.
- First Contact Pregnancy Information Packs, provided for community LMC midwives, to give to women they are booking directly to assist equitable access to information.
- A maternity Smokefree advisor who manages all referrals accepted by CM Health for smoking pregnant women.
- Breastfeeding support services both within the facilities and the community. This support is additional to the compulsory Baby Friendly Hospital Initiative (BFHI) required breastfeeding education offered.
- Employed graduates are given the time to attend the Midwifery First Year of Practice Programme (MFYP) for graduate midwives offered by the New Zealand College of Midwives.
- Orientation to the maternity systems within CM Health which can include administration, referral processes, and computer training for MCIS and PiMS.
- Orientation to Middlemore Hospital and the three birthing units if requested.

Preceptoring model

The intake of the May 2017 graduates saw changes to the preceptoring model with the aim of providing greater support to these midwives. These changes included graduates working the same shifts as their preceptor during the supernumerary period. This was to minimise the number of people the graduate was orientated by to improve consistency. Following the supernumerary time, a Maternity Ward midwife would support graduates when two or more were on the same shift. A midwife from the Birthing and Assessment Unit was available to support employed and community LMC midwives during this period. These changes are being evaluated to assist in planning future programmes.

Voluntary bonding for all graduates

Counties Manukau is a designated hard-to-staff area for midwifery. Those CM Health midwives (both employed and community) accepted on the scheme after qualifying as a registered midwife will receive an annual after-tax payment of $3,500 for up to five years. The first payment is made after three years ($10,500), and again at the end of the fourth ($3,500) and fifth ($3,500) years.

Our graduates

As of May 2017, the current place of work of graduate midwives who were employed in 2012 to 2016 is: 68% (55) still employed by CM Health; 11% (9) have moved to community LMC within CM Health area, and 21% (17) are no longer within the CM Health area. Of the 17 who have left CM Health, 10 have moved back to their previous area of domicile, three have moved out of the Auckland area and four are currently not working as midwives.

Our Maternity Care Provision

BY AMANDA HINKS, SERVICE DEVELOPMENT MANAGER MATERNITY SERVICES

Maternity care provision at a DHB level is shaped by the funding framework, the available workforce, the location of primary birthing facilities and maternal choice.[8] CM Health supports the national policy direction of women being cared for by a community LMC midwife providing continuity of care/carer.

A woman's choice of maternity care provider is influenced by her understanding of the system, preferences, past experience, the level of care required, proximity of facility and community LMC midwife availability.[9,10,11] All women living in Counties Manukau have the option of either engaging with a community LMC midwife or accessing maternity care through DHB provided services.

Currently if a GP sends a referral through to CM Health maternity services, it is triaged, involving a review by a specialist midwife for risk factors which could impact on the pregnancy. It is at this stage referrals either requiring further specialist obstetric advice or suitable for community LMC midwife care are forwarded accordingly.

Historically, CM Health has by default provided DHB primary maternity services to a high percentage of women, compared with other DHBs around the country because of a shortage of community LMC midwives. Over the past five years, this percentage has changed due to an increase in the number of community LMC midwives working in the district.

This increase, combined with a stable birth rate and GPs no longer offering shared maternity care, has meant that 73% of women are now booked to birth in a facility with a community LMC midwife (see Table 6). Over the past three-and-a-half years, CM Health has implemented strategies raising the importance of early engagement with a community LMC midwife including social media marketing aimed at the community.

TABLE 6.

Maternity provider at time of booking, 2016

	2012	2013	2014	2015	2016
DHB services	52%	50%	33%	31%	27%
Community LMC midwife	48%	50%	67%	67%	73%

Source: Healthware and MCIS tables. Extracted by Health Intelligence and Informatics 2017.

Table 7 shows the percentage of women by maternity provider at the time of birth in 2016. It is worth noting that a small percentage of women move to community LMC midwifery care from booking to birth through active encouragement by CM Health for women to engage with a community LMC midwife.

TABLE 7.

LMC at the time the women birthed, 2016[12]

	TOTAL	%
Community LMC	5313	73%
Shared Care	71	-
DHB midwives/ obstetric team	1963	27%
TOTAL	**7347**	

Source: Healthware and MCIS tables. Extracted by Health Intelligence and Informatics 2017.

9 Jackson C Antenatal care in Counties Manukau District Health Board; A focus on maternity Care; 2011.

10 Health Services Consumer Research. Maternity Services Consumer Satisfaction Survey Report 2007. Auckland: Ministry of Health; 2008.

11 Morton S, Atatoa Carr P, Bandara D, et al. Growing Up in New Zealand: A longitudinal study of New Zealand children and their families. Report 1: Before we are born. Auckland: Growing Up in New Zealand; 2010.

12 Bartholomew K. The Realities of Choice and Access in the Lead Maternity Care System: Operationalising choice policy in the New Zealand maternity reforms. Auckland, The University of Auckland; 2010.

13 The maternity provider reported here is the provider at the time of birth regardless of the women requiring secondary care procedures at birth.

Although GPs are now less involved in the direct management of pregnancy and birth than they were historically, primary care still has an important role to play as many women visit their primary care provider to confirm their pregnancy. This provides the opportunity for the GP to undertake an initial assessment, explain the maternity care system, and support the woman to find a community LMC midwife. It is also an opportunity to arrange recall for immunisations such as Influenza and Pertussis.

Tables 8 and 9 describe the ethnicity and deprivation of women by LMC at the time of birth using CM Health facilities. Table 10 describes the different services available to women living in Counties Manukau.

TABLE 8.

Maternity provider at the time of birth by ethnicity, 2016

ETHNICITY	COMMUNITY LMC		DHB MIDWIVES/ OBSTETRIC TEAM	
	NO.	%	NO.	%
Maaori	1003	19%	455	23%
Pacific Island	1635	31%	754	38%
NZ European/Other	1581	30%	242	12%
Indian	576	11%	319	16%
Asian Other	319	6%	120	6%
Chinese	199	4%	73	4%
TOTAL	5313		1963	

Source: Healthware and MCIS tables. Extracted by Health Intelligence and Informatics 2017.

TABLE 9.

Maternity provider at the time of birth by deprivation index, 2016

DEPRIVATION INDEX	COMMUNITY LMC		DHB MIDWIVES/ OBSTETRIC TEAM	
	NO.	%	NO.	%
1-2	309	6%	97	5%
3-4	669	13%	117	6%
5-6	400	8%	95	5%
7-8	706	13%	251	13%
9-10	3229	61%	1403	71%
TOTAL	5313		1963	

Source: Healthware and MCIS tables and Census 2013. Extracted by Health Intelligence and Informatics 2017. *This will include a small no. of births by private obstetricians.

TABLE 10.

Primary Services available in Counties Manukau

COMMUNITY LMC MIDWIFE
Community LMC midwives provide antenatal, labour and post-natal care using, primarily, a continuity of care model by the same midwife. Commuity LMC midwives are self-employed in Counties Manukau and birth women at one of the three birthing units, the woman's home or at the secondary care facility at MMH. Community LMC midwives can also choose to provide primary maternity care for women who require a secondary maternity service e.g. diabetes in pregnancy. If pregnancy or birth complications occur then care may be continued by their midwife with support from an obstetrician and/or a hospital midwife.

CM HEALTH EMPLOYED LMC MIDWIFE
This service provides continuity of midwifery care throughout pregnancy, labour, and the postnatal period including home birthing. A CM Health employed midwife works within a case-loading team model to provide care as an 'employed' LMC. They primarily care for women who plan to birth at Botany Downs or Papakura birthing units.

CM HEALTH EMPLOYED MIDWIFE
DHB employed midwives provide midwifery care services at the three birthing units.

CM HEALTH COMMUNITY MIDWIFE
When a woman cannot find a LMC or her care requirements are complex, the woman can receive care by a DHB community midwife who provides antenatal and postnatal continuity of care in the woman's home or at a community clinic. Three community health workers support the DHB community midwifery service to help engage women in maternity care. Midwife specialists for women requiring secondary and tertiary level care are also included in this group. Community midwives are located at Manukau, Maangere, and at each of the three birthing units. Intrapartum care is provided by DHB core midwives in each of the four facilities.

PRIVATE OBSTETRICIAN
Women can engage with a private obstetrician who utilises CM Health facilities for birthing.

Secondary Services available in Counties Manukau

CM HEALTH EMPLOYED MIDWIFE
DHB employed midwives work within the Middlemore Hospital facility providing primary, secondary and tertiary midwifery care as required covering antenatal, intrapartum and postnatal care.

DIABETES IN PREGNANCY
For women with previous or newly diagnosed diabetes, (Type I or II or gestational) secondary care is provided by a multi-disciplinary team which comprises an obstetrician, midwife, diabetes physician, and dietitian. Primary maternity care for these women may be provided by CM Health employed midwife specialists or DHB employed or community LMC midwives.

MATERNAL FETAL MEDICINE/OBSTETRIC MEDICAL SERVICE
Women with complex medical conditions during pregnancy are seen by the specialist team (obstetrician, medical physician and anaesthetist as required) at Manukau SuperClinic. These women are provided with midwifery care by either the women's LMC, DHB community midwife, or a CM Health employed midwife specialist. Women with complex fetal conditions during pregnancy are seen by specialist services at Middlemore Hospital.

GENERAL OBSTETRICIAN ANTENATAL CLINIC
Obstetric antenatal clinics run from Manukau SuperClinic, Papakura and Pukekohe and provide obstetric consultations for women referred by CM Health community midwives and community LMC midwives.

MATERNAL MENTAL HEALTH SERVICES
The team offers assessment, treatment and advice for women who have developed mental illness during pregnancy or up to one year after the baby is born. The team consists of mental health nurses, social workers, psychiatrist, clinical psychologists and occupational therapists with specialist knowledge and experience in this field.

SOCIAL WORKER
This role navigates women, families and midwives towards social services in the community dependent on the family's needs. The social worker facilitates liaison between various services such as Oranga Tamariki, non-governmental organisations, infant and maternal mental health and the DHB primary maternity services.

LACTATION SUPPORT SERVICES
DHB employed lactation consultant specialists and breastfeeding advocates work alongside staff in Middlemore Hospital's Maternity Wards to support women to establish breastfeeding and meet BFHI requirements.

Our Maternity Facilities

BY DEBRA FENTON

There are four facilities in Counties Manukau District where women can birth. A woman's decision about where she will give birth is influenced by a number of factors and may include advice from her midwife or GP, availability of a midwife, experience of family or friends, cultural expectations and media messages.

This chapter covers services offered by CM Health maternity facilities and services at Middlemore Hospital, the three birthing units at Botany Downs, Papakura and Pukekohe, and the community midwifery service at Lambie Drive, Manukau.

Birth volumes remain static for the year of this report, but our services need to respond to the rising complexity in health issues of women and their babies, demonstrated in our rising intervention and WIES rates. As a result, birth volumes in the community units are slightly down. The postnatal volumes continue to be maximised to enable a longer length of stay, particularly for first-time mothers in these facilities. The period of 2016/2017 has presented some challenges with a rising acuity and midwifery staffing shortages. Although most midwifery positions were filled after the new graduate intake in May 2017, midwives going on parental leave, moving into retirement, and/or moving out of Auckland have had an impact particularly in the acute areas. We're working hard on local and regional recruitment and retention strategies to overcome this. (refer to Workforce Section)

The service continues to work through a solution to support introducing more paper documentation to support the national MCIS implementation at CM Health. Alongside this, key members of CM Health management team are on the national steering group assisting the MoH to establish the roadmap for the system.

In October 2016, the long serving MMH Service Manager Kidz First and Womens Health Inpatient Services retired. A new Women's Health management structure has been established with one overarching maternity service manager (secondary, primary and community), while Gynaecology and Obstetrics services continue to be managed by the obstetrics and gynaecology service manager.

Other project or research initiatives being implemented include:

- Neonatal Pulse Oximetry screening – piloted in the three community birthing units as a feasibility study for possible national implementation (refer to page 107).
- Maternity Ward "Living our Values" project – a deep dive process evaluation to streamline care requirements for which the results will be implemented over the next few years (refer to page 84).
- Community midwifery clinics, as part of the Maangere localities, working to develop a Maternity and Child Health Hub and developing closer association with Family Start services (refer to page 69).
- The establishment of a tongue tie assessment and frenotomy credentialing pathway by the lactation team (refer to page 78).
- The Growth Assessment Protocol (GAP) programme and GROW integrated with the MCIS (refer to page 76).
- Cessation of shared antenatal care between local GPs and CM Health community midwives.
- New Graduate Midwifery Preceptoring programme across whole of service (refer to pages 20-21).
- New to service nurses orientation to the maternity programme.
- Baby Security Bracelets in all four facilities to alert staff when a baby is moved unintentionally out of area. This system will be piloted first in the community birthing units from July 2017 and then rolled out to MMH.

Middlemore

Counties Manukau's secondary/tertiary maternity services are located at Middlemore Hospital (MMH). Here we provide 24-hour care for women requiring acute antenatal, labour and birth care, as well as high risk antenatal/postnatal inpatient care. A multidisciplinary team approach is taken due to the availability of other medical sub-specialties such as anaesthetics, neonatalogy, medical physicians, mental health, operating theatre facilities and procedural treatments.

Maternity services at MMH also provide primary birthing services for women where their home is not near one of the three CM Health community birthing units. MMH is BFHI accredited and supports the establishment of breastfeeding through implementation of the ten steps to successful breastfeeding.

Also outlined is the CM Health Community Midwifery service which operates from Lambie Drive, Manukau.

Birthing & Assessment

Births Total 6397

Transfers In 577

Middlemore Birthing and Assessment (B&A), provides primary birthing services mainly for women residing locally; plus secondary maternity care where women or their babies experience complications that need additional maternity care involving obstetricians, paediatricians and other specialists; and tertiary maternity services for women and their babies who have highly complex clinical needs and require consultation with and/or transfer of care to a multidisciplinary specialist team. Birthing and Assessment integrates care with the community midwives and the three primary birthing units located within Counties Manukau.

Staff

- **68** Community LMCs who actively birth at B&A
- **9** Core associate clinical midwife managers including unit midwife manager 6 FTE
- **38** Core midwives 33.35 FTE
- **6** Registered nurses 5 Full Time Equivalent (FTE)
- **12** Health Care Assistant (HCA) 10 FTE
- **11** Ward Clerks 10.3 FTE
- **30** Bureau midwives
- **45** Antenatal and Postnatal Beds

Facility Offers

- **19** Birthing rooms
- **2** Flexi rooms can be used as birthing rooms, accommodates 4 women
- **5** Assessment rooms – total of 7 beds (2 doubles)
- **1** Ultrasound room
- **1** Clinic room
- **1** Whaanau room – not used for clinical care

Maternity Wards North & South

Middlemore Hospital currently has one large maternity floor providing antenatal and postnatal inpatient care. This area is predominately for mothers and babies requiring secondary obstetric or neonatal care, but also provides primary postnatal care for women not living in a community near Botany Downs, Papakura or Pukekohe birthing units. Maternity Ward has operated as a 45 bed unit up to the time of this report (see Living Our Values – MMH Maternity North and South Improvement Project, pg. 84-85), with this changing from July 2017.

Staff

- **38** Midwives 25 FTE
- **27** Registered nurses 25.1 FTE
- **8** Health care assistants/hospital aids 8.4 FTE
- **7** Ward clerks 6.72 FTE
- **5** Lactation consultants plus a team leader 4.5 FTE
- **3** Breastfeeding advocates 3 FTE

Other services include visiting physicians, pain team, physiotherapy, dietetics, maternal mental health services.

Facilities

- **45** Beds
- **15** Double rooms
- **15** Single rooms

- **575** Antenatal women
- **4481** Postnatal women
- Total number of women **5056**
- Total baby numbers **4404**
- Average length of stay Antenatal **2.56** Postnatal **2.76**
- Number of women post Caesarean Section **39%**
- Number of post-NNU babies **588**
- Average length of stay **8 days**

DHB Community Midwives

The Community Midwifery Service based in Manukau delivers primary and specialist midwifery care to women who elect to have care provided by CM Health, those who are ineligible for care within New Zealand, and those who are unable to secure the services of a community LMC midwife. Acting as "named midwives", the service operates from 7.30am – 4.30pm, seven days a week, every day of the year. Both locality-based clinic services and home visiting services are offered to women in the antenatal and postnatal periods. The service is actively involved in supporting research and quality improvement projects.

Total staffing

- **1** Charge Midwife Manager 1.0 FTE
- **37** Community Midwives
- **4** New Graduates on rotational placements 3.2 FTE
- **3** Community Health Workers 3.0FTE
- **1** Social Worker 1.0 FTE
- **2** Administrative staff 1.4 FTE

Speciality Needs team

- **1** ACCM 0.9 FTE (0.4 clinical)
- Diabetes in Pregnancy (c.600+ caseload 2016)
- **2** Clinical Midwife Specialists 1.4 FTE
- **4** Clinical Specialty Midwives 3.2 FTE
- **1** New Graduate Midwife on rotation 0.8 FTE

MATERNAL FETAL MEDICINE

- **2** Clinical Midwife Specialists 2.0 FTE

AUCKLAND WOMAN'S REGIONAL CORRECTION FACILITY (WOMAN'S PRISON)

- **1** Community Midwife 0.4 FTE

AUCKLAND REFUGEE RESETTLEMENT CENTRE, MAANGERE

- **1** Community Midwife 0.4 FTE

Locality MW teams

TOTAL CASELOAD 2016

- Otara/Otahuhu **452**
- Maangere/ Papatoetoe **504**
- Manurewa **458**

Birthing units

CM Health's three community birthing units are located in Botany Downs, Papakura and Pukekohe. The Birthing and Assessment Unit at Middlemore Hospital caters for primary, as well as secondary births. All three community birthing units are BFHI and support the establishment of breastfeeding. As well as being located closer to where women and whaanau live, they provide women and their families with an option to use a purpose built pool for labour and/or water birth. Guidelines for admission to community birthing units guide a woman's suitability as there are no on-site obstetricians, emergency epidural or operating theatre facilities. The community birthing units are staffed by CM Health midwives and community midwives, with some employed LMC midwives working out of Botany Downs and Papakura.

Many of the local community LMC midwives use the community birthing units as a base for their antenatal clinics. The utilisation of the existing primary birthing units for birthing is reliant on our workforce and the women we serve, appropriately screened, choosing this option.

Botany Downs

Births Total 328
Transfers In 1497

Botany Downs Birthing Unit is also known as "Whare Tapu". The conceptual meaning of Whare Tapu alludes to the most sacred beginning of life – the birth of a child. Botany Downs Birthing Unit is a purpose built facility located at 292 Botany Road, near the Botany Town Centre. Women are able to be supported by their families and significant others in a quiet and comfortable environment. Many women who birth at Middlemore Hospital choose to transfer to Botany Downs Birthing Unit for their postnatal stay.

Staff

- 16 Community LMCs who actively birth at Botany
- 20 Core midwives including Charge Midwife Manager 12.2 FTE
- 3 Community midwives 1.7 FTE
- 3 Registered nurses 1.7 FTE
- 2 Clerical administrators 1.4 FTE
- 2 HCA 1.4 FTE
- 5 Team case loading midwives

Facility Offers

- 12 Resourced beds
- 3 Double bed room
- 1 3 Beded room
- 6 Single post-natal rooms
- 4 Birthing rooms
- 2 Birthing pools
- 5 Clinic rooms

Papakura

Births Total 268
Transfers In 780
SMO Clinic Hours 8hrs

Papakura Birthing Unit is the oldest of the three primary units having celebrated its 70th birthday in 2013. Papakura Birthing Unit is located in a historical farm house and came into being in 1958 following the takeover from the Auckland Area Health Board. Papakura Birthing Unit is part of the community and generations of local whaanau choose to birth here. It is centrally located, close to the local township and public transport routes. It is also supported by a weekly obstetric clinic for secondary consultations and referrals.

Staff

- 20 Community LMCs who actively birth at Papakura
- 13 Core midwives incuding Charge Midwife Manager 9.6 FTE
- 4 Community midwives 3.2 FTE
- 1 Registered nurse 0.3 FTE
- 2 Clerical administrators 1.4 FTE
- 2 HCA's 1.4 FTE

Facility Offers

- 8 Resourced beds
- 5 Single post-natal rooms
- 1 2 Beded room
- 1 3 Beded room
- 3 Birthing rooms
- 1 Birthing room with pool
- 4 Clinic rooms

Pukekohe

Births Total 283
Transfers In 506
SMO Clinic Hours 8hrs

Pukekohe Birthing Unit is a midwifery lead maternity hospital. It supports normal pregnancy and birth caring for low risk women and babies. It provides care for the entire Franklin district as well as part of the Waikato district. This huge area encompasses the Awhitu Peninsula, East to Kaiawa, South to Mercer and Waikaretu. There is a Pukekohe Maternity Resource Centre on site, providing women with information on all pregnancy related issues, with free pregnancy tests, pamphlets, library and equipment for hire. It is also supported by a weekly obstetric clinic for secondary consultations and referrals.

Staff

- 13 Community LMCs who actively birth at Pukekohe
- 15 Core midwives including Charge Midwife Manager 10 FTE
- 2 Community midwives 0.5 FTE
- 2 Registered nurses 0.9 FTE
- 2 Clerical administrators 1.2 FTE

Facility Offers

- 8 Resourced beds
- 8 Single post-natal rooms
- 1 Double bed room
- 2 Birthing room with pools
- 3 Clinic rooms
- 1 Maternity resource centre

Birthing in Counties Manukau

BY AMANDA HINKS

CM Health supports the national priority to strengthen primary maternity services to promote and protect natural birth. This chapter highlights the voice of women who have chosen to birth at home. Their stories reflect how they found their midwife and the benefits of birthing in their home environment.

Our maternity services are provided by community LMC midwives, community DHB midwives, and a caseload DHB LMC team. There are four birthing facilities in the Counties Manukau District, as described in the two previous pages. Women with low obstetric risk have a choice of either a homebirth or three community-based birthing units to birth in. The Registering and Birthing at CMDHB Primary Birthing Unit Guideline provides guidance on whether a woman is suitable to birth at one of the three birthing units as there are no onsite obstetricians, emergency epidural or operating theatre facilities. In 2016, of the 7276 women who birthed at a CM Health facility, 12% birthed at a primary birthing unit, and in 2015, 1.7 % birthed at home.

All three birthing units are Baby Friendly Hospital Initiative accredited (BFHI) and support the establishment of breastfeeding. As well as being located closer to where women and whaanau live, they provide women and their families with an option to use a purpose built pool for labour and/or water birth.

The units are 20 – 60 minutes away from Middlemore Hospital (depending on time of day and traffic). The birthing units are staffed by CM Health midwives and DHB community midwives in each unit, with some employed team LMC midwives working out of Botany Downs. Many of the local community LMC midwives use the birthing units as a base for their antenatal clinics.

The utilisation of the birthing units is reliant on our workforce and the women we serve choosing to birth at these units. Increasing births in our birthing units will be an area of focus in the year ahead.

"Having done a hypnobirthing course I had a positive first delivery at Botany Downs [Birthing Unit] using an independent midwife. Birthing at home or at Botany were my preferences as I view birth as a natural process. The hypnobirthing course certainly reinforced the natural birthing approach.

"I accessed Botany Downs after my births and found the staff to be very helpful. My reason was to have breastfeeding support available 24/7, for reassurance during the first few days, and to know I could get some decent rest away from my young children at home. I also wanted to enjoy some undisturbed one-on-one time with my baby. Being fed well was also another plus. It's fantastic that I could be looked after by the Botany team, but also have my midwife pop in to see me and check all was well."

Jo Weaver (41-year-old mother of three, living in Botany Downs)

Who are the women who birth at community birthing units?

The use of the birthing units varies by ethnicity, (see Table 11) with the highest percentage of births occurring at the birthing units being European women (21%), followed by Chinese (19%), Maaori (16%), other Asian (9%), Pacific Island (5%) and Indian (5%) respectively. The rates for European, other Asian, and Pacific Island women have slightly reduced, but the rate for Indian women is stable. There has been a slight increase in Maaori and Chinese women using community primary birth units in 2016.

TABLE 11.

All births by location and ethncity, 2016

ETHNICITY	MMH	BOTANY	PAPAKURA	PUKEKOHE	TOTAL	PBU	% OF BIRTHS AT PBU
Maaori	1220	50	126	62	1458	238	16%
Pacific Island	2259	67	38	25	2389	130	5%
Chinese	219	45	2	6	272	53	19%
Indian	854	15	13	13	895	41	5%
Asian Other	399	26	9	5	439	40	9%
European/Other	1446	125	80	172	1823	377	21%
TOTAL	6397	328	268	283	7276	879	12%

Source: CostPro

The utilisation of our birthing units by age reflects the age of our childbearing women. Table 13 shows that if women reside near a birthing unit in the areas of Botany, Franklin, Pakuranga, Howick, Papakura and Takanini, they are more likely to birth at a unit and/or are supported by an LMC community midwife who offers antenatal care at the unit. The barriers for women using the units when they reside further away were discussed in our previous report.

TABLE 12.

All births by location and age, 2016

AGE	MMH	BOTANY	PAPAKURA	PUKEKOHE	TOTAL	PBU	% OF BIRTHS AT PBU
<20 years	374	8	23	18	423	49	12%
20-24 years	1416	56	87	56	1615	199	12%
25-29 years	1906	105	82	87	2180	274	13%
30-34 years	1642	113	46	90	1891	249	13%
35-39 years	823	39	24	25	911	88	10%
40+ years	236	7	6	7	256	20	8%
TOTAL	6397	328	268	283	7276	879	12%

Source: CostPro

TABLE 13.

All births by location and domicile group, 2016

SUBURB	MMH	BOTANY	PAPAKURA	PUKEKOHE	TOTAL	PBU	% OF BIRTHS AT PBU
Botany	179	42	-	-	221	42	19%
East Rural	161	27	2	12	202	41	20%
Franklin	576	3	21	254	854	278	33%
Howick	174	54	1	-	229	55	24%
Maangere	1017	15	3	-	1035	18	2%
Manukau	320	20	6	-	346	26	8%
Manurewa	1288	32	85	-	1405	117	8%
Otara	695	48	-	-	743	48	6%
Pakuranga	193	47	1	-	241	48	20%
Papakura	486	7	107	7	607	121	20%
Papatoetoe	650	15	1	1	667	17	3%
Takanini	198	6	37	3	244	46	19%
Non-CM Health	233	12	3	6	254	21	8%
Otahuhu	227	-	1	-	228	1	0%
TOTAL	6411	350	266	281	7308	897	12%

Source: CostPro

Woman's philosophy about birth

A women's decision about where they birth is influenced by many factors, values, beliefs, and previous experiences.

Chelsea Waru and her son Toa.

Chelsea Waru (mother of Toa, living in Maangere Bridge, Auckland) shares her family values about birth.

"My mother birthed myself and my siblings at home, so for me home birth has always seemed normal. I view childbirth as something our bodies are made to do and I had faith in my body to birth my baby without intervention. For me, the hospital is somewhere you go when you are ill and need treatment. Childbirth is not an illness or an injury; it is a natural physiological process. It seems unnecessary and counterproductive to leave the comfort and serenity of my home to birth in an unnatural environment."

Chelsea then shares how she managed to defer any negativity about her choice.

"During my pregnancy when I told some people I was having a homebirth they would look at me shocked and say "I could never do that, why would you risk it?". Without quoting the latest research and statistics, or giving them some titles of fantastic books to read or links to articles I would simply say; "to me it is riskier to birth at hospital than at home. I have had no problems with my pregnancy. I am a woman. I was born to do this. I go to hospital when I'm sick. I'm not sick, I'm giving birth".

Finding a midwife

Chelsea Waru explains her journey to finding a midwife who suited her.

"After finding out I was pregnant, I approached a midwife, who when they found out I had had a miscarriage recently, told me to give her a call once I reached 12 weeks. I found my midwife through word of mouth as well as online. I wanted a midwife who was passionate about homebirth and my midwife came highly recommended. I knew my midwife was the one 30 seconds into our first meeting. Having her as my midwife was one of the best decisions I have ever made."

Katherine Chua (mother of three from Botany) shares how she found a midwife for her homebirth in January 2017.

"I found my midwife over the internet. She is a very capable midwife with 30 years' experience and is a mother and grandmother to seven kids, so I always felt that I was in safe hands."

Close to home

The logistics of travel, parking fees, and organising care for other children during admission contributes to why some women choose a home birth or a birth closer to home in their community.

Katherine Chua explains why she chose to homebirth.

"I wanted a homebirth for multiple reasons: to avoid going somewhere unfamiliar, meeting unfamiliar people that might raise my adrenaline and slow down contractions, to avoid fussing (e.g. paying for hospital parking, buying food for myself and husband, babysitter at night for kids if we had to leave the house, worrying whether the contractions are intense enough to start driving to the birthing unit or whether it's just a false alarm).

"I've birthed two of my three kids at home with the same midwife. They were intense but fairly peaceful, private

and relaxed. Birthing at home with an experienced midwife would definitely be my first choice for any subsequent births we might have. I wouldn't consider going to hospital unless there were complications."

Jo Weaver explains birthing at home supported by her family to welcome their new baby.

"My second baby was born at home. On the day, things were too advanced for me to move by the time my midwife arrived so I happily had my daughter at home in the bath.

My third baby was a planned home birth. Both home births were so easy – I didn't have to move anywhere during labour. Birthing at home was comfortable, it also meant my five-year-old could watch her baby brother being born (this wasn't planned for, but it's great that it happened on the day). It also meant I could breastfeed my two-year-old during labour to help settle her back to sleep. My midwife was fully supportive and provided excellent guidance throughout pregnancy, during birth, and after baby was born. It was a lovely feeling to welcome my babies at home and for me to be lying in my own bed during that first 'magical' skin-to-skin contact straight after birth."

Family support

LMC community midwife Claire Eyes shares a story on a father's involvement with his wife's homebirth.

"This couple had their first baby at Pukekohe Birthing Unit. It was a straight forward birth. Although she was happy with her birth at Pukekohe, she felt her husband missed out on being involved in the birth of their first child. She talked him into supporting her having her second baby at home. Her oldest would be 13-months-old when the new baby arrived, so she felt he would not be so affected if she birthed at home."

The utilisation of community birthing units has remained stable during 2016, but consideration continues to be given to how we can better support community LMC midwives and women to choose a birthing unit. This means supporting our midwives with providing homebirth as an option for women, and to utilise birthing units to birth in and receive postpartum care. This is particularly important in light of local, national, and international research supporting improved outcomes for healthy, well screened women.

A local research study[14] has endorsed CM Health birthing units as they "offer low risk women a level of protection from operative birth, postpartum haemorrhage, admission to theatre, or other tertiary services such as Middlemore Hospital. The units offer a level of protection to the babies of low risk women from admission to neonatal intensive care and an Apgar below seven to five minutes."

The study also states, "There is a pressing need for a health promotion campaign that will re-educate women about their birth choices and reinvigorate the midwifery profession to promote birth outside of large tertiary institutions. Contemporary, high quality, contextual information promoting the safety of alternative birth settings should be made readily available to women and their families as a matter of priority."

Future focus

CM Health has recognised the need to improve the low utilisation rates of the birthing units and home birthing. A consultation evening was held with local LMC community midwives to explore the barriers and to find solutions. With the adoption of GROW, business model, Gestation Assessment Protocol (GAP), over medicalisation, and little exposure to birthing units were all cited as contributory factors. As a result of that evening, a Primary Birthing Steering Group has been setup.

The CM Health Primary/Community Birth Steering Group focus is:

- To increase utilisation of current DHB birthing facilities for birthing.
- To support an increase in women choosing home birth in Counties Manukau DHB area.

The steering group look forward to reporting back in 2018.

14 A retrospective cohort study to evaluate the effect of 'Place Presenting in Labour' and 'Model of Midwifery Care' on maternal and neonatal outcomes for the low women birthing in Counties Manukau District Health Board facilities 2011-2012.

3 Quality at CM Health

3-A Quality and Safety

Structure and Support for MQSP

BY LYN STARK, MATERNITY QUALITY AND SAFETY CO-ORDINATOR

CM Health has a number of maternity and obstetric quality forums in place enhancing the implementation of the MQSP. These include: the Women's Health Incident Meeting, Perinatal Morbidity and Mortality Meeting, Maternity Quality Forum, Obstetric Guideline Group, Obstetric Clinical Practice Group, Clinical Ultrasound Working Group and the Maternity Quality and Safety Group.

The Maternity Quality Forum had its own work plan developed in accordance with the Women's Health Quality Framework for DHB provided services. This work plan was overseen by the Women's Health Divisional Leadership Group which met on a monthly basis.

The MQSG reports monthly to the Maternity Strategic Group which in turns feeds into the Executive Leadership Team (ELT). Continued funding and extension of the MQSP has allowed CM Health to retain a MQSP co-ordinator, support the continuation of a regular consumer forum as well as fund a number of quality improvement initiatives across the maternity workforce.

The Maternity Quality Forum and Maternity Quality and Safety Group have now amalgamated their work plans to form a combined Maternity Quality Improvement Workplan. This will allow for greater transparency and oversight over the range of quality activities across all areas of maternity services.

A Women's Health (Obstetric and Midwifery) Controlled Document Co-ordination Group is now in place to ensure a multidisciplinary approach to the updating of policies, procedures and guidelines and assisting in the development of controlled documents.

Key Roles and Groups Supporting Quality and Safety Work

Maternity Quality and Safety Co-ordinator

This appointment, made in Dec 2014 for a fixed term and commenced early January 2015, was extended to 2017 with the MQSP funding contract. This role was established to support the management and implementation of the MQSP across the CM Heath district. The position involves participation in or leading projects that are part of a sector wide maternity strategy and covers service development, clinical leadership and communication involving initiatives to further improve maternity quality and safety.

Service Development Manager Maternity Services

This role was created in 2014 after the dis-establishment of the Women's Health Portfolio Manager role. The role continues to move the work from the work streams formed under the recommendations of the external maternity review into business as usual. There is a strong emphasis on stakeholder engagement with an aim of integrating services and their development between DHB and primary care.

Clinical Quality and Risk Manager Women's Health and Kidz First

This role is responsible for overseeing, co-ordinating and implementing quality initiatives, risk and incident management (including serious adverse event investigations) and the sharing of learnings and working with key stakeholders to support the provision of high quality patient care across the continuum of services in accordance with CM Health's vision and values.

Perinatal Loss Midwife Specialist

This role co-ordinates the local monthly Perinatal Morbidity and Mortality meetings, which includes hospital staff as well as community based clinicians and consumers. This role also provides continuity and support for the women and their families who have had a perinatal loss.

The Maternity Quality and Safety Group. Back row: Dr Sue Tutty, Dr Kara Okesene-Gafe, Lyn Stark, Lesa Freeman, Raewyn Makea, Amanda Jeffries, Dr Pip Anderson, Dr Sarah Wadsworth, Claire Eyes, Dr Sarah Tout. Front row: Helenmary Walker, Amanda Hinks, Mel Tapp, Larissa Pereira. Absent: Thelma Thompson, Ann Konz, Megan Tahere, Nga Marsters.

Maternity Quality and Safety Group

Funded by the MQSP, this group meets monthly and is chaired by the MQS Co-ordinator. It consists of two community LMCs, two consumers, several senior medical and midwifery clinicians, and maternity management members.

Administrator

The administrator supports the MQSG meeting and updates the actions in the Maternity Quality Improvement Workplan.

LMC Midwife Liaison

This role was appointed in February 2016 to progress early engagement, support new to area and new graduate LMCs and to enhance collegial relationships between primary and secondary care. Currently also involved in supporting planned pregnancy through providing Long Acting Reversible Contraception (LARC) insertion on the Maternity Ward.

PHO Clinical Champions

The champions were appointed by Primary Health Organisations (PHO) in November 2015 and linked with the LMC liaison role to strengthen the areas of early engagement with LMCs and improve prevention of unplanned pregnancies. These roles have now been disestablished and the work has been reprioritised to other work streams for 2017-18.

Health Intelligence and Informatics Team, Population Health Team and Public Health Physicians

These teams provide data analysis support for the MQSP and Women's Health.

Access Holders Monthly Meetings

These monthly meetings are chaired by the Maternity Service Development Manager and usually held at the Manukau SuperClinic. This venue is centrally located and has ample free parking available. A light breakfast is provided.

Maternity Consumer Panel

The panel is made up of 13 diverse CM Health consumer members and supported by an independent facilitator. The Maternity Consumer Panel meet three times a year and more often if required.

Workforce Group

The Workforce Group, who meet monthly, is made up of community LMCs from the seven geographical areas of Counties Manukau, senior CM Health midwives and managers, New Zealand College of Midwives (NZCOM) and New Zealand Registered Nurses (NZRN) representatives.

The Women's Health Incident Meetings

These meetings now have community LMC midwifery representation.

Community Birthing Steering Group

The Steering Group was established in May 2017 to promote and protect birthing closer to home, increase utilisation of the birthing units, and support homebirth to be offered as an option. The group is chaired by the Service Development Manager, Maternity Services.

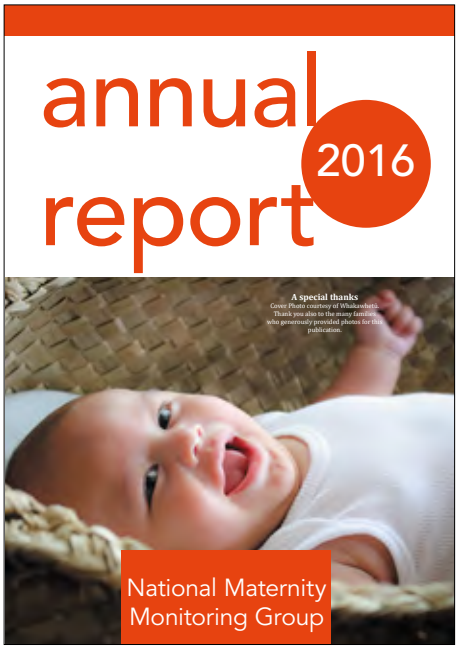
Specific Quality Initiatives Related to NMMG Recommendations and Clinical Indicator Findings

BY LYN STARK

Review of the National New Zealand Maternity Clinical Indicators, in conjunction with the NMMG recommendations and locally sourced quantitative and qualitative data, have driven the quality improvement activity undertaken in 2016/17 year.

The NMMG priority areas for action include:

- Production of an easy-to-read CM Health Women's Health and Newborn Annual Report.
- Consistency in the quality of first antenatal visit.
- Timely registration with a community LMC midwife.
- Access to ultrasound scans during pregnancy.
- National consistency in provision of co-ordinated maternal mental health services.
- Connecting and supporting our maternity consumer members.



Source: http://www.health.govt.nz/system/files/documents/publications/nmmg-annual-report-2016-dec16.pdf

The New Zealand Maternity Clinical Indicators

The MoH identified a set of 21 clinical indicators in 2015. Some of these are based on the standard primiparae in an attempt to allow meaningful comparison across DHBs, and some reflect the experience of all women who birthed, both by DHB of residence and hospital of birthing. It is important to note that while the MoH has chosen the 'standard primiparae' in an attempt to allow comparison, obesity and deprivation are not adjusted for.

The clinical indictors explored further include:

- **4-5** – Variation in Gestation at Birth: rates of induction of labour and monitoring of caesarean sections.
- **6-9** – Third and Fourth Degree Perineal Trauma.
- **10** – Caesarean Section under General Anaesthetic.
- **11-12** – Blood Transfusion during Birth Admission for Caesarean Birth and for Vaginal Birth.
- **13** – Diagnosis of Eclampsia at Birth Admission.

The following sections describe in more detail the quality activities underway as CM Health continues to improve quality and deliver on the MQSP to address the NMMG priority areas and the areas where the New Zealand Maternity Clinical Indicators have shown women living in Counties Manukau, or birthing at Middlemore differ from other DHBs in New Zealand. In addition, quality initiatives driven by local identification of salient issues (such as weight management and diabetes in pregnancy – pages 62-65) are also detailed in the following section.

Consistency in the Quality of the First Antenatal Visit

BY DR SUE TUTTY, GENERAL PRACTITIONER LIAISON

There have been a number of initiatives taken over 2016/2017 to support the enhancement of information and care received by CM Health women in their first pregnancy care visit.

The **First Contact Pregnancy Information Pack** is funded by the MQSG to go to all women on their first contact with a health professional. While many of our women see their GP for their pregnancy test, the packs are also supplied to outpatient clinics, the gynaecology ward and community LMC midwives acknowledging they may be the first point of maternity care accessed by women.

The use of the packs was audited with a survey sent out via PHOs to general practice. Of the 39 respondents 97% had seen the pregnancy packs and 92% were using the packs. The main reasons for using the packs were to inform women (97%) or to give consistent information to women at their first antenatal visit (81%).

An audit was also conducted of community LMC use of the packs. Seventy-seven percent of midwives were aware of the packs and 62% use the packs. They reported that the women who have the packs bring them to their midwife appointments 70% of the time.

The content of the pregnancy pack is dynamic. New initiatives happening within CM Health are included such as a pamphlet on the new antenatal education service and a phone contact for the Te Rito Ora breastfeeding service. Some pamphlets have been replaced by others deemed to be more appropriate. On the advice of the MSD "It's not OK" team, the family violence pamphlet was changed from the "Safety plan" to the more general "It is ok to ask for help". The immunisation card has been updated to be a fridge magnet with spaces to write in dates for the Fluvax and Boosterix appointments, as well as baby's on-going immunisations up to 15 months, so these vaccinations can be seen as part of the whole programme to keep baby safe. In response to concern that the packs given by the GPs to the women may not be taken to midwife appointments, a sticker was produced to go onto every pack reminding women to do this.

Educational opportunities

Women's Health Day, held in November 2016, was attended by 150 GPs, midwives, and practice nurses. The day included a large obstetric component covering the first antenatal visit and a session on "vulnerable women" with presentations from family violence, social work and mental health; delivered between gynaecology sessions. In March the monthly **CM Health GP Education Session** focused on the first antenatal visit and promoting primary birthing. **PHO teaching sessions** provided multiple opportunities to speak to peer groups of GPs and nurses at Procare, Alliance Health Plus and Total Healthcare.

Quality Improvement

As part of the CM Health sponsored health equity campaign a project is looking at the process of the first antenatal visit from the time of arrival of women at their GP. It is investigating opportunities to improve the quality of that interaction and the communication that comes from it. Possible strategies include, motivational counselling training for practice nurses, socialising the pregnancy packs more to the community, and making the pamphlets more relevant to our women in Counties Manukau. These strategies will be tested using PDSA (Plan, Do, Study, Act) quality improvement cycles.

Timely Registration with a Community LMC Midwife

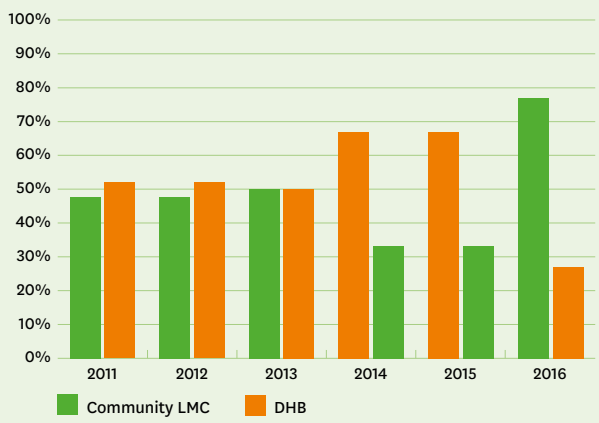
BY AMANDA HINKS

Engagement of pregnant women during the first trimester for antenatal care continues to be the focus of our activities with improved access to community LMC midwives and community DHB midwives through changes in processes.

The numbers for 2016 indicate a rise in women engaging with a community LMC midwife from 67% in 2015, to 73% in 2016 (see figure 3).

FIGURE 3.

Maternity provider at time of booking, 2011/2016



Source: Healthware and MCIS.

The registration during the first trimester (up to 13+6/40) is at 48% of pregnant women in Counties Manukau. The DHB community midwifery service supports early referral of women to community LMC midwives where possible. The community midwifery service can arrange early registration, and has access to community health workers who can locate women when there are difficulties contacting by telephone.

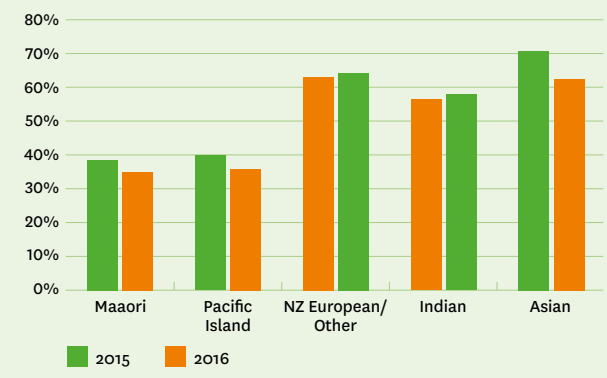
Many pregnant women in Counties Manukau are reporting their pregnancy during the first trimester to a GP, but this information is not captured locally. In Counties Manukau, engagement with an LMC does not always fall within the 10-12 weeks gestation recommended timeframe. This can be attributed to: lack of co-ordination between professional groups in primary care, lack of visibility of community LMC midwives, lack of service reach in geographical locations, complex social situations which prevent the woman from accessing care, and lack of awareness about culturally appropriate services offering education about pregnancy and parenting that can support women to find an LMC. Further barriers to early engagement appear to be health literacy and workforce numbers – having sufficient LMC community midwifery workforce to manage the demand.

Improving equitable access

Maternity care during the first trimester of pregnancy enables health promotion discussions with the pregnant woman and whaanau, and also invites early access to other support services such as smoking cessation. Access to maternity care early in pregnancy enables the pregnant woman to be screened for any medical conditions or current pregnancy complications requiring intervention which could affect the developing fetus or maternal health. Contact with a midwife or health professional supports the woman with decision making about screening for chromosomal abnormalities. Equitable access is important when women in Counties Manukau are living in high deprivation decile areas. Registration during the first trimester by ethnicity, (see Figure 4) indicates a slight decrease for Asian and Pacific Island women. This needs to be monitored over the next year to observe for a trend.

FIGURE 4.

Pregnant women registered within 1st trimester with a LMC (by 13+6/40), 2015/2016



Source: MCIS

Initiatives to improve access to midwifery care during the first trimester

This year, CM Health continues to support and nurture new graduate midwives into the community LMC workforce. Certain geographical areas where there has been an issue accessing maternity services, two LMC midwifery clinics have been set up in houses. This has led to an increase in visibility of community LMC midwives. This helps support developing stronger relationships with primary care providers through communication improvements. An example of this is the early pregnancy antenatal information sessions which are part of the pregnancy and parenting education contract with community providers. The antenatal educators have been encouraged to inform GPs they can refer pregnant women to these sessions where they will be supported to find a midwife, as well as find out how to be referred for smoking cessation support, and receive information about keeping well during pregnancy.

For young pregnant women and those with complex social situations, providers are wrapping social services around these women and their whaanau, whilst offering access to pregnancy and parenting sessions. If women or their whaanau prefer a wananga approach, services are available that suits their needs such as preparing for the birth of baby, breastfeeding, and safe sleep. All sessions are free of charge and open to women of all ethnicities and cultures. Home-based antenatal education is available for those who are unable to access the group approach to education. All pregnancy and parenting education providers are aware of the importance of the pregnant women being engaged with an LMC, and have strengthened their connections with the LMC community.

Social complexity which includes lack of access to transport, low level of health literacy, mobility, and contact with the justice system can all be barriers to early engagement for pregnancy care. DHB community midwives are actively engaging pregnant women whom have been referred to CM Health for antenatal care. Further support from social services such as Family Start, help LMC community midwives and DHB community midwives to provide midwifery care in the context of complex social situations. This support comes from more face-to-face contact between a midwife and Family Start staff, encouragement of contacting Family Start to see how they can support a woman or midwife instead of trying to adhere to an application form for services, and also understanding the process Family Start has around implementing engagement with whaanau who have been referred.

Access to Ultrasound Scans during Pregnancy

BY AMANDA HINKS

For continued improvement of maternity services to occur, the National Maternity Monitoring Group (NMMG) outlined access and quality of primary ultrasounds as an area where action was required. Attention was drawn towards the specific issues around cost, timing, quality, and the rising number of requests being made. A letter was written to the NMMG in 2017 requesting feedback about the actions to address the issues of quality of ultrasound scans. Equitable access is also a local challenge.

Access to affordable and timely ultrasound scans is affected by the demand for these services. In Counties Manukau, the implementation of screening tools for fetal growth restriction and guidelines to support fetal surveillance of high risk pregnancies has led to an increase in demand for scan services, coupled with an increasing demand for funded co-payments. Access to this service needs to be considered against the background of a high perinatal mortality rate and the low socioeconomic resources in parts of Counties Manukau.

Affordability of the co-payment is an issue for many families living in CM Health. Access to funded co-payments for ultrasound scans were introduced in 2015 in response from the DHB to midwives reporting pregnant women were unable to attend ultrasound scans due to not being able to pay the requested co-payment. Table 2 shows 52.4% of women living in Counties Manukau and birthing in 2016 lived in most deprived areas.

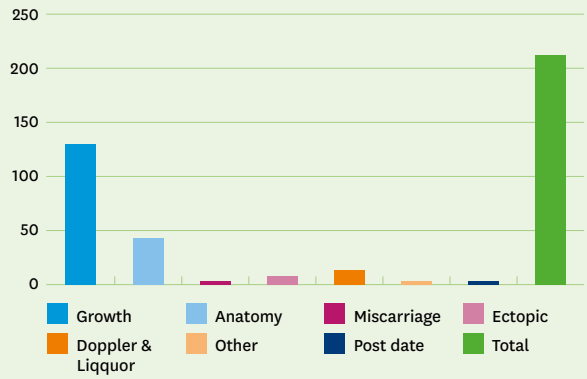
12 week scan.

Addressing equity issues in ultrasound provision

The funded co-payment system for those in financial hardship has continued through the 2016/17 year. Figure 5 indicates the type of urgent scans requested.

FIGURE 5.

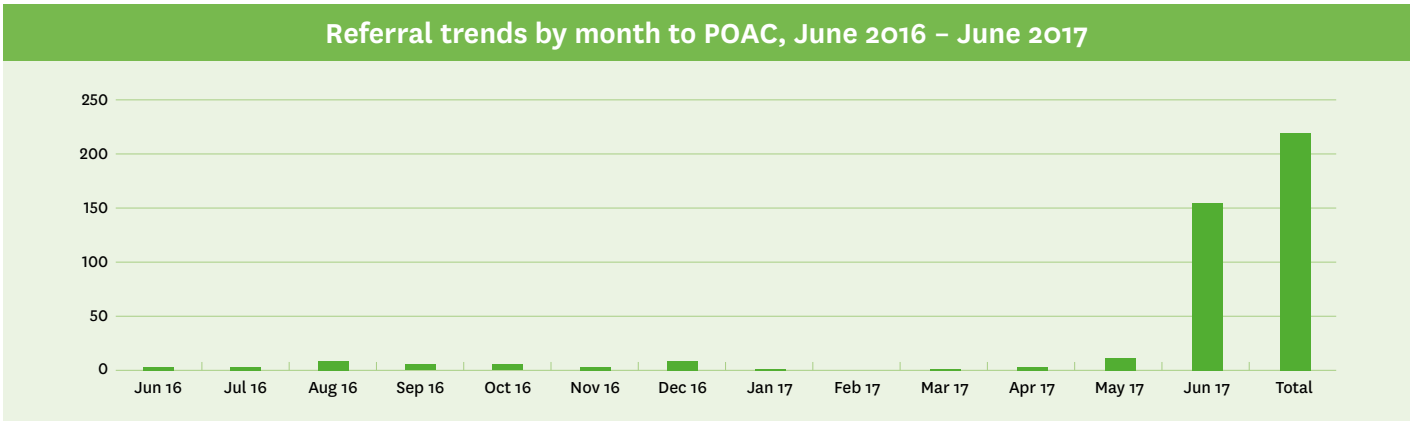
Scans requested via POAC, 2016/2017



Source: POAC

In 2016, Primary Options for Acute Care (POAC) were appointed to trial an administrative process whereby requests for urgent ultrasound scans were co-ordinated to increase accessibility. This service focused on the following criteria: malpresentation after 36 weeks gestation, growth, post-dates growth and liquor volume assessment, urgent fetal anatomy scan requirement, e.g. confirmed maternal zika viral infection, pregnancy anatomy scans after 24 weeks, and low suspicion of an ectopic pregnancy. In June 2017, POAC trialled the management of funded co-payments and access to urgent ultrasound scans, hence the large increase in numbers (see figure 6). The POAC service will now administrate the funded co-payment system with providers, and will refer all scan types if the request needs to be completed in the timeframe of a week or less.

FIGURE 6.



Source: POAC

Quality issues and reports

Other issues with ultrasound scans are quality and consistency of ultrasound scan reporting and access to the reports. There have also been concerns raised by midwives regarding conversations with women during the process, and the recalls of women where poor view of the fetus is cited. Some of these issues can be resolved at a local level and this has been encouraged. These issues have been escalated and discussed at a regional ultrasound forum for further investigation and action. The availability of easily accessing ultrasound scan reports, in an acute clinical setting, has also been identified as an issue and raised locally and nationally.

National Consistency in Provision of Co-ordinated Maternal Mental Health Services

BY AMANDA JEFFRIES, TEAM MANAGER, MATERNAL MENTAL HEALTH

Having a baby and the transition to parenthood is recognised as a socially significant event for families. The field of maternal mental health acknowledges the intertwined relationship between mother and infant, and the profound impact of the mother's mental health on the health and wellbeing of her children. Maternal Mental Health Services seek to provide the mother and her whaanau with support and treatment to promote healthy mother-baby attachment, and mental wellness for both mother and child.

The Maternal Mental Health team (MMHT) provides specialist care for women who are pregnant or up to 12 months postpartum. The MMHT see pregnant women who are experiencing moderate to severe mental health problem which is adversely impacting their pregnancy or ability to fulfil the roles and responsibilities associated with motherhood.

Over the last 12 months, MMHT have continued to develop and implement service enhancements made possible with the extra funding through the MoH (period March 2014 – June 2017). This funding was provided to enhance services to women who become acutely unwell during the latter stages of their pregnancy to 12 months postpartum. The focus for development has been the acute component of the continuum of care. This has complemented the community-based maternal mental health services already operating within the Auckland region.

The additional investment enabled:

- More women and their whaanau to be assessed and treated sooner. The capacity of Auckland regional community maternal mental health services was increased by an additional 16.5 clinical FTE. CM Health MMHT received an extra 3.85 FTE to provide a faster response.
- The development of a three-bed mother and baby unit with one bed allocated to CM Health. A weekly multidisciplinary team meeting supports regional collaboration, as well as the sharing of knowledge and expertise.
- An increase in community packages of care and respite residential services. CM Health now has a new purpose built four-bed respite facility, as well as an increase in packages of care funding to support families at home.

Evaluation and review of the regional services has identified that the additional funding has had positive benefits for service users.

Highlights from the evaluation include:

- Satisfaction with the service is high from both a service user and provider perspective.
- No recruitment issues with all additional clinical FTEs filled.
- Contacts with service users increasing by 45% since the introduction of the additional FTE in the MMHTs teams.
- The number of women accessing the service increasing by 20% since 2014.
- The packages of care utilisation increasing.
- Comments from both service users and providers reflecting the positive enhancement of services that has occurred through investment in the acute continuum of care.

"The service made a really big improvement to my health. I actually don't know what would have happened to my child or me if I hadn't got the service. I would still be sitting on the couch, looking outside and crying my eyes out, which is what I was doing most days. Or I would be running away more. That's why I'm so grateful to the service, it's a lifeline."

Service user – MMHT and Affinity Respite Service

"When a woman can access the MMHT, they are well supported. A plan is put in place, their needs are met, and there is usually a good outcome."

LMC obstetrician

"MMHT responsiveness to referrals has greatly improved. We used to complete assessment and then refer to the MMHT to take over the case if appropriate. Now referrals are triaged, and MMHT are picking up referrals as soon as they are indicated – maternal complete assessment or indicate appropriate action. In the last two days we had three maternal referrals all of which have been dealt with on the same day and probably within about four hours of the referral coming in."

Intake and assessment clinician

Further operational service improvements have been made by our MMHT to improve screening, and socialise referral pathways for pregnant/new mothers requiring support to manage mental health, alcohol and drug use and/or family violence which have led to an increase in appropriate referrals to MMHT.

MMHT interface developments

- Agencies or individuals considering a referral can access support with this process by contacting the MMHT duty clinician.
- MMHT clinicians are working alongside our Intake and Assessment team (Mental Health point of entry), reviewing all maternal referrals and advising appropriate course of action.
- A MMHT clinician provides two hours of liaison, consultation, and support on a weekly basis to the maternity ward. This comprises information about mental health services, referral processes, and assessment of clients on the ward.
- Two MMHT clinicians working in the Franklin Locality connect with the newly established Franklin integrated locality team. This is a team of mental health clinicians from across the age group subspecialities, child and adolescent and adult and older adult who work with primary care providing consult, liaison and brief interventions.
- The relocation and realignment of Infant Mental Health alongside MMHT is in process.
- Healthpoint is developing a comprehensive nationwide list of mental health and addiction organisations, and the programmes/support they each offer. These will be available on the Healthpoint website: www.healthpoint.co.nz.

MMHT shared care approach

- MMHT clinicians are allocated to pregnant women who are being treated by the Community Mental Health Centres (CMHCs). CMHCs provide on-going care for mothers with chronic mental illness. The MMHT also work alongside clinicians within the Child and Adolescent Services who provide mental health services for young mothers under the age of 18. MMHT clinicians support and work in partnership with above service clinicians to ensure that management and care provided is tailored for specific perinatal needs.
- MMHT clinicians engage with the service user's midwife to promote an integrated approach to care.

MMHT education and clinical networking

- MMHT clinicians have presented over the last year a number of road shows to spread the word about MMH services. These educational opportunities have occurred across all mental health services such as the Annual Midwives' Training Day, Collaborative Mental Health and Addiction Credentialing Programme, Manukau Institute of Technology (MIT) Nursing Student Programme, Franklin Locality team and services within Franklin area, GPs in primary care via the South Auckland Special Interest group evenings.
- There is continued engagement, information sharing, and facilitation of access to appropriate services within the Vulnerable Infant Forum and Te Ao Marama Vulnerable Women's Forum. There was good representation from our Community Midwifery Service, MMHT, CM Health social workers, CM Health Child Protection team, and Oranga Tamariki liaison social workers.
- Acute Mother and Baby Mental Health Service Forum – brought together staff delivering services across the continuum of maternal/infant mental health care including maternity services, midwives, Northland, Auckland, Waitemata, and CM Health maternal and infant services, Non-Government Organisation (NGO) and community providers. They all shared their knowledge and experiences. The forum promoted an understanding of the services provided, as well as continuing communication between providers across the regions.

Maternal Mental Health team.

Future model of care

- An Expert Advisory Group has been convened to consider the recommendations from the Counties Manukau Maternal Mental Health Service review (2015) to scope and design a future model of care for MMHT and develop a time framed implementation plan that also addresses equity of care, access, impact of risk, and expected improved outcomes.

"Mental Health Services are embarking on transforming the way mental health and addictions system in Counties works with a more integrated approach to care by having up to half of our specialist community workforce working alongside primary care, remaining a specialist workforce, but working alongside primary care to deliver a comprehensive response to physical and mental wellbeing. This will mean staff working differently in a range of ways such as undertaking consult liaison and brief intervention in primary care settings, or by using a shared care approach with primary care as part of our delivery of specialist episodic care."

Tess Ahern, General Manager and Peter Watson, Clinical Director Mental Health Services

Connecting and Supporting our Maternity Consumer Members

BY AMANDA HINKS

Our Maternity Consumer Group's membership continues to be maintained with attendance at meetings mostly at full capacity. We welcomed a teen mother and her baby in early 2017, although meeting attendance has been affected by the mothers work commitments. There hasn't been active recruitment for an Asian/Indian mother at this time as we develop and strengthen the existing group's identity and activities.

The group continues to evolve with a maternity consumer now attending a quality forum monthly meeting to provide a consumer lens over guidelines and development of consumer resources. The action points from last year's report identified a focus group approach with some of our consumers being active on a more regular basis at the quality consumer group. This model is taking time to shape as consumers balance their ability to contribute and CM Health processes align with accommodating the consumer at the table.

Along with the external facilitator of these meetings, we are now starting to use teleconferencing to communicate with our maternity quality and safety consumer representatives to organise the agenda and time needed for each meeting, to support these consumers to lead the meeting agenda, and to set the context for discussions.

Consumers have been supported financially to attend national meetings regarding maternity services. In the past year we have had consumer representation at the annual PMMRC report launch in Wellington, the Biennial NZCOM conference, and the national consumer meeting in Wellington. Consumers were also invited to express an interest in attending the Hear the Roar: why kindness and compassion matter in maternity care workshop in Hamilton where one consumer was supported to attend with a funded place.

Over the past 12 months some of the activities our consumers have undertaken include:

- The group has co-written "A Guide for speakers" so guest presenters can provide their information that engages the group.
- The dates for consumer meetings and engagement with the consumer group have been circulated in Our Maternity Monthly e-Update.
- They have also co-written an introduction to the maternity consumer group for new members to support their orientation although a glossary of terms needs to be added.
- They've contributed to the development of a resource for pregnant women titled "Eating well for pregnant women: the healthy plate concept" for pregnant women with HbA1c 41-49mmol/mol.
- The group have contributed to the Living our Values project at CM Health – giving feedback about their experience of Middlemore Hospitals' Maternity Ward.
- They've provided feedback about how to proceed with a project which invites women with type 1 diabetes to a pre-conceptual clinic visit in primary care.

Maternity Consumer Group.

Planned activities for 2017/18

OBJECTIVE	MEASURED/REPORTING	ACTIONS	OTHER STAKEHOLDERS
Increase feedback about women's health and maternity services in hospital and community.	An increase in feedback from <1%.	Invite Communications team to discuss ideas. Workshop ideas about increasing consumer feedback.	Women's Health quality and Risk Manager. Communications team.
Increase consumer participation in areas where it is difficult to effect behaviour change in our population.	When the consumer group has been consulted, then speakers are invited back to inform the group as to how their input has been used in practice.	Chairs of women's health meetings /primary care to consider how the consumer voice can be incorporated into the group's work. Topics to be discussed: maternal immunisations, early engagement, and primary birthing utilisation.	
Demonstrate consumer participation in the development of resources for women using women's health services and primary maternity services.	Consumer forum to report on activities and outcomes in annual report.	Consumers to identify if they would like to contribute to co-design projects, meeting dates for maternity consumer forum, and details circulated to wider CM Health. Communicate meeting dates and times for consumer meetings. Circulate guide for speakers. Develop a consumer input into the development of guidelines through the maternity quality forum.	

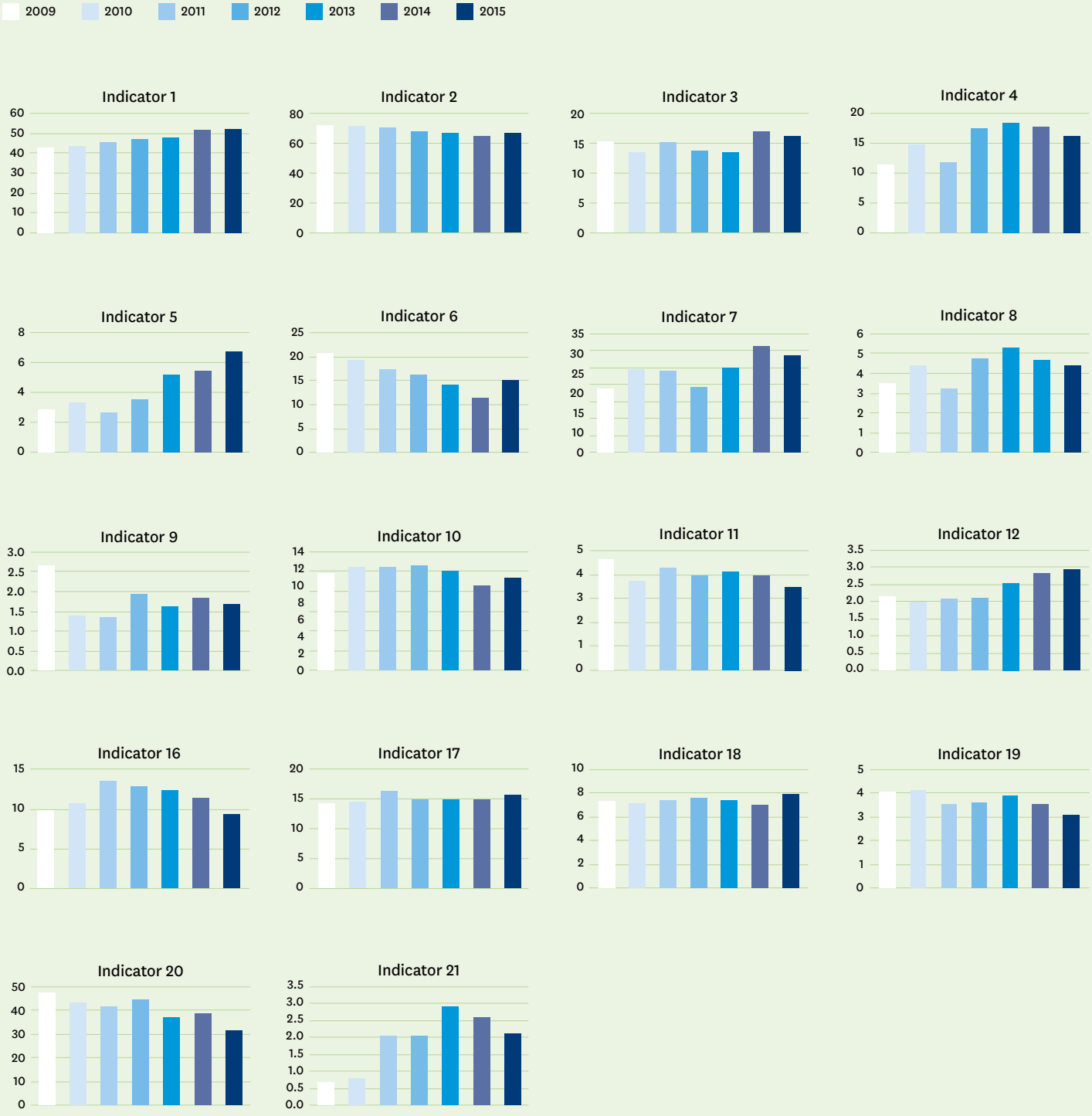
3-B The New Zealand Maternity Clinical Indicators

Counties Manukau DHB – total population

A clinical indicator is a measure of the clinical management and outcome of health care received by an individual. See Appendix 1.

INDICATOR		2009	2010	2011	2012	2013	2014	2015
1. Registration with a LMC in the first trimester of pregnancy	**Rate (%)**	**43.6**	**44.3**	**46.2**	**47.7**	**48.2**	**52.1**	**52.9**
	Numerator	2,251	2,429	2,586	2,735	2,723	3,294	3,409
	Denominator	5,167	5,484	5,594	5,738	5,649	6,324	6,440
2. Standard primiparae who have a spontaneous vaginal birth	**Rate (%)**	**72.4**	**71.1**	**70.2**	**68.2**	**66.9**	**65.1**	**67.5**
	Numerator	872	853	835	773	761	744	795
	Denominator	1,205	1,199	1,189	1,133	1,137	1,142	1,177
3. Standard primiparae who undergo an instrumental vaginal birth	**Rate (%)**	**15.3**	**13.6**	**15.1**	**13.9**	**13.5**	**16.9**	**16.4**
	Numerator	184	163	180	157	153	193	193
	Denominator	1,205	1,199	1,189	1,133	1,137	1,142	1,177
4. Standard primiparae who undergo caesarean section	**Rate (%)**	**11.4**	**14.7**	**11.8**	**17.5**	**18.4**	**17.6**	**16.1**
	Numerator	137	176	140	198	209	201	189
	Denominator	1,205	1,199	1,189	1,133	1,137	1,142	1,177
5. Standard primiparae who undergo induction of labour	**Rate (%)**	**2.8**	**3.3**	**2.6**	**3.5**	**5.2**	**5.4**	**6.7**
	Numerator	34	40	31	40	59	62	79
	Denominator	1,205	1,199	1,189	1,133	1,137	1,142	1,177
6. Standard primiparae with an intact lower genital tract (no 1st- to 4th-degree tear or episiotomy)	**Rate (%)**	**20.6**	**19.2**	**17.3**	**16.1**	**14.1**	**11.3**	**14.8**
	Numerator	220	196	182	151	131	106	146
	Denominator	1,068	1,023	1,049	935	928	941	988
7. Standard primiparae undergoing episiotomy and no 3rd- or 4th-degree perineal tear	**Rate (%)**	**18.9**	**24.1**	**23.8**	**18.9**	**24.8**	**31.1**	**28.4**
	Numerator	202	247	250	177	230	293	281
	Denominator	1,068	1,023	1,049	935	928	941	988
8. Standard primiparae sustaining a 3rd- or 4th-degree perineal tear and no episiotomy	**Rate (%)**	**3.5**	**4.4**	**3.2**	**4.7**	**5.3**	**4.7**	**4.4**
	Numerator	37	45	34	44	49	44	43
	Denominator	1,068	1,023	1,049	935	928	941	988
9. Standard primiparae undergoing episiotomy and sustaining a 3rd- or 4th-degree perineal tear	**Rate (%)**	**2.6**	**1.4**	**1.3**	**1.9**	**1.6**	**1.8**	**1.7**
	Numerator	28	14	14	18	15	17	17
	Denominator	1,068	1,023	1,049	935	928	941	988
10. Women having a general anaesthetic for caesarean section	**Rate (%)**	**11.5**	**12.4**	**12.3**	**12.5**	**11.9**	**10.1**	**11.0**
	Numerator	180	211	211	247	240	204	220
	Denominator	1,562	1,702	1,719	1,976	2,017	2,014	2,006
11. Women requiring a blood transfusion with caesarean section	**Rate (%)**	**4.6**	**3.7**	**4.3**	**3.9**	**4.1**	**4.0**	**3.5**
	Numerator	72	63	74	78	83	80	70
	Denominator	1,562	1,702	1,719	1,976	2,017	2,014	2,006
12. Women requiring a blood transfusion with vaginal birth	**Rate (%)**	**2.1**	**2.0**	**2.1**	**2.1**	**2.6**	**2.8**	**2.9**
	Numerator	150	144	145	144	157	177	182
	Denominator	7,018	7,056	7,022	6,790	6,142	6,271	6,199
13. Diagnosis of eclampsia at birth admission	**Rate (%)**	**0.07**	**0.07**	**0.03**	**0.03**	**0.01**	**0.00**	**0.0**
	Numerator	6	6	3	3	1	0	3
	Denominator	8,580	8,758	8,741	8,766	8,159	8,285	8,205
14. Women having a peripartum hysterectomy	**Rate (%)**	**0.10**	**0.08**	**0.06**	**0.13**	**0.09**	**0.02**	**0.1**
	Numerator	9	7	5	11	7	2	6
	Denominator	8,580	8,758	8,741	8,766	8,159	8,285	8,205
15. Women admitted to ICU and requiring ventilation during the pregnancy or postnatal period	**Rate (%)**	**0.06**	**0.05**	**0.06**	**0.02**	**0.02**	**0.02**	**0.0**
	Numerator	5	4	5	2	2	2	2
	Denominator	8,580	8,758	8,741	8,766	8,159	8,285	8,205
16. Maternal tobacco use during postnatal period	**Rate (%)**	**9.8**	**10.7**	**13.6**	**12.9**	**12.3**	**11.3**	**9.5**
	Numerator	726	819	1,051	974	769	754	617
	Denominator	7,407	7,642	7,750	7,578	6,235	6,644	6,486
17. Women with BMI over 35	**Rate (%)**	**14.2**	**14.5**	**16.2**	**14.9**	**15.0**	**14.8**	**15.5**
	Numerator	1,055	1,113	1,267	1,153	976	1,038	1,066
	Denominator	7,417	7,695	7,821	7,755	6,487	7,031	6,873
18. Preterm birth	**Rate (%)**	**7.0**	**6.9**	**7.1**	**7.4**	**7.2**	**6.8**	**7.8**
	Numerator	609	606	628	652	591	563	645
	Denominator	8,647	8,838	8,794	8,823	8,224	8,276	8,250
19. Small babies at term (37–42 weeks' gestation)	**Rate (%)**	**4.1**	**4.1**	**3.5**	**3.6**	**3.8**	**3.5**	**3.1**
	Numerator	325	337	285	290	292	272	233
	Denominator	8,012	8,196	8,143	8,158	7,607	7,698	7,587
20. Small babies at term born at 40–42 weeks' gestation	**Rate (%)**	**47.1**	**43.3**	**41.8**	**44.5**	**37.0**	**38.6**	**31.3**
	Numerator	153	146	119	129	108	105	73
	Denominator	325	337	285	290	292	272	233
21. Babies born at 37+ weeks' gestation requiring respiratory support	**Rate (%)**	**0.7**	**0.8**	**2.0**	**2.0**	**2.9**	**2.6**	**2.1**
	Numerator	53	66	166	167	221	199	162
	Denominator	8,026	8,212	8,151	8,161	7,613	7,702	7,593

Counties Manukau DHB – total population



Note:

Indicators 13 to 15 (showing severe maternal morbidity) are not presented as graphs due to very low numbers (see table for rates and counts).

This data is taken from the MoH website. There are limited data definitions provided to explain the choice of denominator. We have presented the data provided, acknowledging there may be limitations. Please refer to page 15.

The definition of Standard Primipara is in the glossary on page 131. BMI and deprivation are not included.

Quarterly Clinical Indicator A3 Infographic Report

BY LYN STARK & ANDREA O'BRIEN, DATA ANALYST HEALTH INTELLIGENCE AND INFORMATICS

CM Health commenced producing a quarterly infographic data poster in 2016 to raise awareness of the New Zealand Maternity Clinical Indicators, as well as to inform our maternity care providers of the outcomes of care we are providing to our women. This has been in response to the NMMG's request for the New Zealand Maternity Clinical Indicators not only to be reviewed and responded to, but to be socialised to increase general understanding of what they are and what their purpose is.

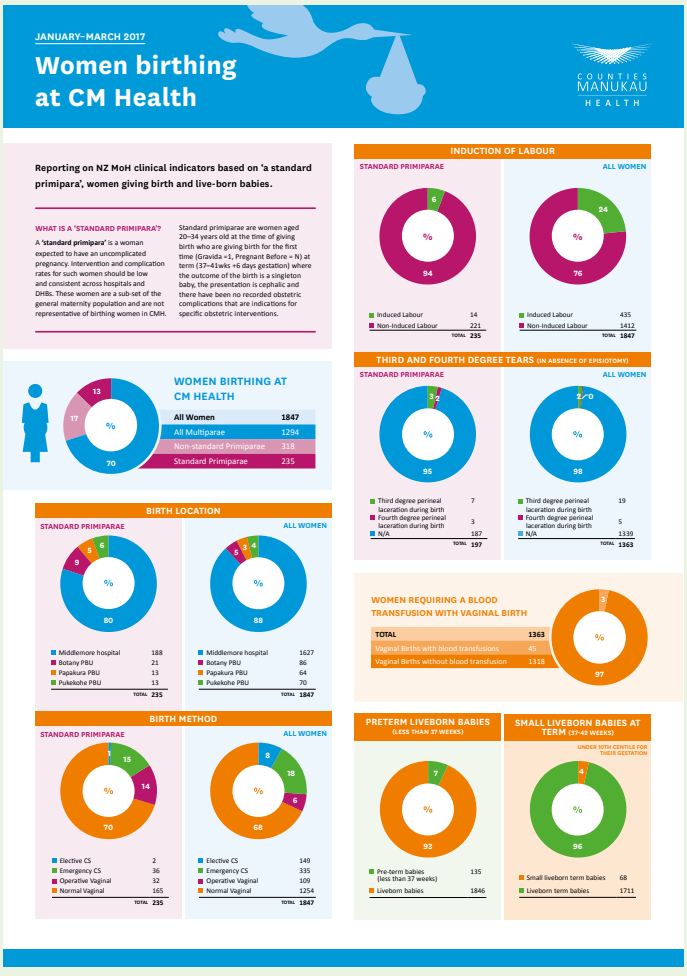
We chose infographics to present this information in an engaging way. The indicators cover a range of areas throughout a woman's pregnancy journey which include, birth numbers clarifying percentage of women who are standard primips, non-standard primips or multiparae; birth location to raise awareness of use of our primary birthing facilities, birth method, induction of labour and third and fourth degree tears comparing standard primips with all women, women requiring a blood transfusion with a vaginal birth, preterm live born babies, and small liveborn babies at term.

We've been able to gather the information requested, via MCIS, which allows us to provide current information to our workforce. Due to the focus on specific information in MCIS, a number of data quality initiatives have been implemented that have benefitted the report by providing more defined information.

An example of this is using 'CS grade' (1-3 Emergency, 4 Elective) to determine elective or emergency CS. Although the MoH indicators don't distinguish elective from emergency CS, it has proven to be meaningful locally to reflect on standard primipara who undergo elective CS. A detailed examination of these events led to discussions with MoH about the inclusion of clinical codes that would exclude women with babies in breech presentation or placenta praevia from the standard primipara group. The later would definitely be an indication for specific obstetric intervention, as per the standard primipara definition. Our feedback on these codes was appreciated by the Ministry and it is now in the process of being reviewed by the NZMCI expert group.

One of the key criteria for a standard primipara is that the baby was in cephalic presentation. This field was unpopulated in MCIS in 4% of births. After commencement of a weekly audit on this field, the rate has been reduced to 0.4%, which means more women meet the standard primipara criteria.

This project continues to evolve as we receive feedback from our maternity workforce as we look into incorporating more of the indicators.



Clinical Indicators 4-5

Variation in Gestation at Birth: rates of induction of labour and monitoring of caesarean sections

BY DR KARENA DE SOUZA, OBSTETRICS FELLOW, OBSTETRICS AND GYNAECOLOGY & DR SARAH TOUT

It is recognised that caesarean section and induction of labour rates have been increasing nationally in recent years. It is important that the reasons for planned early birth (elective caesarean section and induction of labour IOL) are evaluated and understood.

Background

The rate of planned early births and birth by caesarean sections performed at CM Health have been steadily increasing since 2009 when we began our reporting. There were a total of 2,378 planned early births in 2016. Of these, almost 75% (1802) were IOLs and 25% were elective caesarean sections. Of the women who had IOL, 42% of these were birthed by emergency caesarean section. Elective caesarean sections account for the other 25% of planned early births. In terms of gestation, only 5% of elective caesarean sections, and 6% of planned early births that ended in emergency caesarean sections, occurred before term (37 weeks) gestation.

TABLE 14.

Planned early births and gestation at caesarean section, 2016

GESTATION	INDUCTION OF LABOUR BIRTHS BY EMERGENCY CAESAREAN	ELECTIVE CAESAREAN BIRTHS
24	1	0
32	0	2
33	0	0
34	0	1
35	4	5
36	15	20
37	33	59
38	98	211
39	82	243
40	87	29
41	69	6
42	28	0
43	1	0
Total	418	576

Source: MCIS and CostPro 1334 Procedure Block Code.

Women who have undergone one previous caesarean section are referred by their LMC to obstetric services and are offered a trial of labour or an elective caesarean section as an intended mode of birth for their current pregnancy. Since 2011, the percentage of women birthing vaginally following one previous caesarean section birth has generally decreased (see Table 16). The reason for this trend is unknown however, the rate of women attempting to have a vaginal birth after one previous caesarean section increased in 2016 (36%) compared to 2015 (31%).

TABLE 15.

Mode of birth following one previous caesarean section, 2011-2016

YEAR	CAESAREAN ELECTIVE AND EMERGENCY	VAGINAL	TOTAL
2011	281 (56%)	218 (44%)	499
2012	313 (52%)	293 (48%)	606
2013	328 (64%)	183 (36%)	511
2014	366 (68%)	176 (32%)	542
2015	318 (69%)	144 (31%)	462
2016	474 (64%)	268 (36%)	742

Source: MCIS and Healthware.

Induction of Labour

Overall, the rate of IOL among standard primiparae (Clinical Indicator 5) has been lower for women at CM Health compared to the New Zealand median, although this is not statistically significant. Rates of IOL have been increasing, although in 2016, the trend appears to have stabilised (see Table 16).

Planning early birth by inducing labour occurs for multiple reasons including prolonged rupture of membranes,

avoidance of prolonged gestation, fetal growth restriction, diabetes in pregnancy, maternal medical conditions, pre-eclampsia, and reduced liquor and intra-uterine fetal death amongst others.

The IOL book introduced in 2015 clearly states the booking criteria for all IOL with the main points being:

- Postdates inductions cannot be booked before 41.5 weeks, but will be guaranteed to be induced within 48 hours.
- GDM women can be booked when they are 36 weeks gestation for IOL when clinically indicated.

The methods of induction of labour employed at CM Health are use of a Cook Cervical Ripening Balloon© (Cook catheter) as a mechanical means and use of prostaglandin E_2 in gel form as a medical means in addition to artificial rupture of membranes with oxytocin infusion. The use of a mechanical means of induction of labour is used in clinical situations when the risk of uterine hyperstimulation (as associated with the use of prostaglandin E_2) has increased maternal or fetal implications (such as in the situations of previous uterine scar, grand-multiparity or suspected fetal growth restriction (especially in the presence of oligohydramnios or abnormal umbilical artery doppler flow).

TABLE 16.

Induction of labour by parity, 2011-2016

YEAR	NULLIPAROUS INDUCTIONS	NULLIPAROUS INDUCTIONS AS % OF ALL BIRTHS	MULTIPAROUS INDUCTIONS	MULTIPAROUS INDUCTIONS AS % OF ALL BIRTHS	ALL INDUCTIONS	ALL BIRTHS	INDUCTIONS AS % OF ALL BIRTHS
2010	599	7.4%	702	8.6%	1301	8148	16.0%
2011	643	7.9%	792	9.7%	1435	8125	17.7%
2012	794	9.8%	872	10.8%	1666	8065	20.7%
2013	757	10.0%	840	11.0%	1597	7380	22.0%
2014	774	10.6%	869	12.0%	1643	7291	22.5%
2015	801	11.0%	1045	14.3%	1846	7308	25.3%
2016	619	8.5%	1183	16.3%	1802	7276	24.8%

Source: MCIS and CostPro.

Induction of Labour Audit 2016

In 2015, a new IOL booking process was introduced so that inductions could be prioritised and booked in a timely manner. Middlemore Birthing and Assessment is resourced to perform a total of five inductions per day, two in the morning (9am) and two in the evening (7:30pm) with an emergency slot at midday. The aim of the new booking system was to reduce unnecessary bookings made too far in advance which were later cancelled due to women birthing prior to the date originally booked. Previously when these slots were booked too far in advance, in some instances, it denied other women with greater clinical need appropriate timing of induction.

Although we appreciate this could be further improved with an electronic booking system.

The revised booking process included:

1. induction for prolonged pregnancy could not be booked before 41+5 weeks' gestation but a space within 48 hours would be guaranteed;
2. women with diabetes in pregnancy could not be booked until they were at least 36 weeks gestation
3. twin pregnancies could be booked 2 weeks in advance;
4. all other women requiring IOL are not booked more than 1 week in advance.

The revised booking system also captures all IOL's booked with standardised information required for carrying out audits.

Aim

An IOL audit was carried out by two of the associate clinical charge midwives (ACCMs), Ann Konz and Kirby Rainbow, in early 2017.

The aims of this audit were to assess:

1. Compliance with the Auckland Regional Consensus Guideline on Induction of Labour 2014.
2. Category of urgency of IOL at booking.
3. Method of IOL along with the reason for that method and the end outcome mode of birth.
4. Mode of birth following IOL.
5. Provision of midwifery care following IOL (community LMC midwife, core midwife or a combination of both).

Method

All IOLs booked between 1 January 2016 and 31 March 2016 were individually reviewed by the auditing ACCMs using the IOL register and MCIS to complete any missing information. The IOLs were categorised by primary indication for IOL (to account for cases with combination indications).

A total of 538 IOLs were booked during the three-month period investigated (averaging six IOLs per day) and 430 IOLs were performed (averaging 4.7 IOLs per day). This has reduced from an average of six IOLs performed per day in 2014 prior to the introduction of the new booking system. A total of 115 (21%) births occurred prior to the booked IOL. In addition to these numbers, one woman declined IOL, and two women were transferred to another facility due to the lack of a Neonatal Intensive Care Unit cot.

IOLs were categorised by urgency, and the numbers of IOLs booked and performed per category. Two-hundred-and sixteen (50%) of IOLs performed were category one or two (deemed immediate or urgent), 113 (52%) of those were category one and were required to commence within six hours (see table 17). On one day, 13 IOLs were required with seven of these being Category 1 or 2. Five of these were for prolonged rupture of membranes >24 hours.

TABLE 17.

Inductions of labour booked and performed 1 January 2016 – 31 March 2016

CATEGORY OF URGENCY	IOLS BOOKED	IOLS PERFORMED	PERCENTAGE OF IOLS PERFORMED OF BOOKED
1: within 6 hours	123	113	92%
2: in 6-36 hours	140	103	74%
3: between 36 hours and 1 week	135	116	86%
4: ≥ 1 week	141	98	70%

Source: Birthing and Assessment audit 1 January 2016 - 31 March 2016.

Findings

Thirty-one of the 430 (7%) IOLs were commenced using a Cook catheter (12 for previous caesarean section, 11 for grand multiparity and eight for fetal growth restriction). The vast majority of women induced using a Cook catheter, because of previous caesarean section, went on to birth vaginally with two women requiring caesarean section (one for unsuccessful IOL and one for fetal distress). The overall number of caesarean sections following induction of labour with a Cook catheter was 7 (22%) (see Table 18).

TABLE 18.

Mode of delivery by method of IOL 1 January 2016 – 31 March 2016

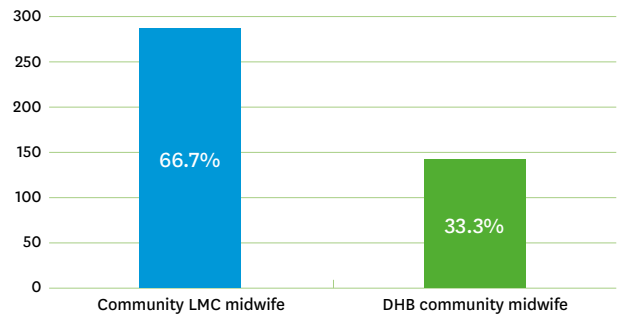
METHOD OF IOL	NORMAL VAGINAL BIRTH	INSTRUMENTAL VAGINAL BIRTH	CAESAREAN SECTION BIRTH
PGs or Other	276	41	82
Cook Catheter	22	2	7
Total	**298**	**43**	**89**

Source: Birthing and Assessment audit 1 January 2016 - 31 March 2016.

The provision of midwifery care was analysed and showed of the 430 women that underwent IOL, 287 (66.7%) were booked with a community LMC midwife and 143 (33.3%) women were booked with a DHB midwife.

FIGURE 7.

Care provider at time of booking induction of labour 1 January 2016 – 31 March 2016

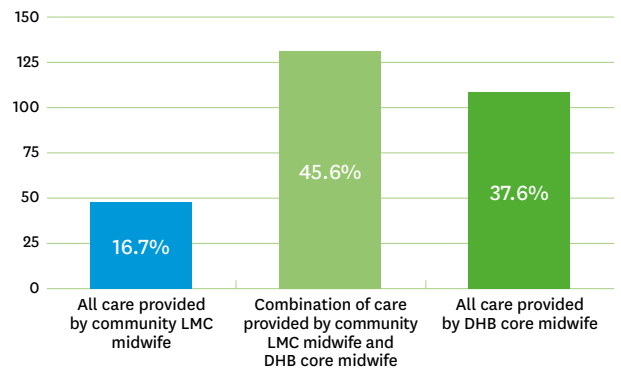


Source: Birthing and Assessment audit 1 January 2016 - 31 March 2016.

Of the 287 women booked with a LMC midwife, 48 (16.7%) had all their labour care provided by a LMC midwife, 131 (45.6%) had labour care provided by a combination of a LMC midwife and DHB midwives, and the remaining 108 (37.6%) had all their induction process and care in labour provided by DHB midwives only (see Figure 8).

FIGURE 8.

Care provider through induction of labour process 1 January 2016 – 31 March 2016



Source: Birthing and Assessment audit 1 January 2016 - 31 March 2016.

These 108 women made up 25% of the total number of women undergoing IOL in Birthing and Assessment.

Findings

From the data collected, it would appear that indications for IOL were appropriate and in line with the Auckland Consensus Guideline on Induction of Labour 2014. The introduction of a new IOL Register has improved the accuracy of recording the number of IOLs booked and the number that are actually conducted making this information more readily available for audit purposes. From the 2017 IOL audit, 50% of the IOLs booked require immediate (IOL STAT to < six hours) or urgent (IOL within six to 36 hours) commencement from booking to IOL. This has the potential at times to lead to an over demand for IOL and put pressure on the available resources in Birthing and Assessment.

The provision of labour care for women being induced highlights the collaborative approach between community LMC midwives and DHB midwives with 30.5% of the total women booked for IOL having their labour care provided by a combination of community LMC midwife and DHB midwife. Of the total number of women induced, 88.8% had a DHB midwife provide some or all of their labour care for IOL, with 25% handed over completely to secondary services for IOL. If this trend continues to increase, this will require a larger DHB midwifery workforce to provide this service.

Recommendations

1. Audit looking at induction to birthing interval of the various methods used to initiate induction and any reasons for delays i.e. midwifery workforce, over demand for service.
2. Re-audit the number of IOLs conducted to ensure there is not an increasing trend that will place added pressure on existing resources.
3. Introduce an electronic booking process.

Clinical Indicators 6-9

Third and Fourth Degree Perineal Trauma


BY DR LOUISE TOMLINSON, O&G CONSULTANT, WOMEN'S HEALTH & DR NICOLA DYKES, UROGYNAECOLOGY FELLOW

Maternal morbidity from birth related trauma to the pelvic floor has in recent years gained increasing recognition for both its implications in the immediate postpartum period, but also its longer lasting effects on the pelvic floor with age, namely urinary and faecal incontinence and pelvic organ prolapse.

What takes place in labour and birthing is vitally important to our women's pelvic floor function throughout life. A fuller understanding is being gained about levator avulsion; where the levator ani musculature attached to the inferior pubic rami partially or completely avulses during birth causing widening of the genital hiatus with predisposition to pelvic organ prolapse.[14]

The degree of morbidity is directly related to the severity of perineal trauma with first and second degree perineal trauma causing less morbidity than Obstetrical Anal Sphincter Injuries (OASIS). Those who sustain a 3A or 3B anal sphincter injury (partial or complete disruption of the external anal sphincter) have better prognosis than a women who suffers from a 3C or fourth degree anal sphincter injury (3C – involving the internal anal sphincter, fourth degree – breech of the anal mucosa) who suffer rates anal incontinence between 35-60%. Any strategy that can reduce even a fourth degree tear to a 3a tear will have major benefit for our patients.[14]

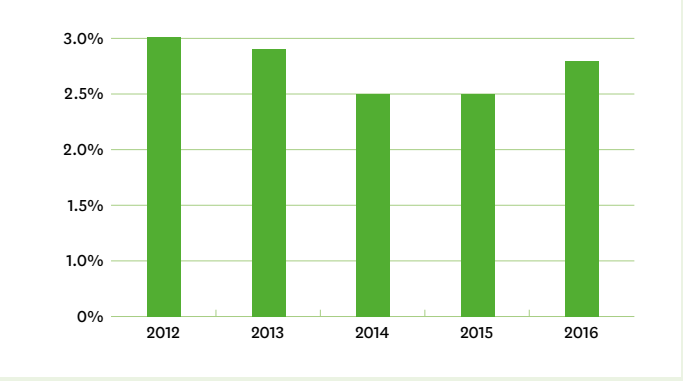
Until 2010, there wasn't much research focused on risk factors, recognition, classification and repair of perineal trauma. Worldwide, there has been an increasing trend in the incidence of OASIS. In England there was a threefold rise in OASIS rate from 2000-2011 (1.8% to 5.9%). This rising trend has also been seen in Wales, Australasia and Scandinavia.[14] A multicentre interventional study undertaken in Norway in 2004 showed obstetric anal sphincter rates (OASIS) in four Norwegian hospitals could be reduced from 4-5% to 1-2%.[15]

These results were recently replicated in England showing a reduction in OASIS rates when perineal support (flexing the head and perineal protection) was instigated at both spontaneous and assisted vaginal deliveries.[14]

At CM Health, our OASIS rate annually shows a static trend (see Figure 9).

FIGURE 9.

CM Health annual OASIS rates, 2012-2016



Source: MCIS and Healthware.

Workshops have taken place over the past decade training both midwifery and medical staff in recognition of perineal trauma with accurate classification and appropriate repair. A practical perineal repair kit has also been placed on delivery suites to assist staff with practical suturing assistance for first and second degree tears. In the past two years, attention has shifted to focusing on preventative strategies to prevent perineal trauma by implementing a perineal care guideline in 2016.

In June 2014 a prospective audit took place in Middlemore Hospital where clinical practice was evaluated at every spontaneous and assisted vaginal birth (404 deliveries). A follow-up prospective audit then took place in August 2016 following implementation of the perineal care guideline. The results showed no difference in the basic demographics of the two populations, and the assisted vaginal delivery rates and episiotomy rates were the same.

14 Naidu M et al. Reducing obstetric anal sphincter injuries using perineal support: our preliminary experience. Int Urogynaecol j (2017) 28:381-389.
15 Laine K et al. Decreasing the incidence of anal sphincter tears during delivery. Obstet Gynaecol. 2008;111(5): 1053-7.

Table 19 shows there was an overall significant difference between the two time periods (p<0.0001) in the perineal cares at the time of delivery, with "hands off the perineum" falling from 15.9% to 6.3% of deliveries, and "hands on the head and guarding the perineum" increasing from 64.8% to 77.4% of deliveries between these two time periods. There was no difference in the rates of reported antenatal massage, perineal massage, and the use of warm packs in the second stage of labour. There was an increase in the proportion of intact perineums (27.2% to 31.7%) and reduction in second degree tears (49.1% to 42%), but this was found to be not significant. The sphincter injury rate remained unchanged between the two groups with a rate of 2.2% in July 2014 and 3.9% in August 2016 (p=0.19). See Appendix 2.

TABLE 19.

One month audit of change in clinical practice at vaginal delivery between 2014 and 2016 following implementation of a perineal care guideline

Perineal support	2014 (n=372)	2016 (n=287)
Hands off the perineum	59 (15.9%)	18 (6.3%)
Hands on the head only	53 (14.2%)	20 (7.0%)
Guarding the perineum only	19 (5.1%)	27 (9.4%)
Hands on and guarding	241 (64.8%)	222 (77.4%)

Source: Birthing and Assessment audit June 2014 and August 2016.

These results show some significant changes to clinical practice with perineal support being utilised. There is however progress to be made with use of other preventative strategies to reduce perineal trauma, in particular, warm compresses which are recognised to reduce anal sphincter injury rates applied to the perineum by up to 50%. Moderate-quality evidence suggests that warm compresses and massage may reduce third and fourth degree tears but the impact of these techniques on other outcomes was unclear or inconsistent.[16]

Special thanks to Jill Bolderson for her input with the perineal tear audit 2016.

16 http://www.cochrane.org/CD006672/PREG_perineal-techniques-during-second-stage-labour-reducing-perineal-trauma.

Clinical Indicator 10

Caesarean Section under General Anaesthetic

BY DR KARENA DE SOUZA & DR SARAH TOUT

There has been a recognised increase in the rate of caesarean section over the last decade and CM Health is no exception to this trend.

Clinical Indicator 4 reflects the rate of standard primiparae women undergoing a caesarean section. Although the vast majority of women birthing at CM Health facilities do so by spontaneous vaginal birth, the overall rate continues to reduce whilst the rate of births by caesarean section continues to increase. The rate of instrumental births remains stable at 7%. Table 20 shows 68.6% of women in 2016 birthed by spontaneous vaginal birth, whilst 24.4% of women birthed by caesarean section. The rate of change in these numbers has somewhat slowed despite the continuing downward trend of spontaneous vaginal births and upward trend in caesarean section births.

TABLE 20.

Mode of birth by year, 2003-2016

YEAR	SPONTANEOUS VAGINAL	CAESAREAN SECTION	INSTRUMENTAL
2003	78.8%	14.1%	7.1%
2004	75.4%	17.1%	7.5%
2005	75.5%	17.4%	7.1%
2006	75.3%	17.6%	7.1%
2007	76.4%	16.2%	7.4%
2008	77.3%	16.7%	6.0%
2009	77.4%	16.6%	6.0%
2010	75.1%	17.9%	7.0%
2011	75.3%	18.5%	6.1%
2012	72.6%	21.1%	6.3%
2013	70.9%	22.9%	6.2%
2014	70.0%	23.2%	6.9%
2015	70.4%	22.8%	6.8%
2016	68.6%	24.4%	7.0%

Source: MCIS Extracted Health Intelligence and Informatics 2017.

There continues to be variation in the mode of delivery by ethnicity with Indian women continuing to have the highest percentage of births by caesarean section (34.2%) and the lowest rate of spontaneous vaginal birth (51.8%).

TABLE 21.

Mode of birth by ethnicity in 2016

ETHNICITY	SPONTANEOUS VAGINAL	CAESAREAN SECTION	INSTRUMENTAL
Maaori	77.8%	18.6%	3.6%
Pacific Islander	73.6%	22.4%	4.0%
Chinese	70.2%	21.3%	8.5%
Indian	51.8%	34.2%	14.0%
Other Asian	59.7%	31.0%	9.3%
European/ Other	64.6%	25.9%	9.5%
Total	**68.6%**	**24.4%**	**7.0%**

Source: MCIS Extracted Health Intelligence and Informatics 2017.

The rate of spontaneous vaginal birth continues to reduce with increasing age as the rate of caesarean section birth continues the rise with increasing age. In 2016, 54.7% of women aged 40+ years had a spontaneous vaginal birth and 40.6% of the same age range had a caesarean section birth.

TABLE 22.

Mode of birth by age in 2016

AGE	SPONTANEOUS VAGINAL	CAESAREAN SECTION	INSTRUMENTAL
<20	76.4%	15.4%	8.3%
20-24	75.0%	18.1%	6.8%
25-29	69.7%	22.8%	7.5%
30-34	64.7%	27.8%	7.5%
35-39	62.7%	32.1%	5.3%
40+	54.7%	40.6%	4.7%
Total	**68.6%**	**24.4%**	**7.0%**

Source: MCIS Extracted Health Intelligence and Informatics 2017.

At CM Health, we continue to have a high rate of caesarean sections being performed under general anaesthetic. Although the rate has actually steadily reduced since 2014, it was 12.2% in 2015 against the national mean of 8.8% by facility of birth. Our rate has reduced to 9.6% for 2016 which is more in line with the national mean albeit still above it. These numbers include women who have had a general anaesthetic only as well as a general anaesthetic on top of a regional anaesthetic.

TABLE 23.

Type of anaesthetic for caesarean section, 2012-2016

YEAR	REGIONAL	GENERAL	COMBINED	UNKNOWN	TOTAL GENERAL (GENERAL + COMBINED)
2012	84.9%	11.2%	3.0%	0.9%	14.2%
2013	86.0%	10.6%	3.4%	0.3%	14.0%
2014	86.9%	10.4%	1.7%	1.0%	12.1%
2015	85.5%	9.7%	2.5%	2.3%	12.2%
2016	89.9%	7.4%	2.2%	0.5%	9.6%

Source: Theatre Tables AN Type.

Caesarean section under general anaesthetic

We're currently taking steps to reduce this rate further and improve the process of urgent transfer to the operating theatre from the Birthing and Assessment Unit.

The Anaesthetic and Obstetric departments have collaborated on a new document which streamlines the process around transferring emergency obstetric patients to the operating theatre. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) define four categories of urgency:

- **Category 1:** urgent threat to the life or the health of the woman or fetus.
- **Category 2:** maternal or fetal compromise but not immediately life threatening.
- **Category 3:** Needing earlier than planned delivery but without currently evident maternal or fetal compromise.
- **Category 4:** At a time acceptable to both the woman and the caesarean section team, understanding that this can be affected by a number of factors.

At CM Health, we had three subsets of category 1 with varying ways in which a caesarean section is booked. In our new guideline titled "Categorisation of urgency for caesarean sections and how to arrange the procedure", the categorisation of urgency has been simplified, and the ways in which each category is booked has been defined.

The intended decision-to-delivery interval is also specified as a guideline as below. This brings the categories of urgency into line with other surgical urgencies through the hospital.

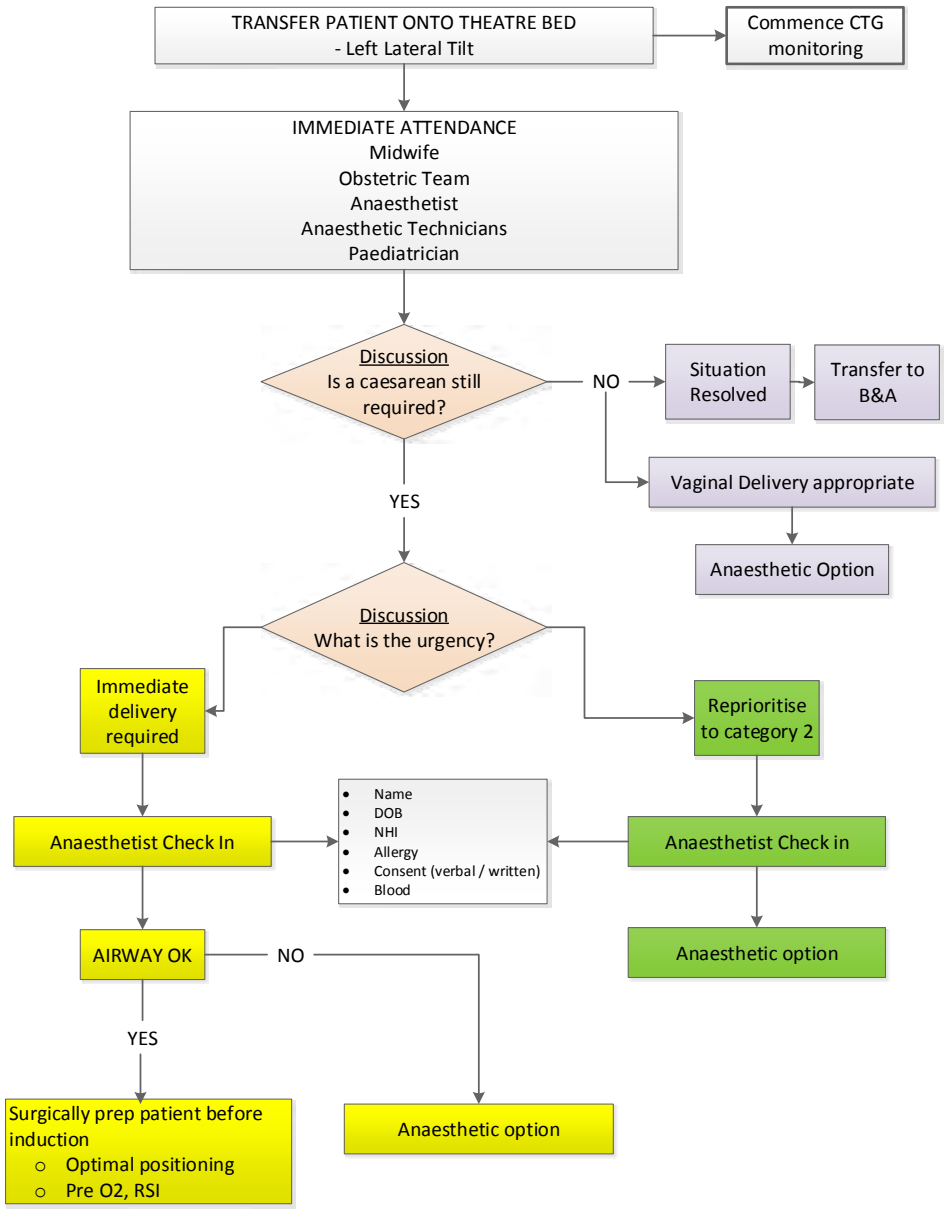
- **Category 1:** within 30 minutes.
- **Category 2:** within 60 minutes.
- **Category 3:** non-critical (within 24 hours).
- **Category 4:** non-urgent (elective list).

Overall the guideline will streamline and improve communication among the team, thereby improving patient safety. Other main points of the guideline are:

- All category 1 caesarean sections will be arranged by putting out an 888 emergency call. This call goes through the hospital Switchboard and notifies the Obstetric, Neonatal, Theatre and Anaesthetic teams by an emergency page.
- A check-in list to confirm the correct patient (name, date of birth and NHI), basic medical safety information (allergies) is known, procedural consent has been obtained (written or verbal) and the patient's blood group is known (or at least a sample is being processed) is carried out before any procedure is commenced.
- A time out will occur when the team is present in theatre for a category 1 caesarean section. This is to assess the continuing need for and urgency of a caesarean section. It allows for changes in clinical scenario which may have changed since leaving the ward.
- All patients undergoing general anaesthesia will be surgically positioned and have the operative field prepared before anaesthesia is induced.

This guideline was implemented on 1 May 2017 and aims to enable caesarean sections to occur more efficiently and further reduce the volume of caesarean sections that occur under general anaesthesia. An audit is also planned to be carried out three months after implementation so that we can review our performance and make appropriate changes as necessary. The audit will assess decision-to-delivery time against urgency category, and take into account the use of the time out and changes in category. We aim to have data from this audit to present in next year's Women's Health and Newborn Annual Report.

Caesar Stat / Catergory 1 / 888 LSCS 'timeout' in Theatre



Clinical Indicator 11 and 12

Blood Transfusion during Birth Admission for Caesarean Birth and for Vaginal Birth

BY DR KARENA DE SOUZA & DR SARAH WADSWORTH, CLINICAL LEAD OBSTETRICS, WOMEN'S HEALTH

CM Health definition of a post-partum haemorrhage (PPH) is an estimated loss of 500mls or greater in the first 24 hours following birth. It is a potentially life threatening complication of birth and remains one of the most common causes of maternal mortality worldwide.

The clinical indicator "Requirement for blood transfusion" has been chosen by the MoH to reflect the measure of blood loss during or following birth as it infamously difficult to accurately estimate blood loss.

There are many recognised risk factors for a PPH including BMI>30, hypertensive disorders, abnormal placentation, induction of labour with oxytocin, prolonged second stage of labour, instrumental birth, vaginal lacerations, large for gestational age of newborn and retained placenta.

Clinical indicators 11 and 12 reflect the requirement for blood transfusion for birth by caesarean section and vaginal birth respectively. Women birthing at CM Health facilities continue to have higher rates of blood transfusion during birth admission than that of the New Zealand median. We have also reviewed the local data for women birthing at a CM Health Unit who have had a PPH.

Although the percentage of PPH of all births at CM Health facilities has steadily risen since 2003 (see Table 24), the percentage of those women who have required a blood transfusion has remained stable and has a downward trend for the last three years.

- 24% of all women birthing at CM Health had a PPH in 2016 compared to 8% in 2003.
- The majority of PPHs continue to occur in Pacific Islander women (see Table 25).
- The majority of PPHs continue to occur in women residing in deprivation index 9 and 10 (see Table 26).
- 8.2% of women who had a PPH in 2016 required a blood transfusion compared with 16.7% in 2003. This is almost half the rate from 2015 (15%).

TABLE 24.

Percentage of PPH of all births at CM Health facilities, 2003-2016

YEAR	PPH CASES	ALL BIRTHS	% OF ALL BIRTHS
2003	521	6505	8%
2004	493	6763	7%
2005	428	6968	6%
2006	575	7821	7%
2007	802	8149	10%
2008	827	8179	10%
2009	797	8056	10%
2010	872	8148	11%
2011	750	8125	9%
2012	899	8065	11%
2013	758	7380	10%
2014	860	7291	12%
2015	1061	7308	15%
2016	1740	7276	24%

Source: MCIS and CostPro 0720 or 0721 diagnoses codes. Extracted Health Intelligence and Informatics 2017.

Although there appears to be a dramatic increase in the number of women having a PPH from 2015 (15%) to 2016 (24%), our process of documenting a PPH and commencing treatment has changed. Previously with paper documentation, the cumulative volume of blood loss may not have been as clear to the clinician. In 2016, our electronic clinical record via MCIS has made documentation more distinct with a cumulative blood loss within the first 24 hours calculated by the software with each additional entry made. In our previous practice it may have been common to consider only the immediate blood loss, thereby under reporting blood loss.

TABLE 25.

PPH by ethnicity, 2016

ETHNICITY	TOTAL	% OF ALL PPH
Maaori	308	18%
Pacific Island	651	37%
Chinese	68	4%
Indian	214	12%
Asian other	113	6%
European/Other	386	22%
Total	**1740**	

Source: MCIS and CostPro 0720 or 0721 diagnoses codes. Extracted Health Intelligence and Informatics 2017.

TABLE 26.

PPH by deprivation index, 2016

DEPRIVATION	TOTAL	% OF DEPRIVATION INDEX
1	31	2%
2	61	4%
3	118	7%
4	61	4%
5	36	2%
6	89	5%
7	154	9%
8	73	4%
9	353	20%
10	762	44%
Total	**1740**	

Source: MCIS and CostPro 0720 or 0721 diagnoses codes. Extracted Health Intelligence and Informatics 2017.

The use of MCIS makes recording the estimated blood loss easier and the cumulative volume more accurate. This may explain our increase in reported PPH rates but does not have an effect on treatment as this is based on the overall clinical picture, not a value of blood loss. This would also go some way to explaining why our transfusion rates have not increased (as is explained below). We may be able to assess the trend more accurately next year with another year of data.

Factors that affect the decision to offer and administer a blood transfusion post-birth include degree of blood loss, post-birth haemoglobin level, availability of intravenous iron and the presence of on-going blood loss. At CM Health, we have long standing issues with late booking and low ferritin stores in our population for a variety of reasons and management of chronic anaemia can be quite the challenge. We believe that these reasons contribute to our higher rates of blood transfusion in women giving birth at CM Health facilities compared to the rest of New Zealand.

Although the rate of PPH has been increasing, we are happy to see that our rates of blood transfusion have continued to fall since 2014 with a dramatic reduction in the last year (see Table 27). It is our opinion that this is attributable to our continued focus on management of iron deficiency and anaemia in an attempt to reduce the need for blood transfusion even in the event of a PPH.

TABLE 27.

Percentage of PPH requiring transfusion of all births at CM Health facilities, 2003-2016

YEAR	BLOOD TRANSFUSIONS	ALL PPH CASES	TRANSFUSIONS AS % OF PPH
2003	87	521	16.7%
2004	67	493	13.6%
2005	91	428	21.3%
2006	90	575	15.7%
2007	125	802	15.6%
2008	169	827	20.4%
2009	165	797	20.7%
2010	144	872	16.5%
2011	154	750	20.5%
2012	185	899	20.6%
2013	149	758	19.7%
2014	165	860	19.2%
2015	169	1061	15.9%
2016	143	1740	8.2%

Source: MCIS and CostPro 0720 or 0721 diagnoses codes. Extracted Health Intelligence and Informatics 2017.

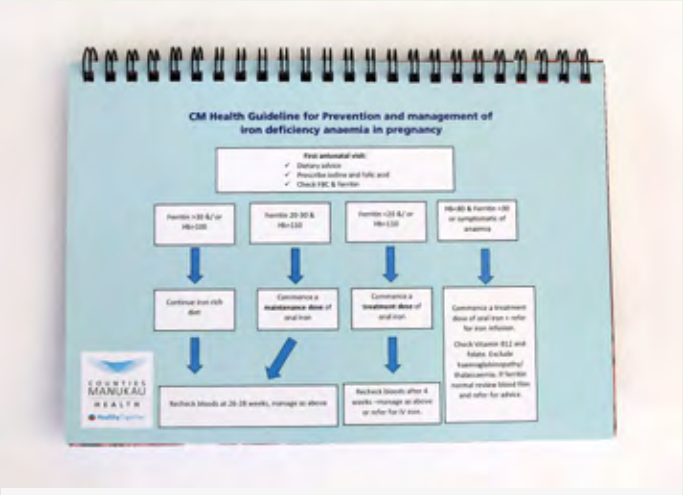
How has identifying and treating anaemia improved since last year?

In September 2015, the Iron Deficiency Anaemia (IDA) In Pregnancy and Postpartum – Prevention and Management Guideline was completed and circulated through multiple avenues giving clear guidance (see below).

The main points were:

- Inclusion of serum ferritin to booking bloods in order to identify iron deficiency as early as possible in pregnancy.
- Step wise management of low ferritin levels earlier in pregnancy with oral iron doses specified to differentiate between maintenance supplementation and treatment.
- Prescribing of subsidised supplements to reduce the patient cost of oral iron supplements.
- Streamlined referral system for IV iron infusion with Ferinject to encourage its use after appropriate trials of other routes of supplementation.

In 2016, visual resources for both practitioners and patients have been introduced. A desk flip chart provides helpful information how conversation starters and management guidance for practitioners as well as nutritional information to help educate women and their families on the effects of low iron on both mother and baby. A fridge magnet for the women and their families helps to reinforce the education they have received at their antenatal appointment and encourage dietary changes that are nutritionally beneficial. See Appendix 3.



Flipchart displaying CM Health guideline for Prevention and Management of Iron Deficiency Anaemia in Pregnancy.

Until December 2014, we used iron polymaltose as our first line therapy with the Maternity department spending approximately $250 in 2014. Since December 2014, iron carboxymaltose has been our first line therapy with substantial increase in associated cost. However, the resulting reduction in volume of blood products used since this change must be considered. Reducing the risk of requiring a blood transfusion naturally reduces the risk to the patient of transfusion reaction, acquired infection and development of red cell antibodies, all of which can have implications on the woman's future health and a future pregnancy.

Providing integrated care

In May 2015, a weekly outpatient clinic was arranged to enable women to receive an iron infusion with Ferinject as indicated by our CM Guideline for prevention and management of iron deficiency anaemia in pregnancy. This clinic ran until July 2016, and in that period, 408 episodes of iron infusion with Ferinject occurred with 396 women receiving at least one infusion of Ferinject (some women received more than one infusion in their pregnancy). Since July 2016, Ferinject has been administered in the community.

The movement of Ferinject from secondary care to general practice has meant that women can receive this treatment more conveniently and closer to home. It has also given our GPs the opportunity to re-engage with their maternity patients later in their pregnancy and catch up on Boostrix vaccinations while the women are in the surgeries.

GP Liasion Dr Sue Tutty

We hope to continue having fewer women requiring blood transfusion in the future.

Clinical Indicator 13

Diagnosis of Eclampsia at Birth Admission

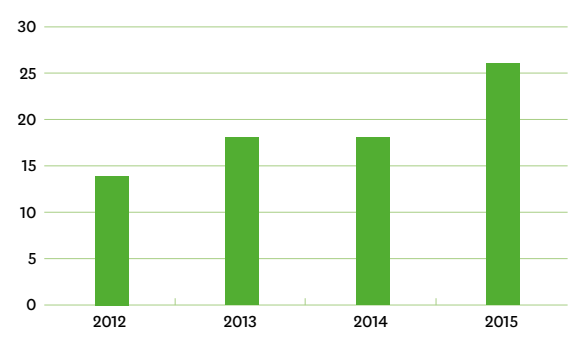
BY DR KARENA DE SOUZA & DR SARAH TOUT

Eclampsia (seizure in association with hypertension in pregnancy) remains a major cause of mortality and morbidity throughout the world.

Although it is more common in developing countries, across New Zealand there has been a rise in the number of women diagnosed with eclampsia during birth admission since 2012. Sixty-two thousand, three hundred and ten women birthed across New Zealand in the year 2012 and 14 of them were diagnosed with eclampsia during their birth admission. This number rose to 18 of 59,212 women in 2013, 18 of 59,196 women in 2014 and then 26 of 58,945 women in 2015 (see Figure 10).

FIGURE 10.

Number of women diagnosed with pre-eclampsia during birth admission New Zealand wide, 2012-2015



Source: MAT data 2015.

At CM Health:

- in 2013 one woman had eclampsia during a birth admission of a total of 7,380
- in 2015 this rose to four women with eclampsia during a birth admission of a total of 7,309
- in 2016 this remained stable with four women having eclampsia during a birth admission of a total of 7,276.

Although CM Health saw a small rise between 2013 and 2015 (see table 28), we have not seen the same trend that has been seen across the rest of the country.

TABLE 28.

Eclampsia diagnosed during birth admission, CM Health

YEAR	CASE	PARITY	BOOKING BMI	GESTATION AT BIRTH	MODE OF BIRTH
2013	1	0	unknown	32	Emergency CS
2015	1	0	29	41	Spontaneous vaginal
	2	0	30	38	Spontaneous vaginal
	3	2	21	29	Emergency CS
	4	1	34	39	Spontaneous vaginal
2016	1	1	39	40	Spontaneous vaginal
	2	3	49	38	Emergency CS
	3	0	41	40	Spontaneous vaginal
	4	0	38	40	Spontaneous vaginal

Source: MCIS and ICD10 code 014*. Extracted Health Intelligence and Informatics 2017.

We do however; have an increasing trend in the number of women diagnosed with pre-eclampsia and/or HELLP syndrome* (hypertensive disorders). Three hundred and seventy-eight women in 2013 were diagnosed with a pre-eclampsia and/or HELLP syndrome. This rose to 411 in 2014, 445 in 2015, and increased yet again to 575 in 2016. The risk factors for development of hypertensive disorders in pregnancy include obesity and diabetes in pregnancy. Rates of both of these conditions in pregnant women within the CM Health region have increased over the same time period (see Table 29). This could contribute to the increasing rates of pre-eclampsia and/or HELLP syndrome in our women.

TABLE 29.

Numbers of women with diabetes in pregnancy or BMI >30 since 2014

YEAR	NUMBER OF WOMEN WITH DIABETES IN PREGNANCY (PERCENTAGE OF TOTAL)	NUMBER OF WOMEN WITH BMI ≥30 (PERCENTAGE OF TOTAL)	TOTAL BIRTHING WOMEN
2013	498 (6.7%)	2801 (37.9%)	7380
2014	584 (8.0%)	2714 (37.2%)	7291
2015	630 (8.6%)	2749 (37.4%)	7308
2016	646 (8.9%)	2800 (38.4%)	7276

Source: MCIS and Coding. Extracted Health Intelligence and Informatics 2017.

*HELLP syndrome is a life-threatening pregnancy complication usually considered to be a variant or complication of pre-eclampsia.

3-C General Quality Initiatives

Weight Management

BY DR PIP ANDERSON

Being overweight or obese at the start or during pregnancy is recognised as a risk factor for a number of complications including gestational diabetes, preterm and post-term birth, induction of labour, caesarean section, macrosomia, stillbirth, and neonatal and maternal death.[17] BMI is now collated in the MoH Clinical Indicator 17 (page 46) which records women with BMI over 35.[18]

In 2016 data collected for women booking at a CM Health facility showed 1% of women were underweight, 32% of women had a normal BMI, 25% of women were overweight and 41% of women were obese.[19] At booking BMI was not known for 7% of women (see Table 30). The distribution of BMI varies by ethnicity with 29% of Maaori women birthing at CM Health facilities, who had a known BMI, were overweight; 50% of Maaori women were obese. For Pacific Island women when BMI was known, 20% were overweight at booking while 70% were obese in 2016.[20]

TABLE 30.

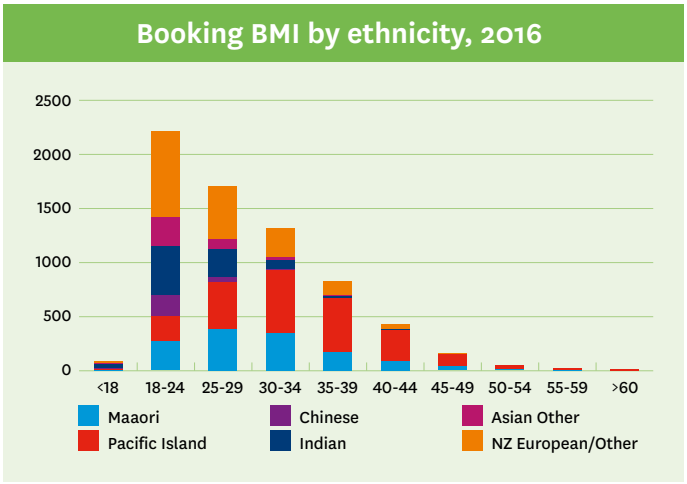
Booking BMI for women birthing at CM Heath facilities, by ethnicity, 2016

BOOKING BMI	MAAORI	PACIFIC ISLAND	CHINESE	INDIAN	ASIAN OTHER	EUROPEAN/ OTHER	TOTAL
<18	2	5	15	29	16	17	84
18-24	265	233	190	455	270	783	2196
25-29	382	430	48	254	95	487	1696
30-34	342	582	6	84	24	274	1312
35-39	172	489	1	20	6	132	820
40-44	89	280	-	7	3	42	421
45-49	35	111	-	1	-	14	161
50-54	8	38	-	1	-	4	51
55-59	4	17	-	-	-	2	23
>60	-	10	-	-	-	2	12
Unknown	159	194	12	44	25	66	500
Total	**1458**	**2389**	**272**	**895**	**439**	**1823**	**7276**

Source: MCIS Extracted Health Intelligence and Informatics 2017.

17 Jackson C. Perinatal Mortality in Counties Manukau. 2011.
18 Note this is different from the cut off used for overweight and obesity in this section.
19 7% unknown.
20 Note unknown BMI was excluded from the denominator.

FIGURE 11.



Source: MCIS

Addressing obesity is a challenging issue not least because evidence suggests the interventions that are most likely to have the biggest impact sit outside the health sector. Issues such as the wider food environment, including the availability and cost of healthy food, are significant issues that sit outside the health sector and beyond an individual's control.[21] CM Health continues to promote the MoH 'Guidance for Healthy Weight Gain in Pregnancy' and these are provided in the First Contact Pregnancy Information Pack. The importance of discussing weight gain in pregnancy has been socialised to our maternity workforce and continues to be integrated into antenatal care provision (refer to page 66). The Ko Awatea Health Equity campaign is currently leading further work in this area (refer to page 72). The three metro-Auckland DHBs are in the final stages of finalising a Healthy Weight plan for Children which takes a life course approach and includes actions from the MQSP in the antenatal section.

21 Swinburn BA1, Sacks G, Hall KD, McPherson K, Finegood DT, Moodie ML, Gortmaker SL, The global obesity pandemic: shaped by global drivers and local environments.

Diabetes in Pregnancy Services

BY DR KARA OKESENE-GAFA, LEAD CLINICIAN – DIABETES IN PREGNANCY SERVICES & LESLEY MACLENNAN, CLINICAL SPECIALIST MIDWIFE – DIABETES

Diabetes in pregnancy is associated with macrosomia in the fetus and increased risk of obesity and diabetes in childhood. Women with pre-existing diabetes are at higher risk of serious complications and morbidity.

Vision

To align with the Counties Manukau "Healthy Together" Strategic Plan 2015-2020 objective of "safe, quality healthcare services" provided by professionals whom are well trained and knowledgeable in their areas of expertise.

Aims

Decrease morbidity and mortality to the mother and baby due to dysglycemia in pregnancy by:

- optimising Glycaemic Control pre-pregnancy and during pregnancy with the aim of reducing adverse outcomes as a result of dysglycemia in pregnancy
- identifying and recognising women with diabetes in pregnancy and managing associated co-morbidities
- providing diabetes in pregnancy care which is acceptable, accessible, and efficient
- developing effective communication between health professionals, the women, and their family and whaanau regarding the importance of optimum diabetes control in pregnancy
- identifying high risk or vulnerable groups and reducing inequalities for health.

Our team

Role/contribution to Diabetes in Pregnancy (DiP) team

Specialist midwives

- The clinical midwife specialist – diabetes deliver clinical midwifery care, management, and education for women engaged in CM Health Diabetes in Pregnancy service. The midwives provide clinical leadership and diabetes expertise to the Women's Health team and external providers.

Physicians/Fellows

- Manage women who attend the outpatient diabetes in pregnancy clinics and those admitted on the maternity wards with diabetes.
- Provide support to diabetes in pregnancy specialised midwives who see and manage difficult cases or frequent non-attenders to clinic appointments.
- Assist in updating our diabetes in pregnancy guidelines.

Obstetricians, obstetrics fellow and registrars

- Review and manage women in the diabetes in pregnancy clinics and on the wards when women are admitted for blood sugar stabilisation or for any other obstetrics reasons.
- Monitor maternal (including management of co-morbidities) and fetal wellbeing as well as determine the timing of delivery.
- Assist with updating the diabetes in pregnancy guidelines.
- Provide CME for some GP practices in South Auckland e.g. new gestational diabetes guidelines and HUMBA research.

Dietitians

- Dietary education, monitor and evaluate what diabetes in pregnancy women are eating.
- In conjunction with the midwives group, education sessions are run where all diabetes in pregnancy women (apart from Type 1 diabetic and those with English as a second language) are seen at their first appointment. This first appointment includes intensive dietary education and how to use a blood sugar level meter.
- Type 1 diabetes and those needing an interpreter have a one-on-one session with a dietitian.

Community health workers

- Support the women at the education session and assist the midwives with engaging women who may be difficult to contact.

What we've achieved

The Diabetes in Pregnancy (DiP) Multidisciplinary team responds to requests and priorities for training of CM Health staff and outside providers. In 2016 we implemented an education session for all new orientating registrars to Women's Health.

The DiP midwives developed, provided and evaluated an education package for nurses at Auckland Regional Women's Correction Facility. This package will be delivered again later in 2017 with publication of an article for their national newsletter.

The Perinatal and Maternal Mortality Review Committee report (2015) suggests that strategies to reduce modifiable risk factors for perinatal mortality include pre-pregnancy care for diabetes. CM Health DiP service has responded with a project in collaboration with Ko Awatea's Health Equity campaign, joining their reducing childhood obesity work stream.

The project, *Prepare Together*, aims to establish a pathway for women with diabetes to receive advice about addressing modifiable risk factors to prepare for pregnancy and reduce the risk of perinatal complications. The processes will have feedback from patients and tested with a primary provider. The outcome of the project is to increase awareness and engagement of women in the preconception conversation with primary health.

To provide additional support for women attending the DiP clinic, the *Community Health Worker (CHW) Knowledge and Skills Framework and Credentialing for Diabetes in Pregnancy Service 2016* was developed to encourage women to engage with the service. Two community health workers have completed the framework and credentialing process, and have allocated time at the diabetes in pregnancy service.

Women diagnosed with Gestational Diabetes or type 2 diabetes are invited to the DiP group education session. The midwifery component of this session was evaluated by a health literacy consultant in 2016, and changes were made based on their suggestions. The consultant also reviewed the information given to women with updates being made in 2017. DiP midwife specialists are enrolled on the CM Health Rauemi Atawhai programme and are using the principles from the programme to review our written resources to women.

Devon, who engaged early with one of our diabetes clinical midwife specialists, and her gorgeous son Austin, who were well supported by our multidisciplinary team.

The diabetes dietitian has been involved in the development of a region wide resource *Pregnant Women at Risk of Gestational Diabetes* for clinicians in primary care to give to women with HbA1c at booking of 41-49. This has been distributed to community LMC and DHB midwives, and through the Auckland Regional Health Pathways website to Primary Care.

The DiP team continues to be involved in quality improvement and liaison with other providers. A DiP midwife contributes to the CM Health Insulin Safety Group. The DiP midwives have also been involved in localising the *Auckland Regional Health Pathway for Diabetes in Pregnancy* programme and are currently in consultation with Waikato DHB and Auckland DHB clinicians in standardising information provided to women across the region. A diabetes midwife and dietitian are participating in the CM Health *Planned Proactive Nursing Care of People Living with Long Term Conditions in Orata-Maangere* Project.

Nutrition Workshops

BY ELAINE CHONG, DIETITIAN, DIABETES

The Dietary and Lifestyle Advice workshop pilot was completed in August 2016. It provided health workers (especially practicing midwives) the opportunity to:

- Clarify the *MoH Guideline for Screening and Diagnosis of Gestational Diabetes Mellitus (GDM)* and *CM Health Women's Health Algorithm for Screening and Diagnosis of GDM*.
- Discuss and define the 'Dietary and Lifestyle Advice' for pregnant women with HbA1c 41-49mmol/mol.
- Feedback on the relevance of the workshop curriculum and the nutrition pack in their area of practice.

A six-month post-workshop electronic survey was emailed to 24 attendees. Nine responded, giving a response rate of 38%. Six of the nine respondents were practicing midwives, two were DHB employed, and four were self-employed.

All respondents reported they were able to apply the knowledge gained in the workshop and use the nutrition packs in their area of work. They also indicated that the workshop curriculum and the nutrition packs would benefit all midwives working with pregnant women in the CM Health area.

The e-Learning was proposed as an alternative option to the face-to-face workshop. One respondent suggested the curriculum and resources could be made available through the midwifery training programme.

Outcomes from the pilot:

Nutrition Messages

These nutrition messages are not ethnic or demographic specific.

- The Healthy Plate concept: ½ free vegetables (fibre), ¼ protein and ¼ carbohydrate, with recommended portion sizes.
- Keep meals low in fat and low in salt.
- Avoid sugar-sweetened beverages – choose water.
- Three regular meals spread over the day and three small snacks as required.

Framework for Healthy Eating for Pregnant Women

Outcome from the Dietary And Lifestyle Advice Workshop Pilot

Elaine Chong (Diabetes Dietitian) , Carl Eagleton (Physician), Kara Okesene-Gafa (Obstetrician)

Figure 1: Nutrition Pack

Figure 2: Nutrition Resources

Figure 3:

Introduction

In 2015, Counties Manukau Health (CMH) Maternity Quality & Safety Programme funded six "Dietary and Lifestyle Advice" workshops for health professionals who manage pregnant women with HbA1c 41-49mmol/mol. These workshops were introduced to support the implementation of the *'Ministry of Health (MoH) Guideline for Screening and Diagnosis of Gestational Diabetes Mellitus (GDM).'*

Aims

- To support health professionals in providing consistent nutrition advice for pregnant women at risk of GDM.
- To identify ongoing support and resources required by health professionals to deliver 'Dietary and Lifestyle Advice' as outlined in the MoH Guidelines.

Methods

The workshop curriculum was developed by a senior diabetes dietitian and was delivered in conjunction with a diabetes midwife and a Green Prescription advisor. Attendees were

- given a ready-to-use nutrition pack (Figure 1),
- invited to review nutrition resources (Figure 2 showed the final resources),
- Invited to complete pre-workshop and post-workshop questionnaires and
- invited to participate in a six-month post-workshop electronic survey-*SurveyMonkey*

Results

Seventy-four health professionals attended, 2/3 were midwives. Fifty-three attendants completed the written feedback, giving a response rate of 72%. The six-month post-workshop *SurveyMonkey* was emailed to 24 attendees, nine responded. All respondents reported the workshop curriculum and the ready-to-use nutrition pack would benefit all midwives working with pregnant women at risk of developing GDM.

Self-reported confidence in providing 'Dietary and Lifestyle Advice' after the attending the workshop (n=45).

Conclusion

The pilot workshops were well received. It provided opportunities for health professionals (especially practicing midwives in Counties) to

- discuss and define the 'Dietary and Lifestyle Advice' for pregnant women with HbA1c 41-49mmol/mol in CMH and
- feedback on the relevance of the workshop curriculum and the ready-to-use nutrition pack in their area of practices.

The pilot also provided a framework to promote healthy eating for pregnant women in CMH. The key nutrition messages are not ethnic specific, nor are they demographic specific. Eating healthy is more than acquiring the right knowledge, it requires various skills. It requires food literacy, i.e. cooking skills (Figure 3), budgeting and preparing meals-Healthy Plate Concept (Figure 2). Improving food literacy are essential in the success of nutrition intervention.

Acknowledgments: *Counties Manukau Health Maternity Services, Diabetes Dietitian: Melanie Tapp, Diabetes in Pregnancy Midwives: Isabella Smart, Lesley Maclennan, Judy Graham, Emma Calnan, Diane Selves, Karen Strugnell, Maternity Quality and Safety Co-ordinators: Lyn Stark, Amanda Hinks, Green Prescription-Health & Wellness Operations Manager:* Alannah Collins.

Dietary-And-Lifestyle Training

- On-going in-house training for the CM Health Midwifery Service and the wider CM Health staff working with pregnant women.

Teaching Resources for Health Workers (Refer to Figure 1)

- 'Living life well' plate by Diabetes New Zealand
- Healthy Weight Gain in Pregnancy by MoH
- How Much Sugar in That Drink? by Healthy Promotion Agency

Written Resources for Pregnant Women

These resources reiterate the nutrition messages. Electronic copies of these resources are available for CM Health workers.

- Eating Well for Pregnant Women – The Healthy Plate Concept.
- Meal Ideas for Pregnant Women – The Healthy Plate Concept.

Diabetes in Pregnancy Service

BY DR KARA OKESENE-GAFA

Research

The DiP team actively supports the **GEMS** and **TARGET** studies co-ordinated by the Liggins Institute – The University of Auckland. These clinical trials are seeking to answer important clinical questions about the diagnosis and treatment of gestational diabetes (GDM); the results of which will influence future care for pregnant women and their babies in New Zealand.

The **GEMS** study is comparing the effect of two different criteria for diagnosing GDM on health outcomes for women and their infants: the current NZ thresholds for the oral glucose tolerance test (oGTT) in pregnancy versus the lower IADPSG thresholds. The GEMS study is asking the question 'which threshold is best for the health and wellbeing of mums and babies?' The 2014 MoH GDM guidelines recommend that pregnant women should be offered participation in GEMS as one of their options for pregnancy screening for diabetes. To date, over 1000 women from Counties Manukau and Auckland DHBs have joined the study. The CM Health DiP team see women who have been diagnosed with gestational diabetes by either threshold, and the team is blinded to the allocation group and actual OGTT results (unless in the frank diabetic range). The GEMS study team is keen to maximise the involvement of Counties Manukau women in this important research. All women with a singleton pregnancy and without prior history of GDM or diabetes are eligible to participate.

The **TARGET** study is comparing less tight with tighter treatment targets for glycaemic control for women with gestational diabetes mellitus (GDM). The TARGET study is asking the question, 'is it best for women with GDM to follow less tight or tighter blood sugar targets?' In this study, the hospital begins by using less tight targets and moves to tighter targets at a randomly specified time point. As of 1 March 2016, the diabetes service has used the tighter glycaemic targets for women with diabetes in pregnancy. Counties Manukau is one of the busiest sites participating in this multi-centre New Zealand-based randomised controlled trial. All ten hospitals participating in TARGET have now been randomised to the tighter glycaemic targets. GEMS research midwives around the country enrol women to the study, with recruitment to be completed by October 2017. The TARGET study team is grateful to DiP health professionals for endorsing the glycaemic targets at the various time points, and for successfully implementing the change from 'less tight' to 'tight'. The study results will provide much needed data regarding effective treatment for women with GDM.

The **HUMBA** study has now completed recruitment of 230/230 women. We are continuing with the follow-up of these women. We have secured funding from Cure Kids New Zealand for the 12 month follow-up of children in this study. We look forward to the results from this important study. It may identify ways we could help women with a high BMI during pregnancy improve health outcomes for them and their babies.

Maternity Clinical Information System

BY DEBRA FENTON & HAYLEY GILL, MCIS SPECIALIST MIDWIFE

The National Maternity Clinical Information System (MCIS) was implemented service-wide by October 2015 following the recommendations of the CM Health External Maternity Care Review in 2012.

The MCIS team: Elf Eggimann, Hayley Gill and Karlene Clarke.

Electronic clinical records represent significant improvement in the ability to rapidly retrieve legible information. Almost every industry is now computerised and digitised for rapid data retrieval and trend analysis. It's imperative that this improvement extends to all areas of the health sector in order to continue to improve service delivery.

All women booked with CM Health maternity services have an electronic record created within the MCIS system which is used across midwifery and obstetric services to facilitate and ensure prompt and appropriate service delivery is achieved. These records enable better and more seamless integration with primary and secondary care, and ensure that the women's record essentially 'travels with her'.

The past year has seen MoH increase its involvement with the vendor thereby optimising the system development and enhancements that have been delivered to us. As key stakeholders, we have worked closely with MoH and Clevermed to make improvements to the system for end users. We have seen significant changes to the risk management plan, and see the value added to identifying key information at a glance.

Ongoing concerns remain with transition to the adaptation of an electronic system which currently needs to be complemented by a small number of key paper forms. Over the last year the service has explored the possibility of a solution to support introducing more paper documentation to support the national MCIS implementation at CM Health. It has been determined the safest option at this point in time is to continue with the current state until further development has progressed to meet clinical needs. In the meantime, we are committed to undertaking a systematic approach to standardising the quality and the consistency of information input and review over the coming months. All users will be encouraged to engage in further learning opportunities, and we have increased MCIS support staff. Key members of the CM Health management team are on the national steering group to assisting MoH to establish the roadmap for the product.

Communication lies at the heart of MCIS, as well as improved women/clinician interface, improved access to medical records, improved understanding of clinical plans and diagnoses, and one touch access to history at the click of a mouse.

Maangere Hub

BY ISABELLA SMART, COMMUNITY CHARGE MIDWIFE MANAGER

In January 2017, a team of 10 DHB employed community midwives who deliver midwifery care to women in the Maangere area, moved into their new premises at 6 Waddon Place. Being part of the Maangere Health Hub has enabled the midwifery service to link up with their DHB colleagues who provide a wide range of health care services.

Midwives are working alongside diabetes services, ophthalmology, renal services, the local ultrasound scanning provider, district nurses, hearing services, and a host of other health care providers. The long-term plan is to create a maternal and child focused hub for the local community. This will bring services closer to home, and improve accessibility for mothers and babies who usually have to travel to Middlemore Hospital for specialist appointments. The building is still in the process of refurbishment, but having two allocated clinic rooms for midwifery is a real bonus. The midwives offer clinics every day – Monday to Friday. There are usually two midwives on duty each day.

The Maangere team midwives cared for over 450 women during the last year, with this year's referral numbers being up. This vital link with the local community enables women to seek maternity care early in their pregnancy in their area. To promote the Hub in the community, the building manager has been in contact with the local Maangere Arts Centre (Ngaa Tohu o Uenuku). Artists there are going to provide items to help decorate and enliven the building, adding a true local flavour.

Family attending the Maangere Hub Midwife Clinic.

Translation of Pamphlet Information Project

BY LYN STARK

In 2016, the MQSG received a proposal from Conny Krebs, Clinical Midwife Educator/WH Consumer Information Co-ordinator, recommending that the MQSG support the translation of 14 consumer key information pamphlets into the main languages spoken in Counties Manukau.

Conny Krebs

Background

The need for translating Women's Health pamphlets into the main languages spoken in Counties Manukau had been identified by midwives, as well as obstetricians holding antenatal clinics in the community. For a large percentage of the women and families living in Counties Manukau, English is not their first language.[22] At the time of the proposal, only three of the 70 plus pamphlets available on pregnancy and childbirth had been translated in Samoan and Tongan – 'Are you eligible for free Maternity Care in New Zealand', Induction of Labour, and My Baby's Movements.

Having access to information is important, but only by having access to appropriate information can engagement with the health information be established. This has also been recognised by the New Zealand Code of Health and Disability Service Consumer Rights which includes the Right to Effective Communication and Right to be Fully Informed.[23]

When a woman cannot read information she receives, her right to make an informed choice is limited and impacts on her ability to interact effectively with healthcare professionals. This in turn may restrict her ability to fully participate in the healthcare system and she may miss out on key aspects on her care.

Giving women in the Counties Manukau area appropriate information in a language they can understand aims to promote empowerment, which in turn is vital for achieving healthy communities.

The decision was made to include translations in Hindi, as well as Maaori, Chinese, Samoan and Tongan.

The translated pamphlets available are:

- Birthing your placenta
- Vitamin K
- Jaundice
- Induction of labour (available in Samoan)
- Pain relief choices in labour
- Early labour
- Diabetes during pregnancy
- Iron & Anaemia
- Early postnatal discharge
- Premature labour
- My baby's movements
- VBAC
- Twins – identical and non-identical.

The pamphlet project was completed in April 2017. All pamphlets are available for maternity carers to access and use for women and whaanau of Counties Manukau. These are also free to be reproduced, with acknowledgment to CM Health, to all other DHBs via the MQSP co-ordinators national group.

22 Demographic Profile: 2013 Census Population of Counties Manukau.
23 Health & Disability Commissioner. The Code (full). http://www.hdc.org.nz/the-act--code/the-code-of-rights/the-code-%28full%29 [Access 09.05.2016].

Health Equity

BY CINDY BLACKWELL, IMPROVEMENT ADVISOR, KO AWATEA

Ko Awatea and CM Health have initiated a Health Equity campaign which aims to contribute to the CM Health Strategic Plan 'Healthy Together' of achieving health equity for Maaori, Pacific, and high needs communities of Counties Manukau by 2020.

All people in our communities have the right to live a healthier life. The Health Equity campaign supports the achievement of this goal. By working together across health services, community agencies, and the wider community, we believe we can achieve the campaign vision of reducing the health disparities experienced by Maaori and Pacific communities by December 2020 in two key ares:

- Fostering healthy communities, healthy people, and whaanau/families by identifying and testing new innovations and accelerating the spread of effective interventions to address childhood obesity disparities.
- Supporting our health services by:
  - Building the capability of our workforce to identify and test innovations and to apply a robust and consistent health equity approach within CM Health.
  - Increasing the proportionality of our workforce to be culturally reflective of the Counties' population.

Our projects in the 'Healthy Children, Healthy Weight' work stream

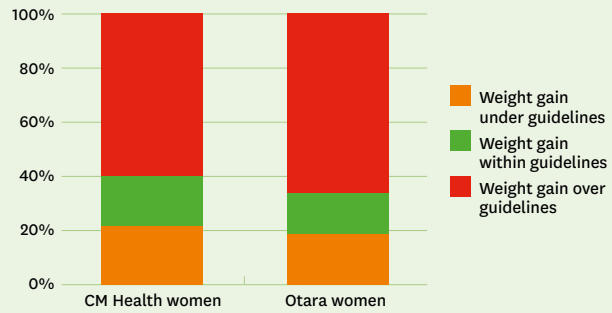
The nutritional intake of the mother during pregnancy is very important. If a high calorie, low nutrient dense diet is consumed, excessive gestational weight gain (GWG) can result. Excessive weight gain affects the health of the mother and the baby. The lifelong consequences for the baby include a fourfold increased risk of large-for-gestational-age (LGA) infants, a consistent increase in Body Mass Index (BMI) and blood pressure, and an abnormal metabolic profile in childhood and early adult life.[24] Pregnancy is an opportune time to improve the mother's nutritional intake which aims to break this cycle.

Data captured in MCIS for women domiciled in Counties Manukau tell us that 60% of women who birthed in 2016 (see Figure 12) had an average weekly weight gain that exceeded the Institute of Medicine's Guidelines for Healthy Weight Gain in Pregnancy. In Otara (where Health Equity Project teams are focusing initially as they test change ideas), 66% of women (see Figure 12) had an average weekly weight gain that exceeded the guidelines.

FIGURE 12.

CM Health and Otara women who birthed in 2016

Weight gain during pregnancy of the women who had a booking BMI recorded <20 weeks gestation and a final weight recorded ≥36 weeks gestation



Source: MCIS Extracted Health Intelligence and Informatics 2017.

Healthy Mums and Babies 4 Life

The Healthy Mums and Babies 4 Life (HM&B4L) team are collaborating with DHB community midwives to identify and engage women with a booking BMI ≥30 in a nine week programme provided by community health workers. Our team will test whether a lifestyle intervention in obese pregnant women leads to anticipated changes in diet and physical activity behaviours. The lifestyle intervention will educate women around nutrition and physical activity during pregnancy, alongside using behaviour change techniques such as goal setting. As part of this process, women's attitudes and confidence towards behaviour change will be explored, along with change in nutrition knowledge from the start to the end of the lifestyle intervention.

24 Ministry of Health, 2014. Guidance for Healthy Weight Gain in Pregnancy. Wellington: MoH.

What we're trying to achieve

The 2016 weight gain data tells us that 66% of Otara women with a booking BMI ≥30 exceeded the recommended average weekly weight gain guidelines, with the average weekly weight gain being 0.42kg. Ninety three percent of these women were Maaori or Pasifika. We aim to reduce the proportion of women exceeding the guidelines to less than 40%, and to reduce the average weekly weight gain of participants to 0.30kg.

What we've done so far and next steps

Our project team have engaged our sponsor Isabella Smart (Community Charge Midwife Manager), identified key stakeholders, created a communications plan, developed interventions and resources (including standard operating procedures and objectives), and created our measurement system and data collection plan. Currently our community health workers are engaging with the Otara DHB Community Midwives team, and will test the referral and engagement process.

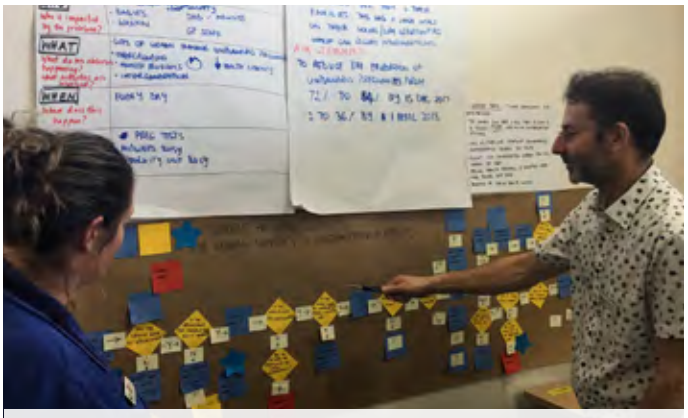
Weigh While We Wait

Our Weigh While We Wait (W4) team have a similar goal as the HM&B4L team – to support women to have a healthy weight gain during pregnancy. However, our focus is looking at the practices, information and conversations during the first antenatal visit in the GP clinic when a woman has her pregnancy confirmed. This will include the referral information provided for the woman to give to her community LMC midwife if this is her choice of antenatal care. We're testing this project at East Tamaki Healthcare – Dawson Road GP clinic.

We want health care professionals – particularly practice nurses, GPs and midwifes – to continue to promote to women the importance of good nutrition, physical activity, and a healthy weight gain during pregnancy. We are keen to improve and test an updated 'healthy weight gain in pregnancy' card that includes a weight gain chart that the woman can use throughout her pregnancy to monitor her progress.

What we've done so far and next steps

Our project team has identified key stakeholders, and are now creating a communications plan. We have collected and analysed our baseline data, and set our aim statement. We have developed questionnaires for practice nurses and GPs to understand the current processes and practices of a first antenatal visit in the GP clinic. We have determined our outcome measures, and once we have captured the current processes, we will co-design new processes with clinic staff and create our measurement system and data collection plan. A key next step is to engage with midwives (both DHB and community LMCs) to explore how we can work together to support women in this important aspect of their pregnancy.



Practice Nurse Renee Carroll and GP Mark Arbuckle from Otara Family and Christian Health Centre, map the current process of a woman's pathway to accessing contraception in their GP clinic.

Planned Pregnancy – It's a Woman's Choice

The World Health Organisation (WHO) has identified that reducing childhood obesity starts with a mother's preconception health and pregnancy care. This includes the ability of women to plan their pregnancies, as well as women having access to their choice of appropriate contraception to enable them to do this. Providing women with contraception can make a major difference to their lives.

Available data tells us that only 20% of CM Health domiciled women of childbearing age are prescribed contraception, of which only 8% are prescribed Long Acting Reversible Contraception (LARCs).[25] This is despite the fact that LARCs are the firstline contraception option and are the most reliable contraception available.

There is a significant equity issue as women in high deprivation areas are the ones that are particularly missing out on appropriate contraception, and even more so our Maaori and Pacific women. Our project aims to identify and remove barriers of LARCs, such as accessibility and cost, in order to

25 Based on the data provided from Pharmaceutical collection (personal communication Dr P Anderson).

increase the uptake for women in Otara from 8% to 20% of who are requesting contraception.

What we've done so far and next steps

Our project team have mapped the pathways via which a woman can access a LARC, and identified potential barriers. We have identified our key stakeholders, and are developing a communications and engagement plan. We are engaging with three GP clinics within Otara who are keen to identify and test change ideas to improve women's awareness of contraception options, and the knowledge, processes and practices relating to access to LARCs within their GP clinics, including conversations about contraception options with women.

At the same time, our team is also planning focus groups with Otara women of childbearing age to develop a deep understanding about women's experience in accessing contraception to gain new insights in how to improve access, awareness, and give women greater choice.

We would like to acknowledge the following staff who are involved with these projects:

Dr Sue Tutty (Project Lead)
Weigh While We Wait | Planned Pregnancy

Gillian Davies
Weigh While We Wait

Dr Leslie McCowan
Weigh While We Wait | Planned Pregnancy

Pam Hewlett
Weigh While We Wait | Planned Pregnancy

Donna Ritchie
Weigh While We Wait | Planned Pregnancy

Lyn Stark
Weigh While We Wait

Kim Letford
Planned Pregnancy

Karalee Tangiau (Project Manager)
Weigh While We Wait | Planned Pregnancy

Cindy Blackwell (Improvement Advisor)
Weigh While We Wait | Planned Pregnancy | Healthy Mums and Babies 4 Life

Deirdre Nielsen (Project Lead)
Healthy Mums and Babies 4 Life

Mele Fakaosilea
Healthy Mums and Babies 4 Life

Eseta Nicholls
Healthy Mums and Babies 4 Life

Dr Kara Okesene-Gafa
Healthy Mums and Babies 4 Life

Suz Heslop
Healthy Mums and Babies 4 Life

Prepare Together

BY TOM EPPS, IMPROVEMENT ADVISOR, KO AWATEA

Diabetes in pregnancy is identified as a significant modifiable risk factor for increased perinatal mortality and morbidity. The proposal is to contact women of childbearing age with pre-exiting diabetes, identified by primary care, to participate in surveys and focus groups to co-design a pathway to a healthy birth. A clear pathway for women with diabetes from preconception to the postnatal period will optimise the plan of care to improve outcomes for the woman and her baby.

Work to date and next steps

Our project team have focused on the identification of potential stakeholders which continues to progress. The charter has been finalised to ensure the team are clear of about what we are trying to achieve and potential ways of measuring outcomes. A few diabetes patients have already been approached to understand their experiences. The team ran a small focus group with mothers to gain feedback on potential methods of communicating messages. The team are trying to recruit other potential team members within Primary Care to collaborate and test with. Our next steps are to gain agreement from Primary Care to start testing, co-design workshops to increase the knowledge of how to engage effectively with women of different ethnicities, and to explore other mediums in communicating messages.

Smokefree

BY MICHELLE LEE, SMOKEFREE ADVISOR, MATERNITY

Promoting Smokefree pregnancies is a key initiative that could have a major impact on improving health outcomes for infants born to women living in Counties Manukau. Smoking during pregnancy is associated with a number of adverse pregnancy outcomes including miscarriage, placental abruption, intrauterine growth restriction, premature delivery, and stillbirth.[26] In addition, smoking during pregnancy has been associated with an increased risk of neonatal death, particularly as a result of SUDI.[27]

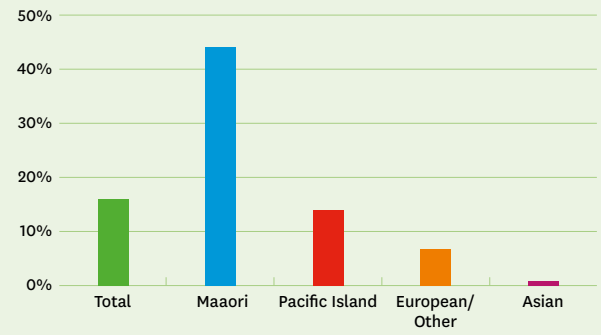
Obtaining accurate smoking prevalence has been problematic in the past. This year MCIS data captures the smoking status of the mother at time of admission for birth. This differs from previous reports which have presented data from the patient details section in the Patient Information System.

Some of the data quality issues remain, such as certainty that all women have been asked about their smoking status at admission and disclose accurate information. Of all the women birthing in 2016, 16% (1176) were identified as smoking at time admission for birth.[28]

There were marked ethnic differences, with 44% of Maaori mothers identified as currently smoking, compared to 14% of Pacific Island women, 7% European women/Other and 1% of Asian mothers. Ethnicity status was unavailable for <1% of patients (30 women) (see Figure 13). While there needs to be caution in comparing data from previous years due to different data sources, there appears to be a reduction in smoking prevalence compared to 2013 at time of birthing when 21% of women were identified as current smokers (51% for Maaori women, 17% for Pacific Island women).

FIGURE 13.

Smoking prevalence of women birthing, at CM Health facilities, in 2016 by ethnicity



Source: MCIS captured at time woman was admitted for birthing.

TABLE 31.

Number of women, by smoking status and by ethnicity, who birthed at CM Health facility, in 2016

SMOKING STATUS	MAAORI	PACIFIC ISLAND	EUROPEAN/ OTHER	ASIAN	UNKNOWN	TOTAL
Currently smoking	633	332	199	6	6	1176
Non-Smoker	693	1892	2402	660	20	5667
Unknown	127	160	106	43	4	440
Total	**1453**	**2384**	**2707**	**709**	**30**	**7283**

Source: MCIS

26 Jackson C. Perinatal Mortality in Counties Manukau. 2011.
27 Jackson C. Perinatal Mortality in Counties Manukau. 2011.
28 Note the data differs from MAT presented on page 16. This may be due to the unknown data being included in the non-smoker category.

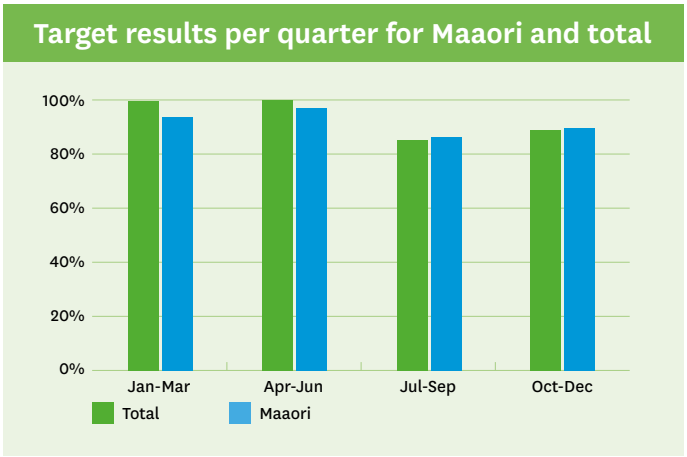
Smokefree target

MoH target

90% of pregnant women who identify as smoking at the time of registration with a DHB employed midwife or lead maternity carer are provided with brief advice and support to stop smoking.

Up until July 2016, the Smokefree target was being achieved. The changeover to using MCIS data to measure the target in July 2016, resulted in a marked decrease in the target result (see Figure 14). This is currently being investigated as this appears to be an issue with data capture rather than a change in performance.

FIGURE 14.



Source: Provided to CM Health by Ministry of Health.

A how to guide has been developed, and continual refresher sessions are offered to both self-employed and DHB employed midwives regarding the brief intervention and referral processes. This is to ensure that women are provided with quality interventions, and referred to the Smokefree service as early in pregnancy as possible.

Smokefree Pregnancy Incentives programme

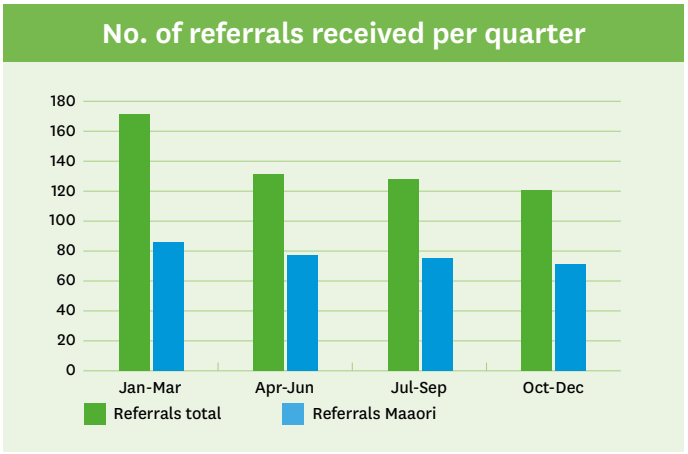
The Smokefree Pregnancy Incentives Programme has been operational in Counties Manukau since 2013. The programme has been successful during its first three years, with twice as many women accessing the programme, and three times as many women successfully smoke free at four weeks post a quit date in comparison to the previous non-incentives based Smokefree pregnancy services.

Nancy Akaroa-Elia who took part in the Smokefree Pregnancy Incentives programme.

The programme is now business as usual for the DHB stop smoking service. During 2016, the intervention resulted in 160 smoke free pregnancies, with 60% of the successful smoke free pregnancies being Maaori, 30% Pacific and 10% Non Maaori/Pacific. The programme is tracking at 69% for the four week quit rate which is similar across all ethnicities.

Overall, less than half the estimated smoking population during pregnancy are referred. Continual emphasis is placed on effective conversations to encourage more women to access the service to increase their chances of quitting.

FIGURE 15.



Source: CM Health Smokefree Pregnancy incentives programme.

Quotes from pregnant women:

"Energy came back really quickly and mentally I was clearer. I didn't expect that."

"As a family we save a lot of money than we were before."

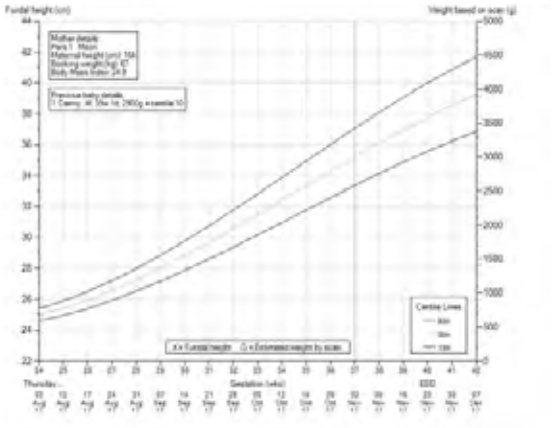
"Sense of achievement – I know I can say I'm going to do something, and do it."

"At the beginning, the vouchers were the main motivation for me to do the programme. I thought getting paid to quit was a great idea. But after a while, I forgot about the vouchers and I stopped thinking that I was doing this for the vouchers."

Implementation of the Growth Assessment Protocol (GAP)

BY JOYCE COWAN, NZ GAP LEAD EDUCATOR, MIDWIFE

Thanks to all the CM Health midwives and doctors who have enthusiastically engaged with GAP education and implementation. GAP is a programme set up by the UK Perinatal Institute to increase detection of small for gestational age (SGA) babies.



GAP is based on:

1. implementation of evidence based protocols and guidelines
2. training and accreditation of all staff involved in clinical care
3. rolling audit and benchmarking of performance.

SGA babies comprise approximately 40% of non-anomalous stillbirths born after 34 weeks. A minority are currently detected in New Zealand. Improved detection is associated with careful management and timely delivery, and is associated with a reduction in morbidity and mortality (NZMFM, 2014)[29]. The GAP programme has been shown to increase detection of SGA and a reduction in stillbirth in areas of high uptake in the UK (Gardosi et al.2013)[30].

GAP has been implemented in several NZ DHBs, and more are planning to introduce the programme soon. In 2016 CM Health introduced the GAP programme, and over the past year, regular workshops have been offered to midwives and doctors at CM Health. Face-to-face learning, including practice of standardised fundal height measurement, is followed up with e-Learning. Feedback from midwives and doctors who have attended training has been very positive.

GAP is now firmly established at CM health, with use of GROW charts a familiar component of antenatal care. The computer generated, customised GROW charts can predict the optimal growth in each pregnancy, thereby increasing the confidence of midwives and doctors when assessing the growth of the baby. As a result, they can intervene more quickly when there is concern, while being better able to reassure mothers when everything is progressing normally, reducing unnecessary interventions.

Customised birth weight centiles are generated in MCIS and inform on-going neonatal care. Data concerning antenatal suspicion and detection of SGA is entered at the time of generation of the birth weight centile, and this information is used to track progress of the programme. Periodically, a selection of anonymised missed cases of SGA will be audited for quality improvement purposes.

All staff are expected to commit to training. A log is kept by the GAP team. Team members include doctors Sarah Wadsworth and Sarah Tout as obstetric leads, Kathy Ogilvie as midwifery lead, and Debra Fenton as GAP team leader. Hayley Gill is the MCIS advisor, and Carron Steedman will be assisting with auditing. Joyce Cowan, NZ GAP Lead Educator is continuing to support the GAP team.

Accurate fundal height measurement.

29 NZNFMN (2014). Guideline for the Management of suspected small for gestational age singleton pregnancies and infants after 34 weeks' gestation.

30 Gardosi J, Giddings S, Clifford S, Wood L, Francis A. Association between reduced stillbirth rates in England and regional uptake of accreditation training in customised fetal growth assessment. BMJ Open 2013;3(12):e003942.

Maternal Vaccination – Influenza and Pertussis

BY CLAUDELLE PILLAY, IMMUNISATION NURSE LEADER

New Zealand research shows that pregnant women are nearly five times more likely of being admitted to hospital with Influenza then women who are not pregnant. The Influenza vaccine can be administered at any time during pregnancy. The Pertussis vaccine is offered to pregnant women between 28-38 weeks gestation to provide the newborn infant with optimal protection against whooping cough in the first few months of life.

With the focus on improving the uptake of Influenza and Pertussis for pregnant mothers, Dr Helen Petoussis-Harris presented the latest updates on maternal vaccinations and its effects and benefits for mother and child in early 2017. This was a multidisciplinary forum and was well received and attended.

A new PHARMAC initiative of pharmacist vaccinators providing free flu vaccine to pregnant women started in May 2017. Not all pharmacists in Counties Manukau are vaccinators, but the numbers are increasing rapidly. The service is being advertised in the community. The Pertussis vaccine for pregnant women is still only available at the family doctor. Influenza information kits were distributed to CM Health facilities as the majority was delivered directly to PHOs and LMCs.

As part of a comprehensive communication plan, an Influenza voucher system was developed to strengthen community awareness around MoH funded free flu vaccinations. This was developed for all the relevant funded groups, and was distributed to multiple services across the CM Health sector including community DHB and LMC midwives. The two separate vouchers are issued to pregnant women to take to their GP or pharmacist for Boostrix or the Flu vaccine respectively. This was also developed for Boostrix (Pertussis vaccine) as a reminder card for women to use later in their pregnancy.

Information on vouchers cards was shared widely in primary and secondary care settings. This created interest with services requesting to use vouchers.

The CM Health team encourage every health event or contact with a pregnant women be seen as an opportunity to create awareness of the importance of Influenza and Pertussis vaccination during pregnancy to both mother and the unborn infant.

In the absence of reliable data on the uptake of maternal vaccination, it is difficult to evaluate the education and innovations employed to increase acceptance of Influenza and Pertussis immunisation during pregnancy.

DHB Staff Flu Immunisation Uptake 2017

The percentage of staff who have received the Flu vaccination, as part of the CM Health Flu vaccination programme, is 65%. The nursing workforce is the highest on 69%. Midwifery has the lowest uptake by workforce. The uptake of the Influenza vaccine by DHB midwives was 54%, an increase of 4% from last year's 50%. This is a steady increase over last year's statistics with an upward momentum.

Peer vaccinators Tanya Wilson (Maternity) Jan Verheyen (Pukekohe Birthing Unit), Shaniza Masued (Gynae Care Unit), Sandica Zorzoliu and Val Furness (Botany Birthing Unit), Grace Beckley and Karen Scorringe (Birthing and Assessment) all did an amazing job vaccinating their peers. Many thanks for your work on this programme.

Lactation Support Services (LSS)

BY BEV POWNALL, TEAM LEADER, LACTATION SUPPORT SERVICES

Women's Health Lactation Support Services (LSS) implemented a number of new and refreshed ventures in 2016.

Changes for lactation consultants (LC) included a different model of care; meeting with each midwife or nurse individually in the morning and setting specific priorities and plans in partnership. This helps core midwifery/nursing staff and the LC to better meet the needs of each woman/baby/whaanau. In a busy ward, it also helps the LC identify where she can best allocate her time, including working alongside new staff to assist with their education and professional development.

Other LSS initiatives included promotion of World Breastfeeding Week and the Big Latch On throughout CM Health facilities and community, collaborating with other CM Health services to provide information on SUDI prevention (including the contribution that breastfeeding makes), training a small group of staff to undertake skilled assessment of tongue-tie (HATLFF), and accreditation of a small number of core midwives who will provide frenotomy and/or refer for free DHB specialist appointments where frenotomy is not within their scope of practice or requires more expertise. The tongue-tie project will be implemented in 2017.

CM Health Breastfeeding Advocates, Michelle Tovi, Theresa Roebeck, Tusiata Ioramo and Shona Leaso

Although the provision of paid non-clinical breastfeeding advocates (BFA) on the Maternity Ward at Middlemore Hospital is not a new initiative, it is unique in New Zealand and something that Women's Health is extremely proud of. In 2016, 3233 of 4756 postnatal women (68%) were visited by a BFA on the Maternity Ward and given information, education, support and encouragement. In addition, 206 of 698 women (30%) admitted for antenatal care during the same period, were also visited by a BFA on the Maternity Ward. The largest percentages of mothers seen by the BFAs were Samoan, Maaori, European, Indian and Tongan. The percentages seen are representative of the range of ethnicities of all mothers discharged from this ward.

The BFA role has always interfaced with the role of the Turuki Health Care B4Baby Kai Awhina, and now also interfaces with the Te Rito Ora Kai Tipu Ora workers. They aim to provide consistent and seamless information, support and transition to successful breastfeeding. The provision of breastfeeding support and information being delivered by their peers, rather than only by health professionals, is what makes this an effective model.

Peer teaching is recognised globally as an effective way to support breastfeeding initiation. At CM Health, mothers appreciate being with BFAs who are able to relate easily because they come from similar cultural backgrounds and speak the same language. Focus groups have affirmed this, and requested that more Maaori and Pacific Island staff provide services within CM Health.

While nurses and midwives are working with complex cases, the BFAs are able to provide a sense of normality as they assist with those requiring basic breastfeeding support and information. The BFA role is cost effective, efficient and an ethnically appropriate workforce to meet BFHI requirements. Feedback shows that the women love it.

Improving Breastfeeding Rates

BY HEATHER MURIWAI, TE RITO ORA PROGRAMME CO-ORDINATOR

Te Rito Ora was established with funding from the MoH to promote healthy feeding of infants and toddlers, with a focus on increasing breastfeeding rates and age appropriate introduction of healthy first foods.

The service is available free to all mothers and whaanau who live in Counties Manukau and aims to protect, nurture, educate and support mothers and whaanau to establish and maintain breastfeeding. Our vision is that all women in Counties Manukau will have the information and support they need to make confident and informed decisions about breastfeeding, as well as live and work in an environment that enables and supports their decisions.

Te Rito Ora provides a number of services:

- **In-home antenatal breastfeeding education** delivered by Kaitipu Ora workers (community breastfeeding advocates) to educate and support pregnant women and their whaanau to make informed decisions and be confident to breastfeed their babies. The Kaitipu Ora worker then follows and supports the Mama through her breastfeeding journey in a continuity of care model.
- **Intensive in-home postnatal breastfeeding support in conjunction with LMC** to support initiation and maintenance of breastfeeding. Clients receive a minimum of: two to three visits in the first week of baby being born, one visit weekly from weeks 2 -12, and monthly contact thereafter. Support is also provided by phone and text.
- **Community lactation consultant service** which provides specialist support for mothers with complex breastfeeding issues. All lactation consultant visits are in the home.
- **Breastfeeding support groups.**
- **Peer Supporter Programme** based on the La Leche League Peer Counsellor Programme. Mothers with breastfeeding experience are given training to support and encourage other mothers and whaanau with breastfeeding.
- **Supporting implementation of Baby Friendly Community Initiative Accreditation (BFCI)** in organisations who are working to become and/or maintain their accreditation.

What our clients say

"Amazingly helpful. I think it is a huge asset to the South Auckland community. Without the teams' support, I would have given up breastfeeding. It was their help and support, knowing that if I needed someone to come over that they would…that got me through so many tough times. It not only made a difference to myself and my baby, but also the family got behind it as well."

"It was actually really good to sit down with The Kaitipu Ora worker…to understand the concept of breastfeeding, what to do, why, when…I did not know half of the stuff."

"I'm able to breastfeed enough to keep going because of you guys. I would have probably given up ages ago with my second baby. I think this time I am able to keep going with the support that I've been given and reassurance that everything is okay."

"A lot of reassurance that it's normal and that you are doing a good job was quite a big deal for me. Information on how it works makes me a lot more confident in my body."

- **Community cooking classes and workshops** that promote healthy eating and nutrition for the whole family with a focus on nutrition needs of pregnant mothers, infants and toddlers.

At discharge from a CM Health birthing facility, breastfeeding rates exceed the MoH and Baby Friendly Hospital Initiative (BFHI) targets; however following discharge, there is a significant drop in breastfeeding rates.

Breastfeeding rates at six weeks and three months fall below the MoH targets and reported national rates (see Table 32). In terms of our performance against other DHBs, CM Health dropped from being placed fourth best out of 20 DHBs at discharge, to twentieth place at six weeks, and we remain at twentieth place through to three months.

TABLE 32.

Breastfeeding rates in Counties Manukau – overall breastfeeding rates versus women enrolled with Te Rito Ora

	OVERALL CM HEALTH BREASTFEEDING RATES		BREASTFEEDING RATES FOR WOMEN ENROLLED WITH TE RITO ORA	TARGET
	MAAORI	TOTAL		
Discharge Percentage of infants exclusively breastfed at discharge from birthing facility	82.9%	84.7%	-	75%
Six weeks Percentage of infants exclusively or fully breastfed 6 weeks	52.3%	58.0%	65-69%	75%
Three months Percentage of infants exclusively or fully breastfed at 3 months	35.9%	45.6%	51-58%	60%
Six months Percentage of infants receiving breast milk at 6 months	35. 5%	65.7%	-	65%

Source: NZBA. Breastfeeding at discharge data is compiled BFHI data. Breastfeeding data at 6 weeks, 3 months and 6 months is WCTO data provided by MoH to NZBA. Data on discharge from the maternity facility (BFHI) is for Jan to June 2015 as data following June 2015 has been unavailable due to changes to MCIS.

There is an emphasis on enrolling pregnant woman in their antenatal period; however postnatal referrals to the service are also accepted. The service works in close collaboration with the LMC midwife whose women are enrolled with them, with a well-developed level of communication between the Te Rito Ora team, the LMC and the woman. The service is being evaluated by an external evaluator, Malatest International Ltd, with findings and feedback going towards strengthening the service.

Te Rito Ora team: Amy Carter, Jess Bevan, Heather Muriwai, Navjot Kaur, Barbara Fletcher, Florence Iosefa, and Dana Owens.

Inpatient Experience Survey

BY DR LESA FREEMAN, CLINICAL QUALITY AND RISK MANAGER KIDZ FIRST AND WOMEN'S HEALTH

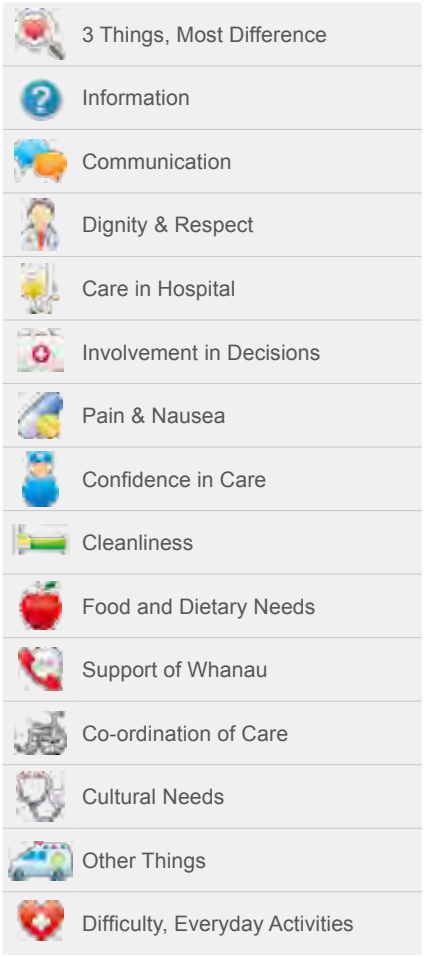
The response rate to the Inpatient Experience Survey in Women's Health and Kidz First in 2016 was 8 % of all discharges where patients received an email or SMS inviting them to complete the survey. One of the outcome measures of CM Health's MQSP Work Plan 2016/17, Principle 1 *'Maternal care is provided in a culturally appropriate way which supports care that protects, promotes and supports childbirth for women and babies with evidenced based medical intervention when required'* is to increase women's feedback to 15% across Maternity Services.

The Clinical Quality and Risk Manager Kidz First and Women's Health has been working with Cemplicity Ltd to develop a system to increase the number of inpatient experience surveys received by inviting women and parents/caregivers the opportunity to complete the survey on-line prior to discharge. Cemplicity Ltd have customised the survey so that when it is completed on a tablet the women and parents/caregivers would be provided with a choice of 14 domains and guided to answer up to three of the domains that would make the most difference to the quality of their or their baby's/child's care and treatment. Completion of up to three domains, three overall questions and four demographic questions would take approximately 10 minutes instead of the current 35 to 40 minutes if completed once discharged home.

A proposal was submitted to the Maternity Quality and Safety Governance Committee for the committee to consider at their November meeting funding six Unisurf 10.1 tablets for Women's Health from the MQSP 2015/16 budget. This proposal was approved and each of the six tablets has subsequently been set up with a smart survey link that will contain unique information related to the division and location of the wards/birthing units. A further two tablets have been acquired for Kidz First Medical and Surgical and Neonatal Unit.

A process is currently being developed to provide the tablets to the women and parents/caregivers so that they have the opportunity to complete the inpatient experience survey on-line prior to discharge.

Example of the Inpatient Experience Survey Domains



Perinatal Review Process

BY DEBBIE DAVIES, PERINATAL LOSS MIDWIFE SPECIALIST

Perinatal mortality is reviewed nationally by the Perinatal and Maternal Mortality Review Committee and presented at an annual national conference. This is well attended by CM Health staff as well as community LMC midwives in Counties Manukau. Follow up on the recommendations from the PMMRC is now incorporated into CM Health's Quality and Safety Governance Group's Workplan.

In addition, CM Health has its own perinatal and maternal mortality meeting held every four weeks where local cases are discussed, and recommendations are made to improve outcomes. A range of professionals attend this multidisciplinary meeting. Following on from presenting each mortality case, a further review is completed by a smaller group which includes an obstetrician, obstetric registrar, pathologist, and a perinatal loss midwife.

Each case is discussed on how it should be classified according to the Perinatal Society of Australia and New Zealand classification guidelines. This includes if the case was potentially avoidable, and if so, was it organisational or management factors, factors relating to personnel, or factors relating to barrier to accessing or engaging with care that influenced the outcome. If there are any of these factors, it is discussed with the Clinical Quality and Risk Manager as to whether a further investigation (e.g. serious and sentinel event investigation) is required.

Further progress improving management of perinatal deaths

CM Health has enhanced the processes surrounding family care in the situation of perinatal loss in a number of ways:

- Improving our family space – a planned renovation of a whaanau room is in progress and promises to give these families more privacy and comfort at a time when they need to be in the hospital for extended periods to offer support.
- Education opportunities this year continue to be with new graduate midwives, new to staff registrars, and house officers.
- Dr Debra Davis, author of a number of books including 'Empty Cradle Broken Heart' and 'A Gift of Time', presented a half-day workshop on compassionate care of bereaved parents as well as self-care.

Highlights from the past year

Something of concern has been families who experience a perinatal loss do not fall under maternal mental health care. There has been a lack of support for these women as far as grief support and counselling. An application was submitted to the Maternity Quality Governance Group for funding to address this issue, and the group have agreed to fund a pilot offering bereaved parents three free sessions of bereavement support. We are in the process of finalising the setup of this service and have been able to start to offer families this support.

Serious Adverse Event and Morbidity Meetings

BY DR LESA FREEMAN

To improve safety and decrease the risk of recurrence of an adverse event, quarterly meetings are held to present the serious adverse events. These two-hour multidisciplinary meetings provide the opportunity for the review teams to present and share the learnings and recommendations following their investigation and analysis of the serious adverse event. Discussion is then facilitated amongst the large number of attendees, including colleagues from other services, on the system failures and the implementation and follow-up of the recommendations.

As of June 2017, the serious adverse event meetings were restructured to include morbidity cases. At this meeting, four serious adverse events were presented by their respective review teams and one case involving maternal morbidity was presented. This meeting was well attended and had excellent feedback, with good learning points identified.

Contraception

BY DR SUE TUTTY

In order to meet the contraception needs for postnatal women in the Counties Manukau area a number of services have been implemented.

Resources on the Maternity Ward at Middlemore Hospital have been increased for post natal LARC insertions. Our contraception nurse specialist is doing Jadelle insertions two days a week, a designated midwife is doing insertions two mornings a week, and registrars and house surgeons are being encouraged to insert Jadelles.

DHB maternity and primary care services are providing LARC insertions for women up to three months postpartum in primary care with administration support from the regional POAC service. GPs and nurse practitioners who are already competent inserters are being credentialed by the DHB to perform these insertions and removals under this service.

Following the New Zealand Budget announcement of funding for low income women and of a national guideline and training package, further training and credentialing will depend on this national guideline. Work moving forward will be on the availability of LARC for youth.

Monitoring progress

An audit was undertaken of the number of women giving birth in South Auckland who were taking folic acid prior in their pregnancy. This is an approximate measure of planned pregnancy and occurred in only 5% of the pregnancies.

A contraception survey conducted on the Maternity Ward at Middlemore Hospital and at the CM Health community birthing units asked women about their contraception experience during pregnancy and prior to becoming pregnant. Preliminary results have revealed a huge equity gap with 54% of our women reporting that their pregnancies were unplanned; 62% of our Pacific women and 88% of our Maaori women. Data from this survey is still being further analysed.

There are a number of barriers to timely and appropriate contraception currently being assessed:

- Limited availability of LARC (long acting reversible contraception) on the Maternity Ward.
- A long waiting list for postnatal women to be seen at the SuperClinic for LARC insertion (50% DNA rate).
- The cost and availability of LARC insertions in the community.
- Multiple barriers around providing a youth service.

Educational opportunities

Women's Health Day in November 2016 had 150 GPs, midwives, and practice nurses attend. The programme included a presentation by Helen Roberts on contraception, and a practical session on LARC insertions using models.

A **Contraception Education Session** held at Manukau SuperClinic was attended by 77 GP, midwives and practice nurses. Christine Roke (Director of Family Planning) did a presentation, and models were available to practice on.

The **RNZCGP Conference** had a practical session on long acting reversible contraception (LARC) insertions held in small groups.

Midwife education sessions are included in midwife refresher days and new graduate training days.

Vasectomy

The criteria for vasectomy has been widened to partners of postnatal women within six months of childbirth, partners of any women requesting a tubal ligation, and those who meet other criteria such as family size. This has increased the uptake of vasectomies from 108 in the 10 months prior to increasing the criteria to 251 in the current financial year. This funding scheme is reaching our high needs population with approximately twice as many procedures being done for men from areas of high deprivation, than those living in areas of low deprivation.[31]

Health Equity campaign

As part of CM Health's Health Equity campaign, a contraception project is currently looking at the barriers to the provision of LARC for all women in the Otara area. (See page 72 for more information).

31 Filoche S , Snook S, Lawton, B Exploring access to vasectomy services: a case study of funding in Counties Manukau J Prim Health Care 2017:9(1): 5-89

Engaging with our Maternity Workforce

Living Our Values – Middlemore Hospital Maternity North and South Improvement Project

BY WENDY DAVISON, MATERNITY INPATIENT CARE CO-ORDINATOR

Background

In late 2016, senior clinical and operational leaders requested Ko Awatea's assistance to conduct a constructive approach to improvement for current levels and flow of care on the Maternity Ward, North and South. Increasing acuity and high inpatient churn were recognised factors leading to staff dissatisfaction and difficulty in employing and retaining staff.

Aim

The aim of the Living Our Values improvement project is to help the Maternity Wards to:

- deliver high quality care to the mums and babies of CM Health in a welcoming, organised and clean environment
- clearly define model of care and leadership roles
- standardise pathways to ensure consistent care delivery
- define equipment/resource requirements
- improve inpatient feedback methods
- review measurement and reporting mechanisms to ensure accurate data is reflected e.g. occupancy.

Our team

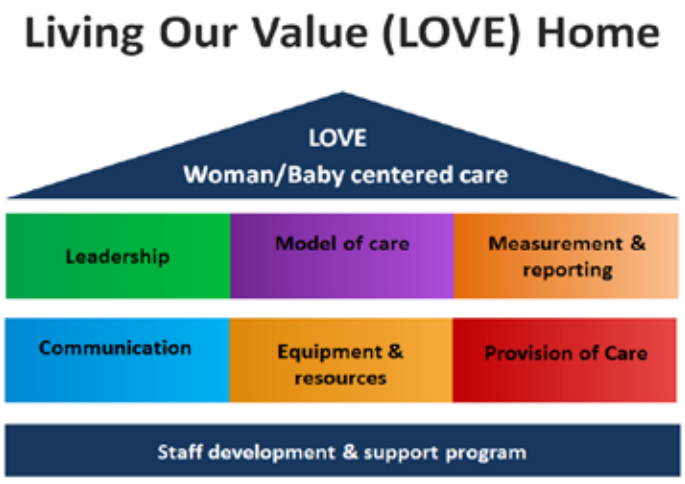
The decision was made to form a working team that clearly represented the staff of North and South. There are a broad number of professions that work within maternity North and South, however to have representation from each of these teams would have created an unworkably large group and created risk for scope creep.

The following personnel are represented, with key stake holders invited to meetings at relevant times and consumer consultation held:

- Operational and Clinical Managers
- Midwives
- Nurses
- Health Care Assistants
- Clerical
- Medical (Senior and Junior Medical Staff)
- Quality manager
- Midwifery and Nursing Educator
- Human Resources

Method

Project meetings were held over five months during which process mapping, deep dives, and Root Cause Analysis were applied to issues raised. Solution proposals were then established, separated into the following work streams and presented to staff for feedback. In mid-May 2017, we presented our findings for consideration.



Where are we now?

Solutions that require capital investments have been taken into consideration, and the sponsors are prioritising low cost options to be implemented in the short-term. Capital (building) investment solutions will be put forward as part of longer term planning.

From the beginning of June 2017, the project has moved into its second phase – implementation. During this phase, changes will start to be visible and communication and consultation will be vital. The first step will be the financial and physical separation of the wards. The team has identified that this will create a clear leadership model for staff, increased accountability, reduced congestion in the central hub, and increased sense of team. We've had successful requests for new computers to resource the South ward, and are tapping in to the organisation's valuable second-hand online store to save dollars.

We've also had successful requests for recliner chairs for the North patient lounge. A refresh of this area will also allow it to be used as a short-term discharge lounge to help with bed flow.

The AWM (Assignment and Workload Manager with Acuity Tool) validation is well underway, which does involve extra work for staff as they complete over 400 time and motion studies to validate this important tool. Once validation is complete, the expected outcome is that acuity will be measurable and visible, and help us to determine accurate FTE requirements. We are about 60% through this process. Other aforementioned key solution proposals will be actively worked on in the next few months.

It's important to acknowledge that this project is happening with wards (and staff) that continue to be very busy. The project team remains engaged and positive, and we have welcomed many new staff members into the various work streams. We thank our sponsors Nettie Knetsch and Debra Fenton, Ko Awatea improvement advisors, all team members and staff for their continued commitment to the Living Our Values Project. Through the project, we expect outcomes to have a positive impact on all staff and an improved journey for the women, babies and whaanau of Counties Manukau.

Project meeting.

Workforce Group

BY THELMA THOMPSON

The Workforce Group was established as an action following the Maternity Care Review (October 2012) with the purpose to develop and implement a Midwifery Workforce Action Plan to increase the availability of midwives to meet the demands in the Counties Manukau region, and now reports to the Maternity Strategic Forum. The aim is to achieve an appropriate workforce capacity across the maternity care continuum to provide quality care that is women-centred and which reflects the New Zealand Maternity Model of Care. The function of the Midwifery Workforce Group is to have open communication between all parties to enhance the care of women and babies and to ensure the objectives for the Workforce Action Plan are delivered.

The membership consists of seven community lead maternity carers from the seven main locality areas and seven employed midwifery staff from various work areas. Each member agrees to represent ideas from their group at the meetings, progress actions decided on, feedback to the group they represent, and lead and evaluate proposed modifications/changes to current practices. All health care professionals in the group are committed to providing a safe and healthy work environment which reflects the values of the organisation and encourages continual improvement and professional development of maternity carers to enhance the experience of women and their families. This group provides a forum to celebrate and share achievements, and problem solve challenges which arise from a diverse population.

Maternity Monthly e-Update

BY LYN STARK

Our Maternity Monthly (OMM), a CM Health's monthly e-Update, commenced publication in March 2015 and is produced by the Maternity Quality and Safety Co-ordinator. It is widely circulated to all CM Health's maternity care providers and interested allied health practitioners. It is also available on CM Health's intranet Paanui, via a direct link on the Women's Health page.

OMM is a one-stop-shop covering a wide variety of information relevant to our maternity health professionals. Encompassing information from all areas under 'Our People' including the Primary Birthing Units, it also features newly released or refreshed guidelines, quality and risk matters, maternity service developments, Access Holders minutes and regular updates on local projects, innovations and research.

A 'Highlight' section features photos of topical events and the broad list of upcoming events is indexed chronologically to be extra helpful for referencing. OMM is aimed at improving communication and the integration of various services by increasing awareness of one another, and the role we all play in working towards providing the best possible care for CM Health's women and whaanau.

In 2017, OMM will continue to evolve into a more user-friendly format that's streamlined and easy to navigate.

Access Holders Meetings

BY AMANDA HINKS

The monthly CM Health access holder meetings continue for 12 months of the year.

The meetings have focused on information sharing, with guest speakers now being offered an alternative forum through regular lunchtime midwives' meetings. This enabled the DHB community and LMC community midwives to hear from a variety of speakers from non-governmental organisations (NGOs) and researchers. There are standing items regarding feedback from DHB groups with LMC membership, such as workforce meetings and incident meetings.

The access holders meetings are held on alternate Tuesdays and Wednesdays at 8:00am to accommodate the working day and clinic commitments at a venue with free parking and near to a motorway. Agenda items are called for, and minutes are circulated through forums which can be accessed by all subscribers to the Our Maternity Monthly e-Update. All attendees receive a certificate of the meetings attended every year for their portfolio.

Access Holder meeting.

Social Media Presence

BY PAULA TAYLOR, MANAGER, STAKEHOLDER AND COMMUNITY COMMUNICATIONS

CM Health's social media channels are becoming an increasingly effective way to promote Child, Youth and Maternity messages to the Counties Manukau population.

A responsive marketing strategy to build the audience for CM Health's Healthy Together Facebook page has resulted in increased support and engagement for posts in general and, more specifically, posts that promote early engagement with a midwife, build awareness of and participating in programmes that support healthy eating, pregnancy and child birth classes, and greater awareness of the three primary birthing units in Counties Manukau.

Social media sites like Facebook are very popular and are a cost effective way to reach a wide audience. Posts with photos, images, stories and information that reflect CM Health's diverse population are geo-targeted to the Counties Manukau area using a tone that is light, warm and social.

Alongside a focus on engaging content, there has been a strategy to link with the social media sites of organisations and individuals working in health and social services in the Counties Manukau area. Collaborating in this way, by sharing each other's content and promoting a wide range of events and activities that support the health and wellbeing of the Counties Manukau community, expands the reach of this content further than one organisation alone is able to do.

CM Health Education for Maternity Carers

BY KATHY OGILVY, PROFESSIONAL DEVELOPMENT TEAM LEAD WOMEN'S HEALTH AND KIDZ FIRST

In the last year CM Health has offered, and continues to provide, the following education to core and community midwives and nurses working within Women's Health. The choice of education provided is in response to the annual needs analysis, critical incidents, and trends identified by the services and organisation and MoH.

As well as the usual Combined Emergency Skills Day and BFHI Workshops, a number of courses have been offered:

- A half hour presentation refresher on the Maternity Early Warning Score, as part of the mandatory training for all midwives
- Two normal birth workshops, Care of the Normal and Recognising Risk, to promote normal birth.
- Diabetes education available through an online learning module.
- Four GAP education sessions provided by the Perinatal Institute.
- Two Grief and Loss Workshops.
- One Caring for High Acuity Women Workshop. This workshop has been well received and has helped staff to have a better understanding of the complex needs of CM Health women.
- An annual RANZCOG CTG workshop and a CTG update as part of the Midwives Annual Update Day.
- Two Perineal Repair Workshops.
- A Maternal Mental Health Workshop provided by the CM Health Maternal Mental Health team.
- Immunisation for Midwives Workshop provided by IMAC.
- A Practical Obstetric Multi-Professional Training (PROMPT) course held in one of the three community birthing units in Counties Manukau.
- A Community Alcohol and Drug Services (CADS) run Alcohol and Other Drugs Study Day.
- An Intrapartum Assessment Workshop as suggested by the New Zealand Midwifery Council.
- A two-day education programme for nurses working outside maternity, caring for pregnant and postnatal women.

CM Health also provided an education programme specifically for nurses working in maternity; this has enabled nurses to provide safer care to our women and babies. In April 2017, CM Health became a Midwifery Council approved education provider.

CM Health Maternity staff at the Hear the Roar Aotearoa conference.

Hear the Roar Aotearoa Conference

BY LYN STARK

CM Health MQSG supported attendance at the Hear the Roar Aotearoa conference held in Hamilton in early 2017. It was a collaborative approach guided by our MQSP Workplan activity to contribute to the development of educational opportunities to support the workforce by encouraging attendance at extracurricular educational opportunities. The cutting-edge book on which this day was themed, The Roar Behind the Silence, addresses the impact of a fear and blame

DHB and LMC midwives at the PROMPT workshop held at the Pukekohe Birthing Unit in May 2017.

culture within maternity care on both staff and those using the service. The books focus on why kindness, compassion and respect matter in maternity care made for topical discussion at the conference.

A bus was provided to transport midwives, other health professionals and managers from the Auckland region to Hamilton to enable ease of attendance and parking. It was also a great opportunity to encourage regional interaction between us all. Twenty eight people travelled together and participated in the discussion along the way, invigorated with the use of a mobile microphone and guided by various topics being raised. As an encouragement, a draw was made to cover the registration fee for three of the CM Health attendees. This small gesture was much appreciated by those fortunate enough to be drawn and provided a refund.

The day proved a wonderful opportunity to hear international speakers Sheena Byrom and Soo Down, The Roar Behind the Silence co-editors, whose book has been making waves throughout the maternity world. Other authors from the book who spoke at the conference were Dr Alison Barrett, a local obstetrician and gynaecologist from Waikato, and New Zealander anaesthetist Dr Robin Youngson, co-founder of Hearts in Healthcare; a global social movement for physicians all promoting compassion in healthcare.

These inspirational speakers shared their knowledge and experience on positive and proactive approaches to support attendees to look at their work cultures to encourage and nurture change. Information and practical suggestions were shared, and we were encouraged to work together to provide the kind and compassionate care maternity workers want to provide to our communities. We all came away with renewed vigour and inspiration to continue to work towards bringing about change in our workplace.

PROMPT Workshop

BY LYN STARK

CM Health continues to support and promote the PROMPT course for its maternity carers. PROMPT (Practical Obstetric Multi-Professional Training) is an evidence based multi-professional training package for obstetric emergencies involving a multi-professional group of obstetricians, midwives and anaesthetists. It's associated with direct improvements in perinatal outcomes, and has been proven to improve knowledge, clinical skills and team working. This multidisciplinary training is encouraged by the PMMR Committee and is identified in our CM Health Quality and Safety Workplan.

The PROMPT workshop is proving very popular in our community birthing units. While the Papakura Birthing Unit continues to hold a well-supported PROMPT course annually, the Pukekohe Birthing Unit also held a workshop in May 2017. This proved very popular with DHB and LMC midwives (15 attended) who appreciated being able to run through emergency scenarios in their actual place of practice.

Post-partum Haemorrhage (PPH), prolapsed cord, cardio pulmonary resuscitation (CPR), and shoulder dystocia were covered in the workshop. It was agreed that holding these sessions on a yearly basis at each of the community birthing units would be well supported by the midwives.

4 Gynaecology CM Health

Gynaecology Services

BY DR KATHERINE SOWDEN, CLINICAL LEAD GYNAECOLOGY

CM Health provides gynaecology services at three geographical sites; MMH, Botany Superclinic and at the Manukau Superclinic/Surgical Centre (MSC).

The MMH site provides the 24-hour acute gynaecology service for CM Health, seeing urgent primary care referrals and women self-presenting through the Emergency Department (ED). There is also an Early Pregnancy Assessment Clinic (EPAC), providing assessment and management of early pregnancy problems during office hours. Elective surgery is performed at both the MMH and MSC sites, with the more complex cases requiring admission to ICU or HDU post operatively being performed on the MMH site. Both the Botany Superclinic and MSC provide elective outpatient gynaecology services whilst colposcopy is provided exclusively at MSC.

A multidisciplinary team of gynaecologists, junior medical and nursing staff, provides gynaecology services.

Reporting

We have been restricted to using data collected from clinical coding discharge reporting, case mix reporting, paper-based records, and the colposcopy database. It is not possible to verify the data provided, so the assumption that it is accurate has been made. In the future, a database specifically for gynaecology needs to be considered with a rigorous audit of the data possibly by clinicians.

There has been no gynaecology data included in the annual report since 2009 and therefore the 2016 report is a starting point from which we hope to expand upon in subsequent reports.

The reporting period is 1 January 2016 to 31 December 2016 unless stated otherwise.

Inpatient Services

There were a total of 4878 inpatient discharges from the gynaecology service in the 2016 year.

EPAC

EPAC is situated adjacent to the gynaecology ward on the MMH site. EPAC is open 8 am to 4 pm Monday to Friday, catering to women who have early pregnancy problems of a non-acute nature. A nurse specialist runs the clinic with cover from a gynaecology registrar and oversight from the acute gynaecologist of the day.

In the 2016 year, 719 new patients and 2855 follow-ups were assessed in EPAC in 2016. New patients are directly referred from primary care. Follow-ups include both physical reviews and telephone consults.

Gynaecology Outpatient Appointments

During the 2016 year, a total of 10754 women were seen for assessment in the gynaecology outpatient clinics. 4306 were as a first specialist assessment and 6448 were as a follow-up.*

Outpatient Hysteroscopy

In the 6 months, 1/7/16 to 31/12/16, 60 patients were seen in the outpatient hysteroscopy clinic. 20 patients were referred on for hysteroscopy dilatation and curettage (D&C), under general anaesthetic giving a conversion rate of 33%. The recent introduction of MyoSure** is expected to decrease the conversion rate and increase the number of cases triaged as suitable for the outpatient clinic.

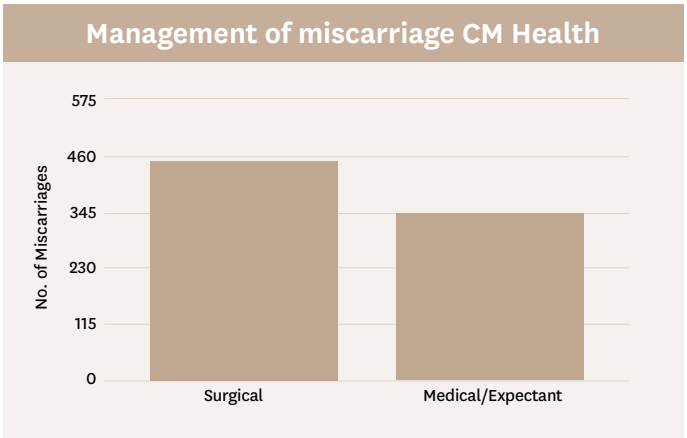
*Some appointments may be in a specialist nurse clinic.
**MyoSure – A hysteroscopic device for removal of uterine pathology under direct vision.

Management of Miscarriage and Ectopic Pregnancy

Management of Miscarriage

Of a total of 804 women who presented with missed or incomplete miscarriage in 2016, 66% (452) were managed surgically and the remaining 44% (352) either medically or expectantly management.

FIGURE 16.

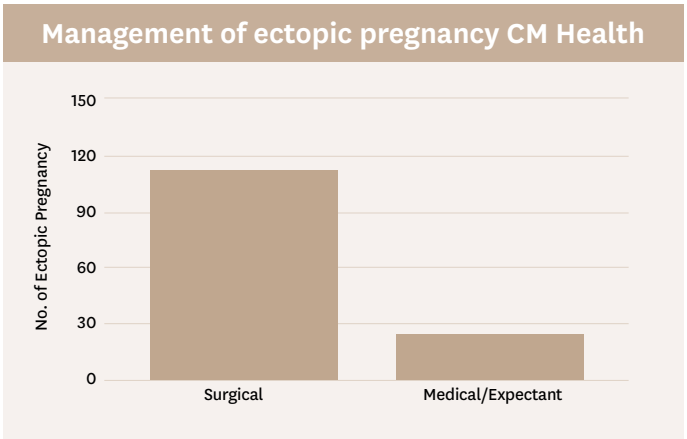


Source: Casemix

Management of Ectopic Pregnancy

There were 136 women overall who were diagnosed with a tubal or ovarian ectopic gestation in 2016. 82% were managed surgically (n=112). 18% (n=24) were managed either medically with methotrexate or expectantly.

FIGURE 17.



Source: Casemix

Acute and Elective Gynaecological Procedures

A total of 2330 acute and elective gynaecological procedures were recorded during the 2016 year. The complications were collated using a combination of the post-discharge coding data and surgeon self-reporting. Surgical complications are discussed in a bimonthly gynaecology complications audit meeting overseen by the Clinical Leader of Gynaecology.

A complication has been defined as a deviation from the expected postoperative course or outcome. Reporting of complications is limited to the time in which the patient remains under the care of a CMDHB clinician. Complications occurring in the community may not be included in the data presented in this report.

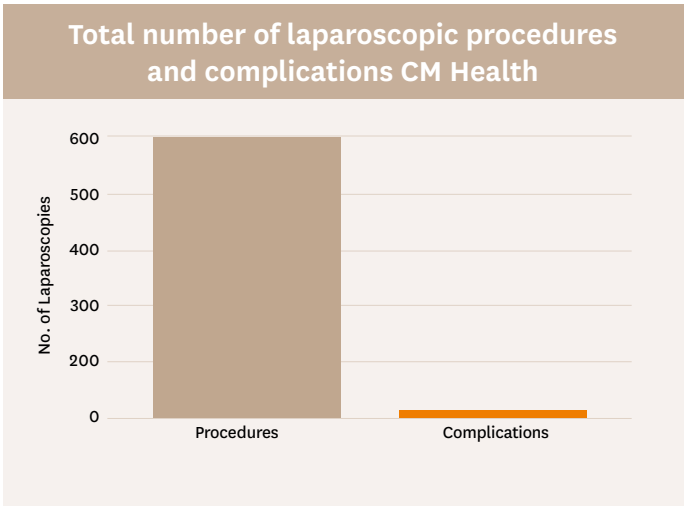
The overall complication rate for 2016 was 4.6%. (n=105). For the purposes of analysis complications were broken down into 4 categories;

1. Haemorrhage/haematoma (Bleeding)
2. Infection
3. Perforation of a viscous or organ
4. Other

Laparoscopy

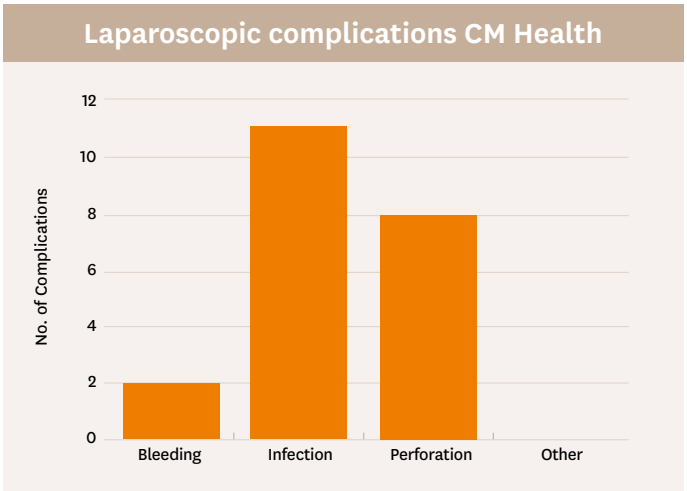
A total of 598 laparoscopies were performed. There were 29 complications noted giving a complication rate for all types of gynaecological laparoscopy of 4.8%.

FIGURE 18.



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 19.



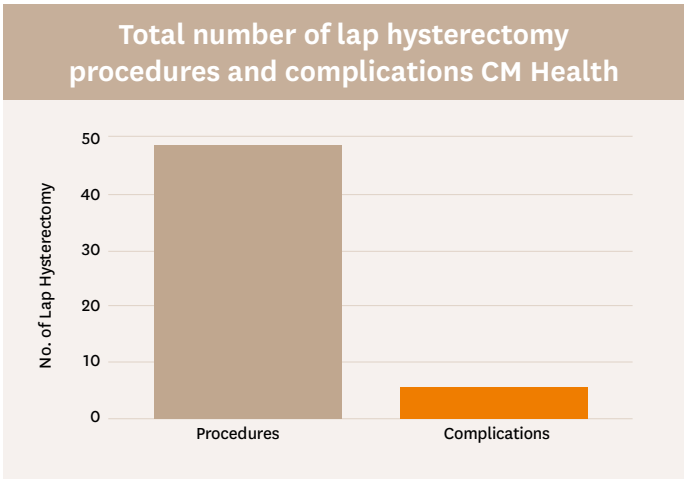
Source: Clinical review of clinical coding and reporting – Concerto records.

Laparoscopy was further broken down into total laparoscopic hysterectomy, laparoscopic ovarian cystectomy, salpingo-oophorectomy, salpingectomy for ectopic pregnancy, tubal ligation, and excision of endometriosis and 'other laparoscopy'.

Complication rates for the subsets of laparoscopy are as follows:

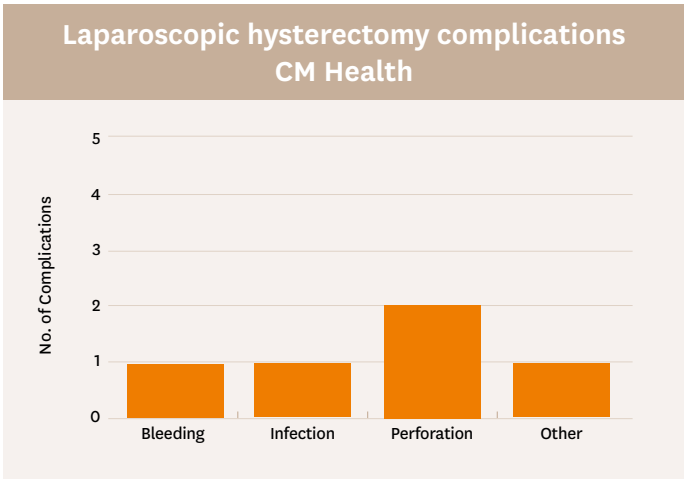
There were 49 total laparoscopic hysterectomies with 5 reported complications giving a complication rate of 9.8%.

FIGURE 20.



Source: Clinical review of clinical coding and reporting – Concerto records.

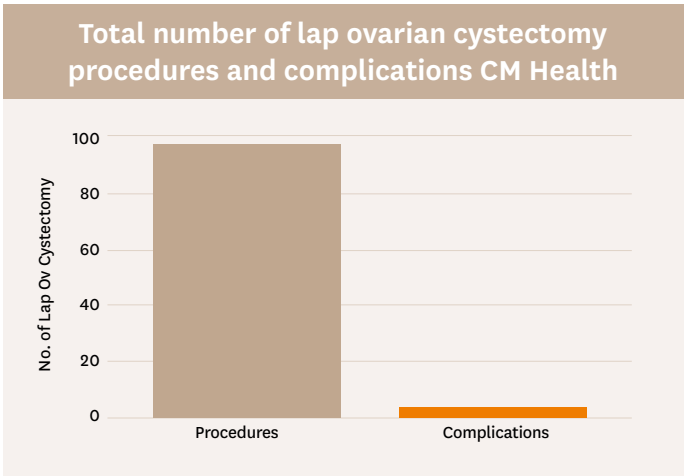
FIGURE 21.



Source: Clinical review of clinical coding and reporting – Concerto records.

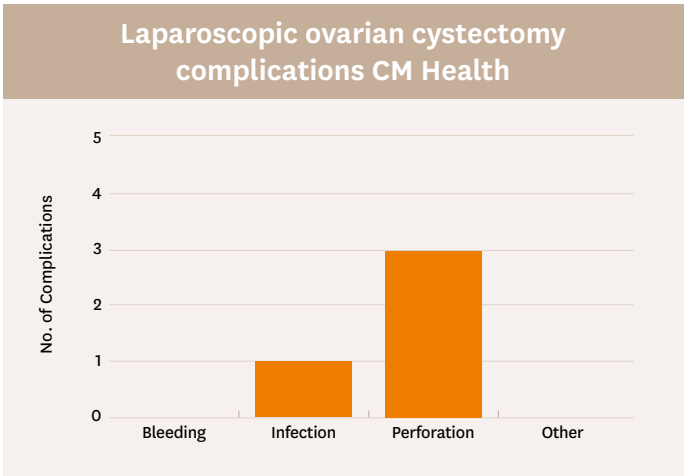
There were 98 laparoscopic ovarian cystectomies performed with 4 reported complications giving a complication rate of 4.1%.

FIGURE 22.



Source: Clinical review of clinical coding and reporting – Concerto records.

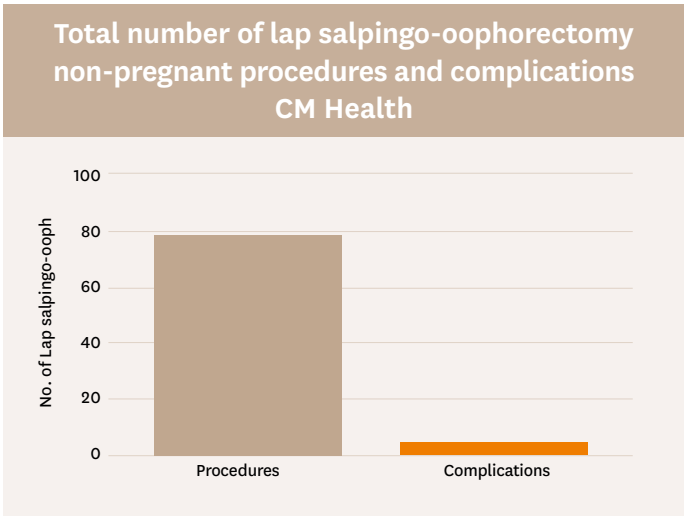
FIGURE 23.



Source: Clinical review of clinical coding and reporting – Concerto records.

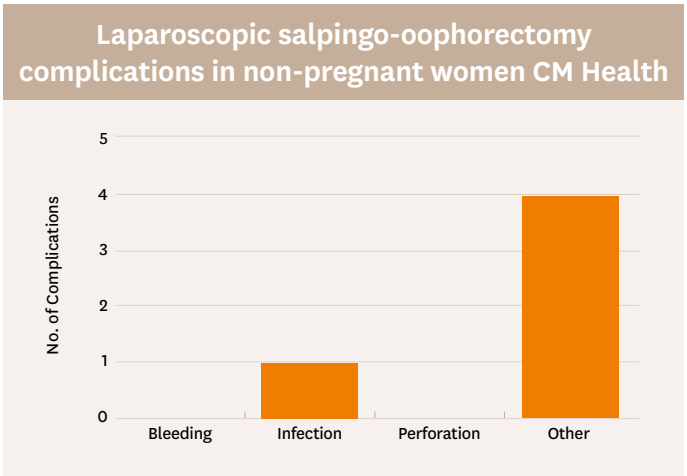
There were 79 laparoscopic salpingo-oophorectomies in non-pregnant women with 5 complications giving a complication rate of 6.3%

FIGURE 24.



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 25.

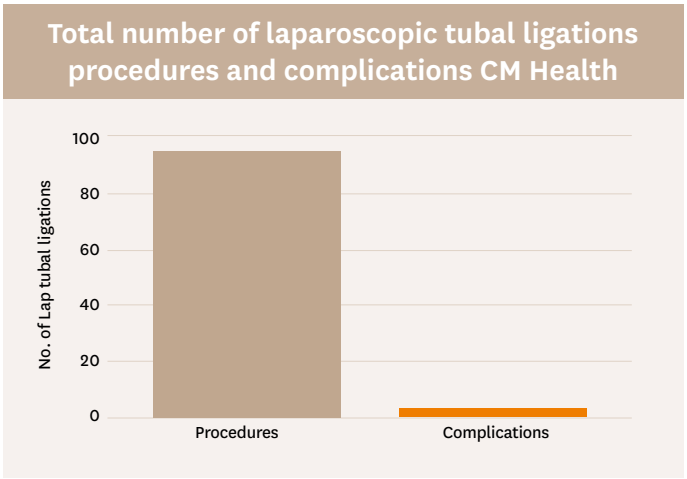


Source: Clinical review of clinical coding and reporting – Concerto records.

There were 106 laparoscopies were performed where a salpingectomy was performed for ectopic pregnancy. Our data shows 94% of women had surgical management of their ectopic gestation laparoscopically with only 6% (n=6) requiring an open procedure. This is in contrast to the 2009 data where 32% had a laparotomy as a primary procedure to surgically manage their ectopic gestation. There were no reported complications in women who underwent laparoscopic management of their ectopic pregnancy.

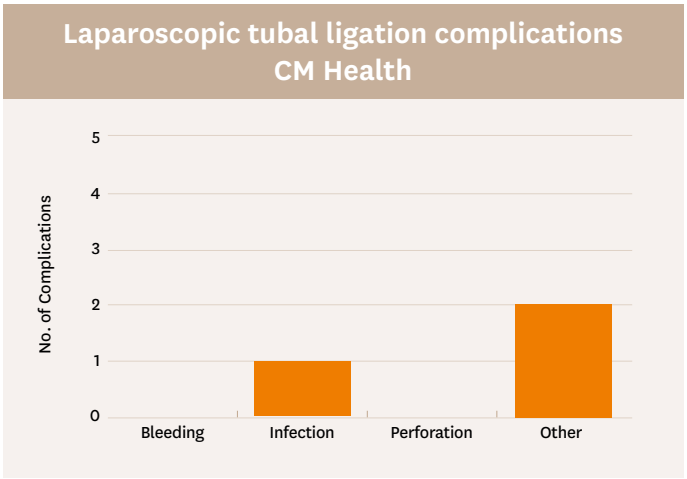
There were 95 laparoscopic tubal ligations with 3 reported complications giving a rate of 3.2%. This did not take into account any tubal ligation failures subsequent to the procedure.

FIGURE 26.



Source: Clinical review of clinical coding and reporting – Concerto records.

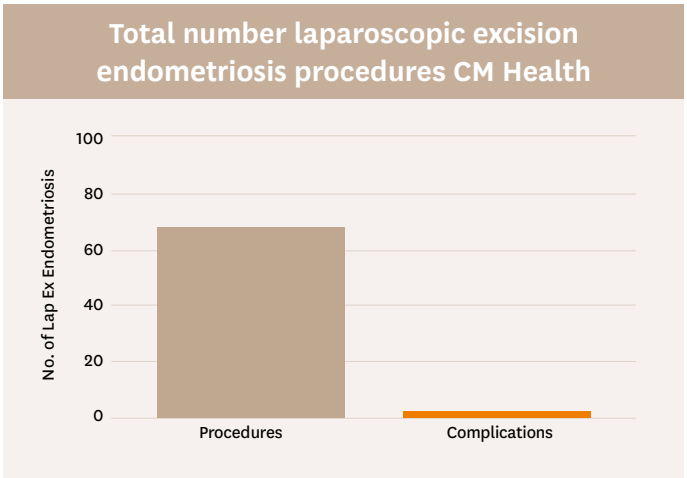
FIGURE 27.



Source: Clinical review of clinical coding and reporting – Concerto records.

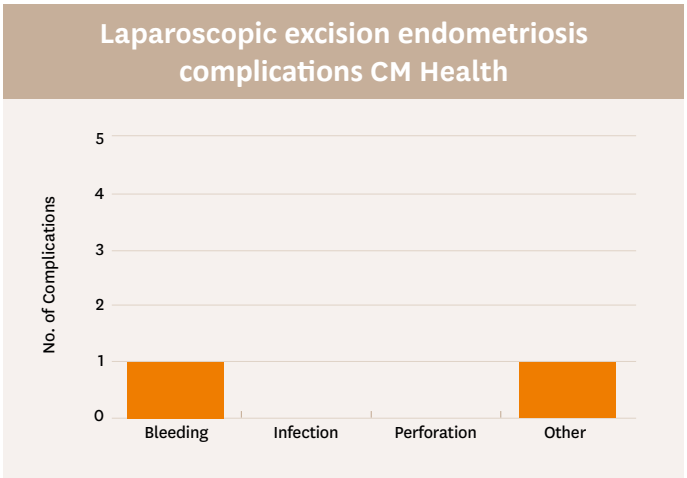
There were 69 laparoscopies primarily performed for excision of endometriosis with 2 reported complications giving a rate of 2.9%.

FIGURE 28.



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 29.

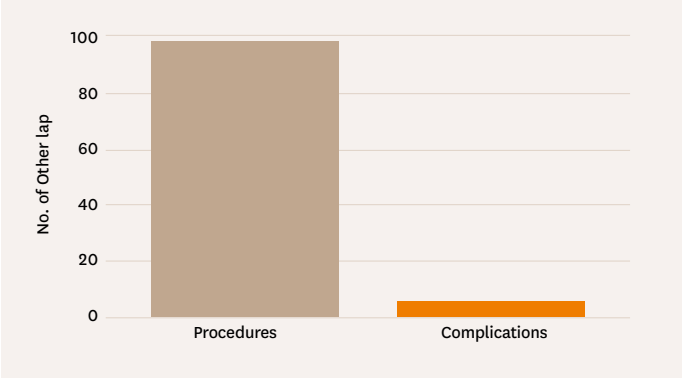


Source: Clinical review of clinical coding and reporting – Concerto records.

There were 99 laparoscopies classified as “other laparoscopy”. This group primarily includes all diagnostic laparoscopy where there was no further procedure was undertaken. In this group, there were 7 reported complications giving a rate of 7.1%. Of note from the period 1/1/16 to 31/06/16 of the 85 laparoscopies that were initially commenced as a diagnostic procedure 69% (n=59) had surgical findings and 31% (n=26) had no significant pathology.

FIGURE 30.

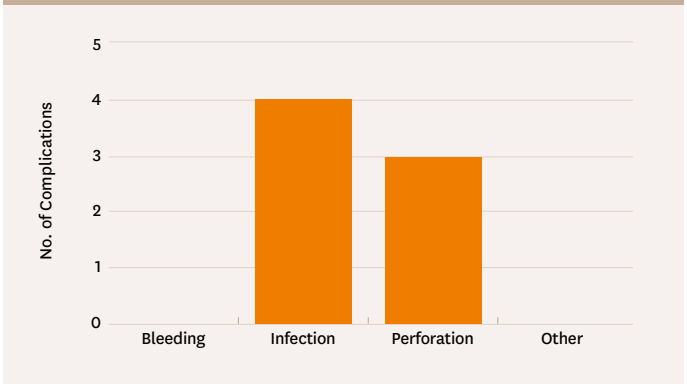
Total number of ‘other laparoscopy’ procedures and complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 31.

‘Other laparoscopy’ complications CM Health



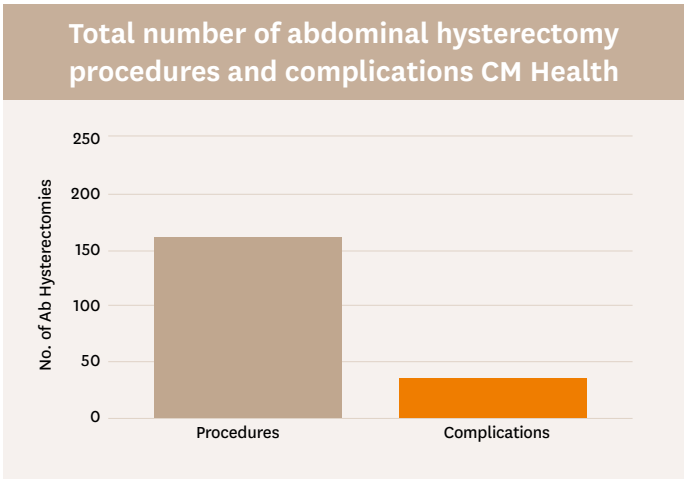
Source: Clinical review of clinical coding and reporting – Concerto records.

Abdominal and Vaginal Hysterectomy

There were 162 total or subtotal abdominal hysterectomies and bilateral salpingectomies performed (+/- oophorectomy) and 22 vaginal hysterectomies in 2016. The total number of all types of hysterectomy for the year was 233. Abdominal hysterectomy made up 70% of all hysterectomies, total laparoscopic hysterectomy comprised 21% and vaginal hysterectomy 9% of total numbers. Complication rates in the abdominal group were 23% (n=37) and in the vaginal group 9% (n=2). This is a marked contrast to 2009 when only 5% were noted to be “laparoscopically assisted” and none were recorded as a total laparoscopic procedure.

FIGURE 32.

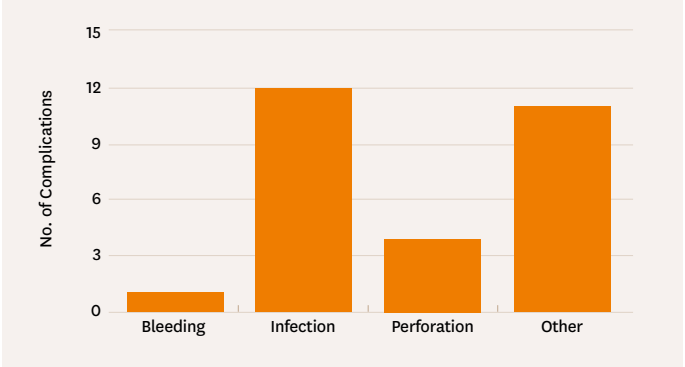
Total number of abdominal hysterectomy procedures and complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 33.

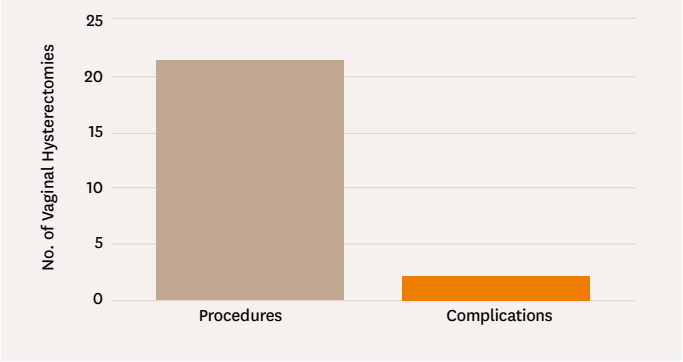
Abdominal hysterectomy complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 34.

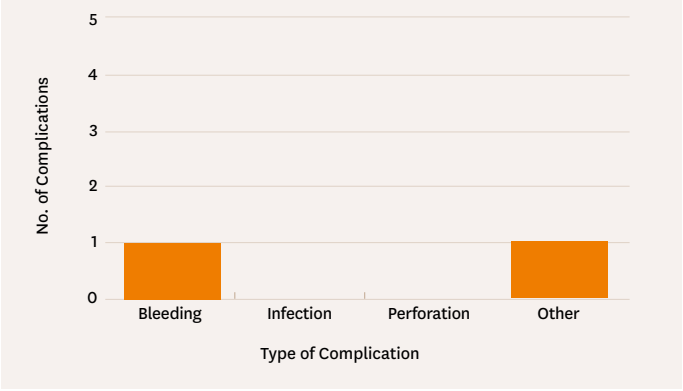
Total number of vaginal hysterectomy procedures and complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 35.

Vaginal hysterectomy complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

In our population of women undergoing hysterectomy, only 20% had a normal body mass index (BMI) of 20 to 25. 53% had a BMI between 25 and 40, 20% had a BMI between 40 and 50 and 7% had a BMI over 50.

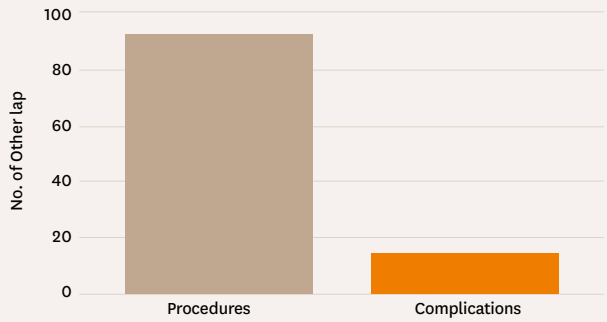
These findings have significant implications for our service provision as with increased BMIs operations become technically more challenging, operative times increase and complications are more common.[32, 33]

Other Laparotomies

There were 92 laparotomies performed for reasons other than hysterectomy in 2016 ("other laparotomy"). There were 16 recorded complications in this group giving a complication rate of 11%.

FIGURE 36.

Total number of other laparotomies procedures and complications CM Health

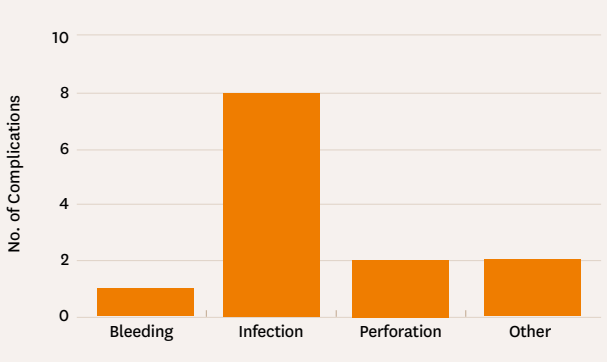


*Other including 2 deep vein thrombosis

Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 37.

Other laparotomies complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

32 Gynaecologic surgery in obese women . Committee Opinion No. 619. American College Obstetricians and Gynaecologists. Obstet Gynaecol 2015;125:274-8

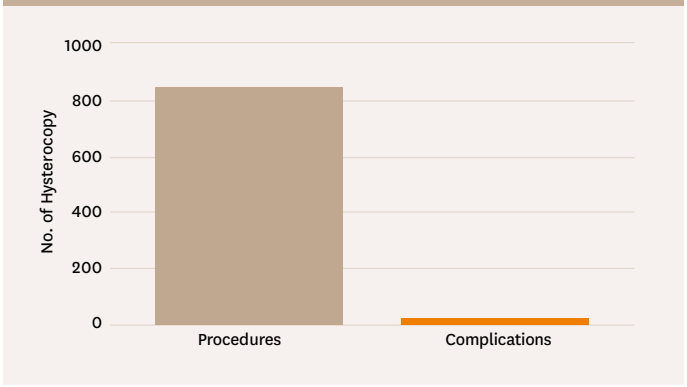
33 Khavanin N, Lovecchio FC, Hanwright PJ, BrillE, Milan M, Bilimoria KY et al. The influence of BMI on preoperative morbidity following abdominal hysterectomy . Am J Obstet Gynaecol 2013;208:449.e1-449.e6.[PubMed]

Hysterectomy D&C

There were 869 hysteroscopy D&Cs performed under GA or sedation. 12 complications were recorded giving a rate of 1.4%.

FIGURE 38.

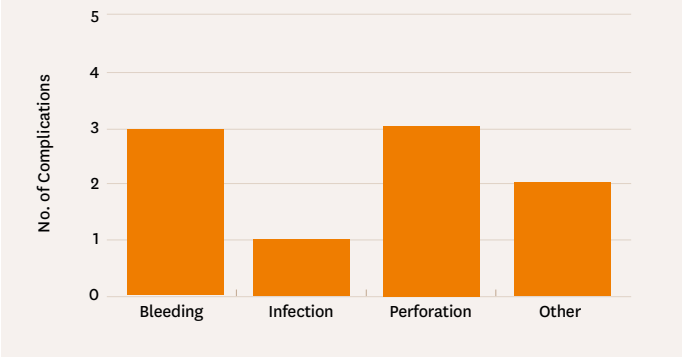
Total number of hysterocopy D&C procedures and complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 39.

Hysterocopy D&C complications CM Health



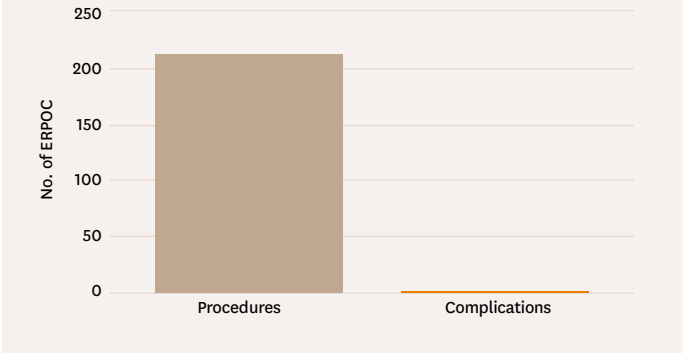
Source: Clinical review of clinical coding and reporting – Concerto records.

ERPOC

There were 214 evacuations of retained products of conception (ERPOC) performed in 2016 with 1 recorded complication. This gives a rate of 0.5%. It is likely this represents an under reporting of incomplete evacuations requiring a second procedure or treatment of infection.

FIGURE 40.

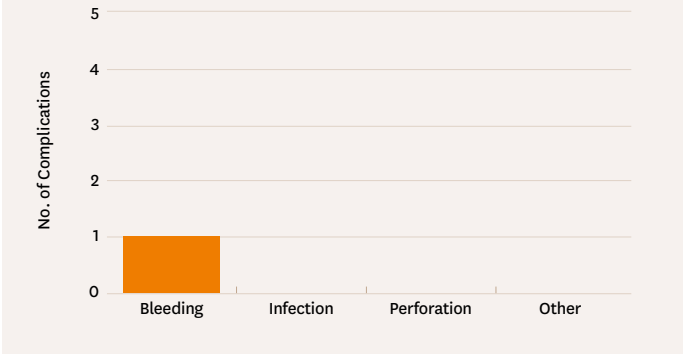
Total number of ERPOC procedures and complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 41.

ERPOC complications CM Health



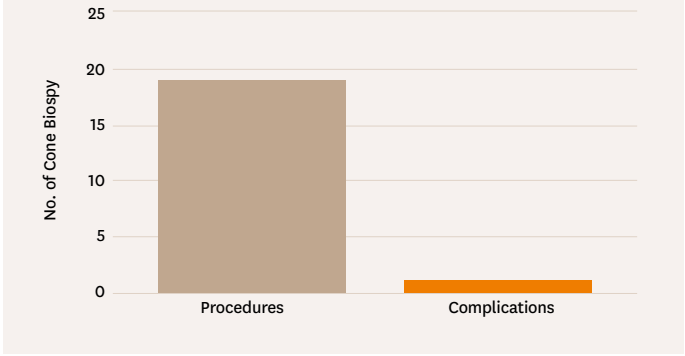
Source: Clinical review of clinical coding and reporting – Concerto records.

Cone Biopsy

There were 19 cone biopsies and 1 reported complication giving a rate of 0.5%

FIGURE 42.

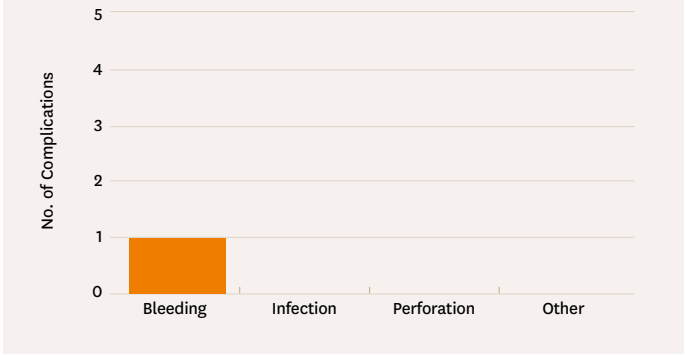
Total number of cone biopsy procedures and complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 43.

Cone biopsy complications CM Health



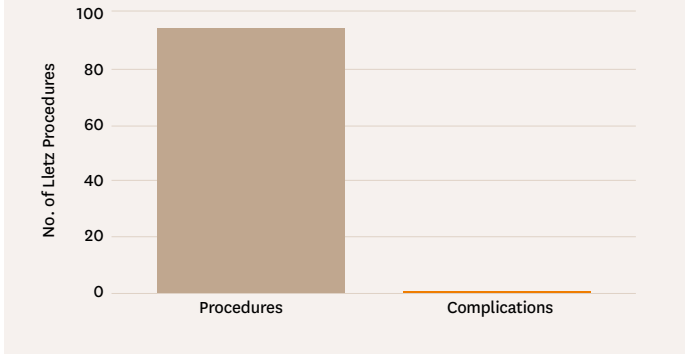
Source: Clinical review of clinical coding and reporting – Concerto records.

Lletz

There were 91 LLetz procedures performed under general anaesthetic and 1 reported complication giving a rate of 1.1%.

FIGURE 44.

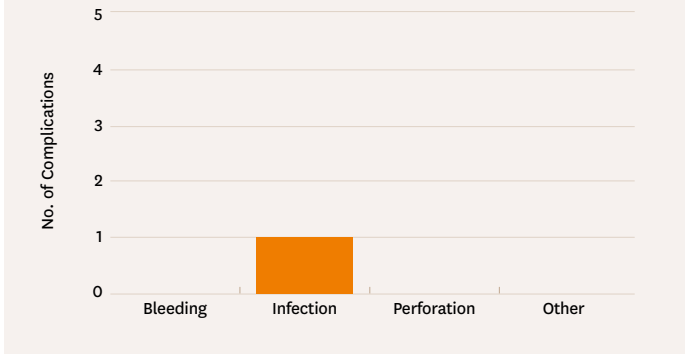
Total number of Lletz procedures and complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 45.

Lletz complications breakdown CM Health



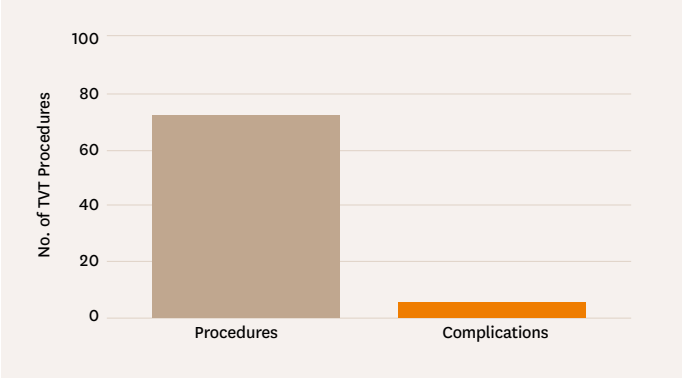
Source: Clinical review of clinical coding and reporting – Concerto records.

TVT

There were 73 TVT procedures performed with 6 reported complications giving a rate of 8.2%.

FIGURE 46.

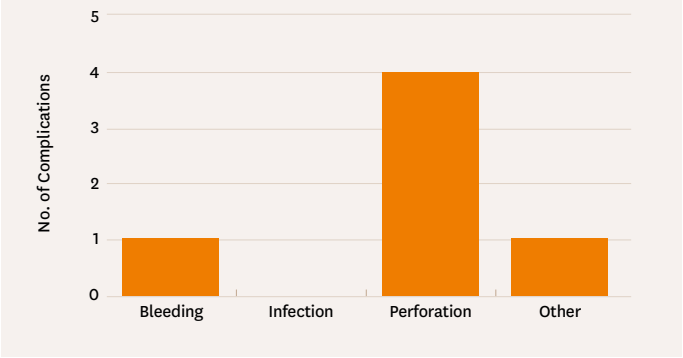
Total number of TVT procedures and complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 47.

TVT complications CM Health



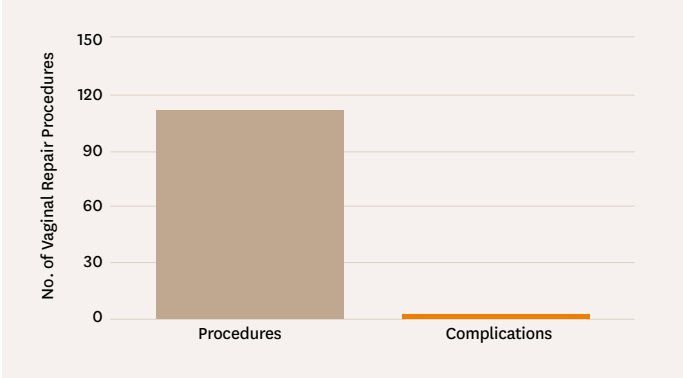
Source: Clinical review of clinical coding and reporting – Concerto records.

Pelvic Floor Repair

There were 114 vaginal repairs +/- sacrospinous fixation with 1 reported complication giving a rate of 0.9%.

FIGURE 48.

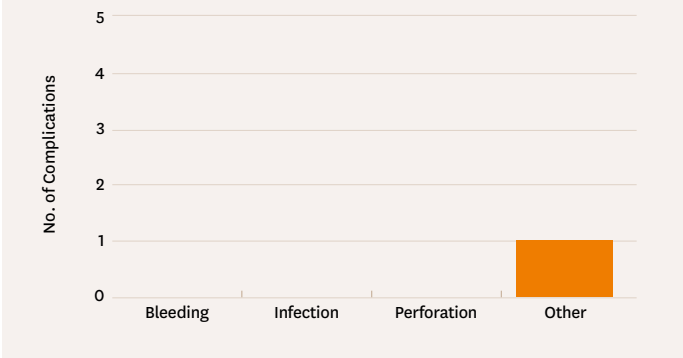
Total number of vaginal repair procedures and complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

FIGURE 49.

Vaginal repair complications CM Health



Source: Clinical review of clinical coding and reporting – Concerto records.

Other

There were 60 Novasure Endometrial ablations, 5 release of TVT tape procedures and 15 procedures classified as “other”. There were no complications reported for any of these procedures.

CM Health is committed to provision of excellence in all aspects of gynaecological care. The gynaecology component of this report represents a starting point from which we can monitor trends and further develop the service to best meet the needs of our diverse population.

Menorrhagia

BY DR SUE TUTTY

Only patients with definite pathology or whose primary care options have been exhausted, ideally should be referred. The Abnormal Uterine Bleeding (AUB) Project has now been operating in its final form since 2015 and is embedded into the Regional Abnormal Uterine Bleeding Pathway.

Numbers of Accredited GPs

There are currently 38 GPs in 21 different practices in the Counties Manukau region who are accredited to perform pipelles, access free scans, and to insert Mirenas. Despite this, only 20 of these GPs used the project in the 2016 year. In an addition to this service, Mirena's have now been made available for women who have normal investigations, do not qualify for a special authority subsidy but for whom it is the most appropriate management. Work is underway to facilitate GP to GP referrals using The Auckland Regional Health pathways platform.

Educational Opportunities for GPs

Menorrhagia is a common topic at general practice CME meetings and is covered at the Goodfellow Symposium in Auckland and the NZMA conference in Rotorua. Enquires for entry onto the acreditation pathway often come from these events.

Other educational opportunities include presentations to PHO groups, and regular emails to those credentialed on the pathway to help raise the profile.

Use of Ferinject

The provision of Ferinject within general practice completes the management for menorrhagia in primary care. Access to ferinject for GPs in CM Health is co-ordinated through POAC with clear criteria to ensure appropriate use.

CM Health will continue to work with GPs to further develop this service in the community.

5 Newborn Care CM Health

CM Health's newborn initiatives for 2016/17 have included several projects that provide improved care for our Counties babies.

Prescribing of Neonatal Vitamin K

BY DR LESA FREEMAN & JULIA CORFE-TAN, CLINICAL PHARMACIST, MATERNITY

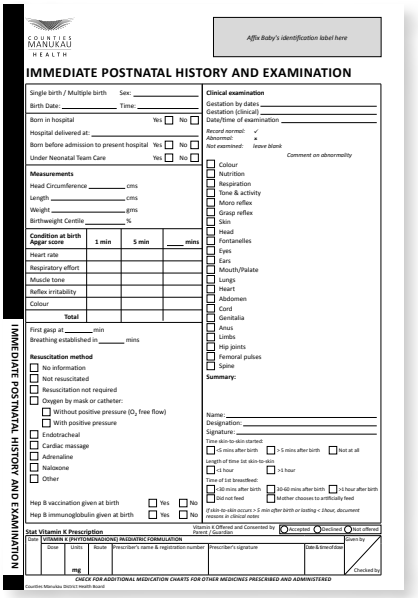
Historically the dose and route of administration, and who can give neonatal Vitamin K, was documented on CM Health's Immediate Postnatal History and Examination form. This was raised as a certification corrective action in 2014 against the Health and Disability Services Standards (2008). The Medication Management Standard 3.12 as the Immediate Postnatal History and Examination form did not include all of the components required for a prescription in accordance with the Medicines Regulations 1984.

As the majority of babies only require a once only dose of intramuscular Vitamin K and no other medications, a survey was undertaken of other DHBs to ascertain what form they used to prescribe Vitamin K for example, the *8 Day National Medication Chart, the Day Stay National Medication Chart*, or their own DHB form. Further, the Neonatal Unit and CM Health Medication Safety pharmacists were consulted. Following the feedback received, it was determined that a prescription template would be developed to meet the legal requirements of a prescription, and included on the Immediate Postnatal History and Examination form.

In October 2016, two trainee interns retrospectively audited 85 Immediate Postnatal History and Examination forms of babies who had received intramuscular Vitamin K to determine the level of compliance in the documentation of the infant's name, NHI, weight, legibility of prescription without alteration, date of prescription, name of Vitamin K in full block capital letters in blue or black ink, route of administration, dose, and name and signature of the prescriber. Analysis of the data revealed that only four of the 85 forms (4.7%) met all of the above criteria.

The Quality and Risk Manager Kidz First and Women's Health and the Women's Health Pharmacist presented the revised Immediate Postnatal History and Examination form with the Stat Vitamin K prescription template to the Drugs and Therapeutic Governance Group at their January meeting. The Drugs and Therapeutic Governance Group signed off on the Vitamin K prescription template and the use of the form on the provision that it included the words paediatric formulation and the prescriber's registration number.

The Immediate Postnatal History and Examination form was tabled at maternity quality forum meetings and circulated to senior midwifery staff to make any other necessary amendments to the form prior to it being sent for publishing and printing.



COUNTIES MANUKAU HEALTH

Affix Baby's identification label here

IMMEDIATE POSTNATAL HISTORY AND EXAMINATION

Single birth / Multiple birth Sex:
Birth Date: Time:
Born in hospital Yes No
Hospital delivered at:
Born before admission to present hospital Yes No
Under Neonatal Team Care Yes No

Measurements
Head Circumference cms
Length cms
Weight gms
Birthweight Centile %

Condition at birth Apgar score | 1 min | 5 min | mins
Heart rate
Respiratory effort
Muscle tone
Reflex irritability
Colour
Total

First gasp at min
Breathing established in mins

Resuscitation method
No information
Not resuscitated
Resuscitation not required
Oxygen by mask or catheter:
Without positive pressure (O_2 free flow)
With positive pressure
Endotracheal
Cardiac massage
Adrenaline
Naloxone
Other

Hep B vaccination given at birth Yes No
Hep B immunoglobulin given at birth Yes No

Clinical examination
Gestation by dates
Gestation (clinical)
Date/time of examination
Record normal: ✓
Abnormal: x
Not examined: leave blank
Comment on abnormality

Colour
Nutrition
Respiration
Tone & activity
Moro reflex
Grasp reflex
Skin
Head
Fontanelles
Eyes
Ears
Mouth/Palate
Lungs
Heart
Abdomen
Cord
Genitalia
Anus
Limbs
Hip joints
Femoral pulses
Spine

Summary:

Name:
Designation:
Signature:

Time skin-to-skin started:
<5 mins after birth >5 mins after birth Not at all
Length of time 1st skin-to-skin
<1 hour >1 hour
Time of 1st breastfeed:
<30 mins after birth 30-60 mins after birth >1 hour after birth
Did not feed Mother chooses to artificially feed
If skin-to-skin occurs > 5 min after birth or lasting < 1hour, document reasons in clinical notes

Stat Vitamin K Prescription
Vitamin K Offered and Consented by Parent / Guardian: Accepted Declined Not offered

Date	VITAMIN K (PHYTOMENADIONE) PAEDIATRIC FORMULATION Dose	Units	Route	Prescriber's name & registration number	Prescriber's signature	Date & time/Given	Given by / Checked by
		mg					

CHECK FOR ADDITIONAL MEDICATION CHARTS FOR OTHER MEDICINES PRESCRIBED AND ADMINISTERED

Counties Manukau District Health Board

IMMEDIATE POSTNATAL HISTORY AND EXAMINATION

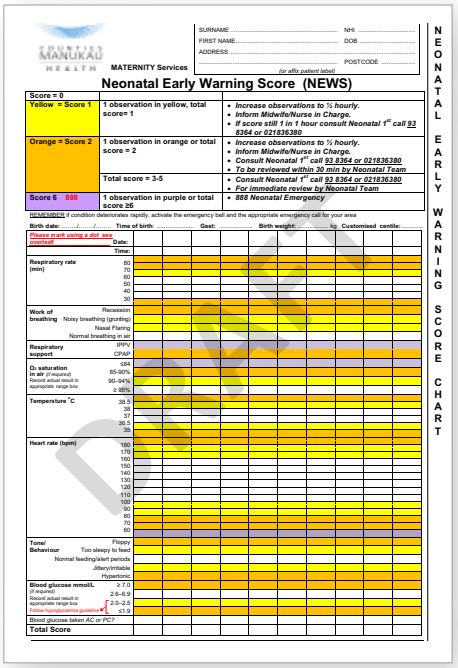
Communication has been provided to all CM Health midwives, obstetric doctors, Neonatal Care, Emergency Department and LMCs regarding the requirements for the prescribing of intramuscular Vitamin K on the Immediate Postnatal History and Examination form. A re-audit will then be performed post-implementation on 1 June 2017.

Introduction of the Neonatal Early Warning Score (NEWS)

BY KATHY OGILVY AND DR LESA FREEMAN

NEWS Steering Group: Kathy Ogilvy, Dr Chris McKinlay, Dr Lesa Freeman, Amy Lewis, Tish Taihia, Tanya Wilson

Following a recent serious adverse event review, it was recommended that a graphical recordings chart be introduced for at-risk neonates to show trends in neonatal vitals status, to provide guidance about when neonates should be referred for medical review, and when an emergency code should be called. A multi-disciplinary steering group was established to design and implement a Neonatal Early Warning Score (NEWS) chart and accompanying guideline.



The NEWS chart has been based on one currently in use at Canterbury DHB, and adapted to reflect local requirements. The chart will be a standard form of documentation for all newborns and will be implemented across Maternity Services. Only babies with risk factors for sepsis or physiological deterioration will require on-going monitoring.

The following parameters will be recorded: respiratory rate, work of breathing, respiratory support, oxygen saturations, temperature, heart rate, tone and behaviour, and blood glucose. The assigned score will be used to provide clear guidance about when to escalate care and seek additional medical help at Middlemore Hospital and at Counties Manukau community birthing units.

The first draft of the NEWS chart was circulated to key stakeholders in April 2017, and has been revised with the feedback received. A three-day pilot was conducted in June, which will be followed by wide consultation in July. A further large pilot will be conducted in September in Birthing and Assessment, Maternity North and South, and Pukekohe, Papakura and Botany Downs Birthing Units. The NEWS chart will be implemented in October, following the roll out of an education programme to all maternity staff and lead maternity carers.

The steering group would like to acknowledge the foundation work undertaken by Jonathan Barrett Neonatal CNS.

Sudden Unexpected Death in Infancy (SUDI)

BY DR CHRISTINE MCINTOSH, GENERAL PRACTITIONER LIAISON

The Child and Youth Mortality Review Committee 12th Data Report 2011-15 (CYMRC, 2017) showed that Maaori Sudden Unexpected Death in Infancy (SUDI) mortality is at the lowest since CYMRC began reporting in 2002. However, ethnic disparity continues, with Maaori and Pacific infants being substantially more likely to die of SUDI than infants of other ethnicities.

Critical to SUDI prevention is eliminating smoking in pregnancy, when smoking in pregnancy has occurred, ensuring the baby sleeps in its own baby bed in its first year of life, and using consistent safe sleep messaging.

The **CM Health Safe Sleep Programme** provides both safe sleep baby beds (pepi-pods and wahakura) for infants and intensive safe sleep education to the family of higher risk infants in their first weeks from birth. Infants older than six weeks can be referred to Pregnancy Help to access a bassinet that will last for six to eight months. Ensuring funding for a continuous supply of baby beds for the Safe Sleep Programme has been an on-going challenge. MoH have agreed to financially support the safe sleep programmes nationally from 1 July 2017 for three years.

Workforce education has been a key strategy in CM Health maternity services and child health services for safe sleep/ SUDI education, and has been a requirement for all staff and contracted organisations from 2016. Participation is being audited. The numbers for 2016 calendar year were very encouraging and showed 116 CM Health staff have completed the course, as well as 89 Plunket staff (Auckland region), and a number of Well Child Tamariki Ora providers, GPs, health professionals and providers.

The purpose of the workforce education is to ensure that all healthcare workers who work with mothers and infants are competent in evaluating SUDI risk and providing consistent safe sleep messages to whaanau during pregnancy, at birthing, and in the first months of the baby's life.

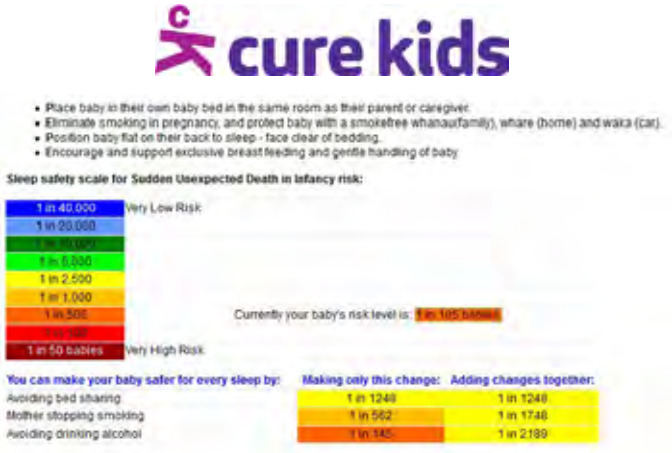
Safe sleep auditing continues to be completed on five women and their babies in each of the postnatal care facilities (Maternity Ward, North and South, Pukekohe, Papakura and Botany Downs Birthing Units) and within Kidz First Surgical, Medical and Neonatal Care, giving a total of 40 audits per week.

An important part of the programme is the **Safe Sleep Champions Group**, who meet monthly, and the **South Auckland SUDI Network** who meet bi-annually. These forums provide the opportunity for wider midwifery, Well Child Tamariki Ora, primary care NGO and community involvement in SUDI programme development.

The **Smokefree Pregnancy Incentives Programme** has played an important part of the SUDI Champions Group. This year the Te Rito Ora Breastfeeding Support Programme has also amalgamated into a joint champions meeting. This helps to ensure good communication and alignment of the three programmes.

The **SUDI Governance Group** continues to meet monthly to guide the continued development of the Safe Sleep Programme at CM Health.

The **Safe Sleep Calculator**, an online tool for assessing risk of SUDI for infants, continues to be co-designed in primary care in practices in South Auckland and Whanganui in a project funded by Cure Kids. Planning is underway to enable referral to the Safe Sleep Programme from the Safe Sleep Calculator form.



Safe Sleep Calculator – an example of a result.

Safe Sleep for Babies Guideline

BY DR LESA FREEMAN

A Safe Sleep for Babies Guideline has been developed with representatives from the SUDI Governance Group in accordance with the Regional Safe Sleep Policy, to reflect best practice.

This draft guideline was sent out in March 2017 for wide circulation across Women's Health, Kidz First and SUDI Governance Group members and their respective groups for feedback. As part of the consultation process, representatives of the SUDI Governance Group have further attended forums with community LMC and DHB community midwives to discuss the guideline and safe sleep calculator prior to its implementation across Kidz First and Women's Health Divisions.

Healthy Heart Neonatal Pulse Oximetry Screening

BY LYNN AUSTERBERRY, CHARGE MIDWIFE MANAGER, PUKEKOHE BIRTHING UNIT & HELENMARY WALKER, CHARGE MIDWIFE MANAGER, BOTANY DOWNS BIRTHING UNIT

The healthy heart screening research trial, led by Dr Elza Cloete, commenced for CM Health at Pukekohe Birthing Unit in November 2016. The screening involves Pulse oximetry testing to detect the oxygen saturation rates of babies' blood. The screening assists in early detection of congenital heart disease (CHD). Some forms of the disease need to be treated early in a baby's life and are known as 'critical' CHD.

Every year nearly 100 babies are born with a critical heart defect. Pulse oximetry can diagnose babies with CHD before they become blue and sick. The screening takes approximately 10 minutes in total, and is undertaken on all babies prior to discharge whose mothers have provided informed consent.

Botany Downs, Papakura and Pukekohe birthing units have been part of the Pulse Oximety Study over the past seven months. Initial results have demonstrated a screening success rate of between 50% and 78%. This compares favourably with Auckland City Hospital and Birthcare. As the trial rolls out, it is envisaged that screening rates will increase.

Neonatal Outcomes


BY DR MAISIE WONG, NEONATOLOGIST & DR LINDSAY MILDENHALL, CLINICAL LEAD NEONATES

It's important when considering the quality of the maternity services, that neonatal outcomes are reviewed as the management of women during pregnancy and labour impacts on the outcomes for their babies.

Kidz First Neonatal Care (KFNC) is part of CM Health's Kidz First Children's Hospital and works closely with Counties Manukau Maternity Services.

Situated adjacent to Kidz First wards, Theatre and Intensive Care complex, KFNC has 28 resourced cots with facilities to provide 12 intensive (level III) and 16 special care (level II) cots to premature or unwell neonates. Resourced capacity can sometimes increase to meet regional and national demands during times of high need.

KFNC is staffed by a dedicated nursing workforce who includes a large complement of senior roles, including clinical nurse specialists, lactation consultants, clinical charge nurses, a nurse educator, clinical coach and a nurse manager. The medical team comprises senior medical officers, a permanent MOSS and rotating registrars. Allied health has an integrated role in the multidisciplinary team and close ties are held with Social work, Child protection, Speech Language therapy, KF home care and dieticians. Transitional care is provided by Maternity Services and close working relationships with Women's Health, including peripheral birthing units, which ensure continuity of care and safe discharge to either midwifery care or Well Child providers.

Family centred care and partnership with parents and whaanau is integral to our model of care. To encourage parental confidence, our facilities and processes are designed to be welcoming and family friendly. Parents are encouraged to participate fully in the care of their baby at all levels and are supported to visit daily for extended periods.

Admissions to Neonatal Care

The number of admissions to the unit and WIES has increased in 2016 compared to previous years which have resulted in increasing the cot numbers in KFNC (see Figure 50).

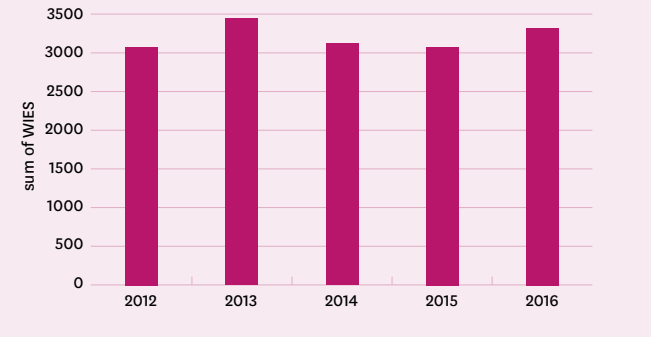
FIGURE 50.

Total admissions to Middlemore Neonatal Care, Level II & III, 2009-2016

Source: Data provided by Health Intelligence and Informatics 2015. Each baby is only counted once ie if they are transferred from level III to level II they are not counted twice. This is a different data source to the data provided for the 23-31 week infants.

FIGURE 51.

Sum of WIES by calendar year, 2012-2016

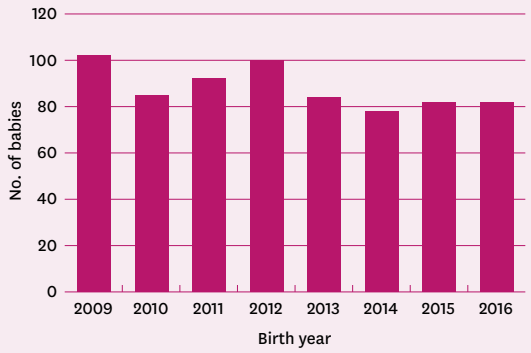


Source: Casemix. Sum of WIES includes all inpatient neonatal babies admitted (DHB Maternity provider Level 0, Independent Maternity Provider level 0, Neonates L1, Neonates L2, Neonates L3).

The number of admissions of babies 23-31 weeks decreased from 99 in 2012 to 78 in 2014 with numbers stable in recent years (see Figure 52).

FIGURE 52.

Total admissions to Middlemore Neonatal Care, Gestational age 23-31 weeks, 2009-2016



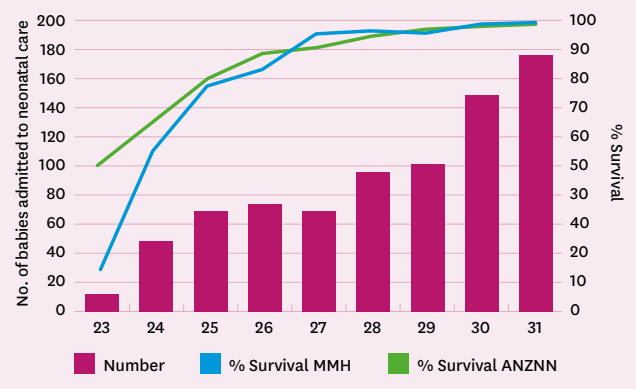
Source: Data provided by Middlemore Neonatal Care 2016. Collected as per ANZNN guidelines.

ANZNN Comparison Data

Australian and New Zealand Neonatal Network (ANZNN) is a neonatal network which all level 3 neonatal units in Australia and New Zealand contribute data to. We are able to compare survival and morbidity data with the ANZNN data provided in the annual feedback.

FIGURE 53.

Number of admissions, by gestation and percentage survival. Middlemore Hospital, 2007-2016 compared to ANZNN survival by gestation 2010-2013

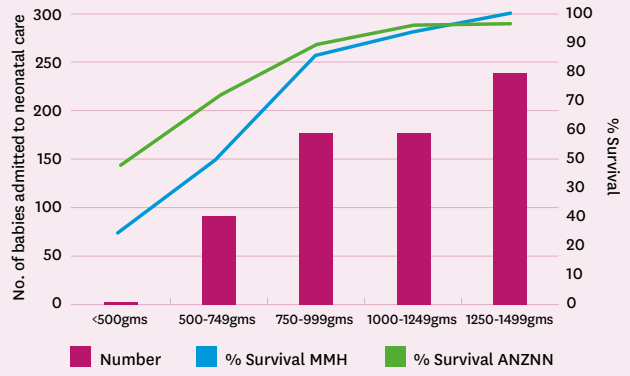


Source: Data provided by Middlemore Hospital Neonatal Care 2016. Collected as per ANZNN guidelines.
Note: ANZNN= Australia and New Zealand Neonatal Network, MMH= Middlemore Hospital.

The incidence of survival at 23 and 24 weeks gestation remain low compared to ANZNN survival rates. There were very few babies admitted at 23 weeks gestation to Middlemore Neonatal Care. However, survival rate at 25 weeks and above improved and are similar to rates reported in ANZNN.

FIGURE 54.

Number of admissions by birth weight and percentage survival by birth weight.
Middlemore Hospital, 2007-2016 compared to ANZNN survival by birthweight 2010-2013

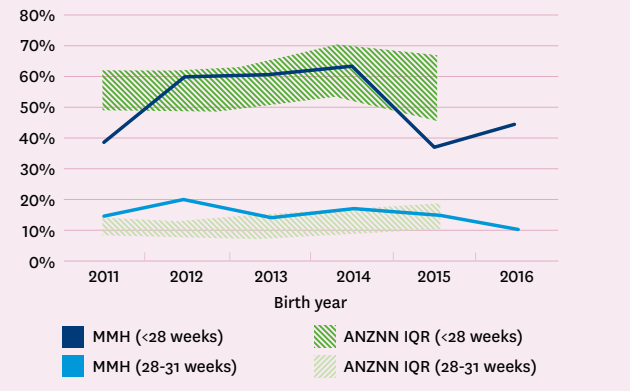


Source: Data provided by Middlemore Hospital Neonatal Care 2016 .Collected as per ANZNN guidelines.
Note: ANZNN= Australia and New Zealand Neonatal Network, MMH= Middlemore Hospital. Number = MMH numbers.

The incidence of survival in birthweight <700 gms is low compared to ANZNN but improves to be comparable at birthweight >700 gms.

FIGURE 55.

Chronic Lung Disease, 2011-2016
Babies born at <32 weeks and survived to 36 weeks PMA



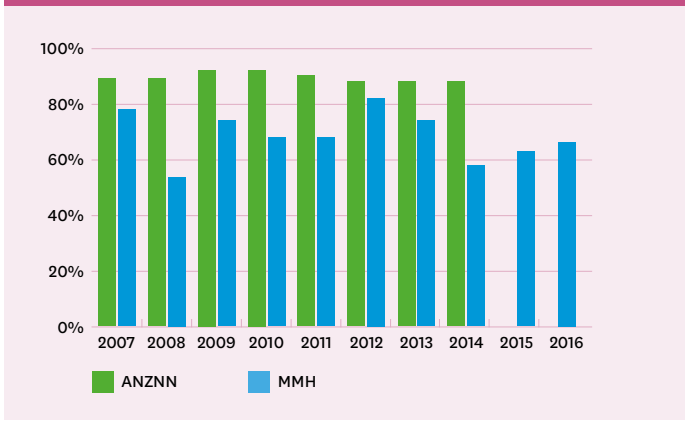
Source: ANZNN – Individual unit feedback for babies born in 2015.

The incidence of chronic lung disease has reduced in recent years for those <28 weeks compared to ANZNN and the incidence for those 28-31 weeks remain similar to ANZNN interquartile range.

This may reflect the introduction of minimally invasive surfactant therapy (MIST) which has been used increasingly in premature babies at Middlemore Hospital since 2014, allowing earlier treatment with surfactant thereby reducing ventilation.

FIGURE 56.

Percentage of 24-27 week gestation neonates ventilated, 2007-2016



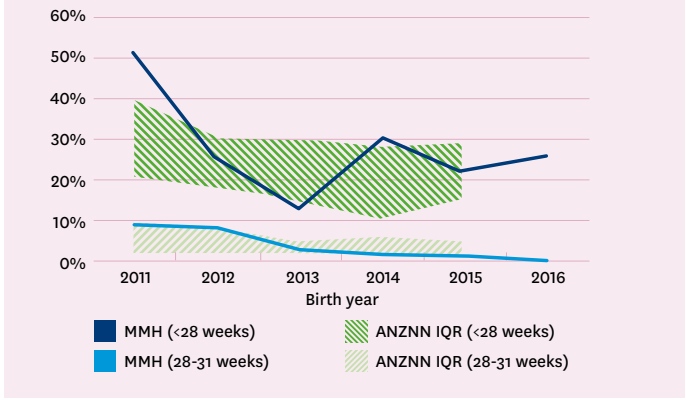
Source: Data provided by Middlemore Hospital Neonatal Care 2016. Collected as per ANZNN guidelines.
Note: ANZNN= Australia and New Zealand Neonatal Network, MMH= Middlemore Hospital.

The percentage of 24-27 weeks gestation neonates ventilated at Middlemore Hospital from 2007-2016. The percentage remains low compared to data from ANZNN.

FIGURE 57.

Late-onset Sepsis, 2011-2016

Babies born at <32 weeks and survived to day 2



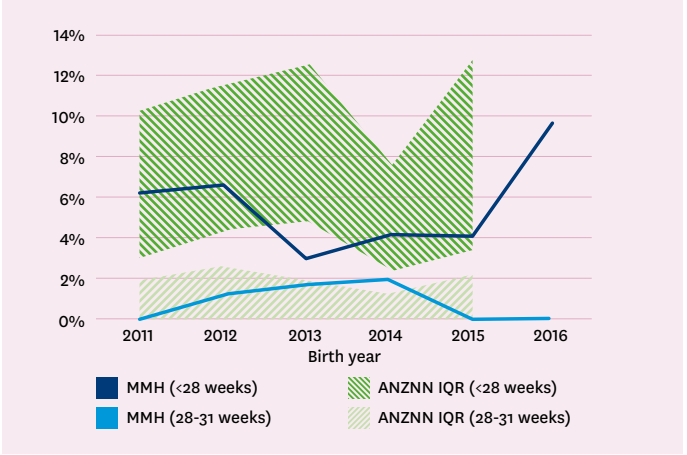
Source: ANZNN – Individual unit feedback for babies born in 2015.

The late-onset sepsis rate was high in 2011. This has reduced in preterm babies, especially in babies between 28-31 weeks gestation with no babies with late-onset sepsis in 2016 at that gestational group. A quality improvement initiative was undertaken to improve the way central lines are inserted and maintained which has reduced sepsis, as well as routine use of Lactoferrin in preterm babies.

FIGURE 58.

Necrotising enterocolitis, 2011-2016

Babies born at <32 weeks



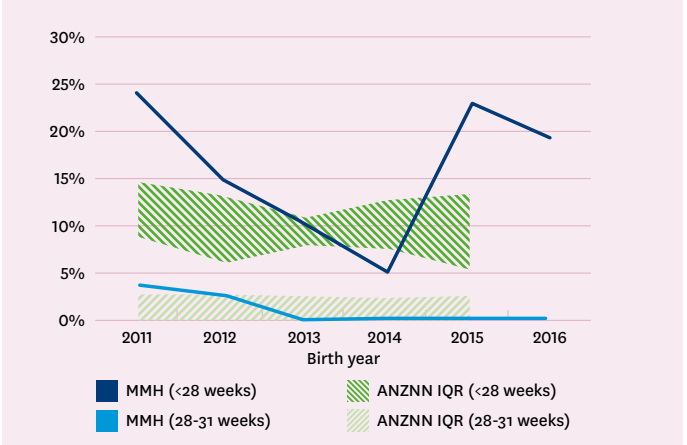
Source: ANZNN – Individual unit feedback for babies born in 2015.

The incidence of necrotising enterocolitis has reduced in 2013, 2014 and 2015. Increased incidence in 2016 related to small number of cases overall. There are no cases reported in 28-31 weeks gestation in 2015 and 2016. The overall reduction is associated with introduction of probiotics and Lactoferrin since 2011.

FIGURE 59.

Severe intraventricular haemorrhage, 2011-2016

Babies born at <32 weeks and tested for IVH

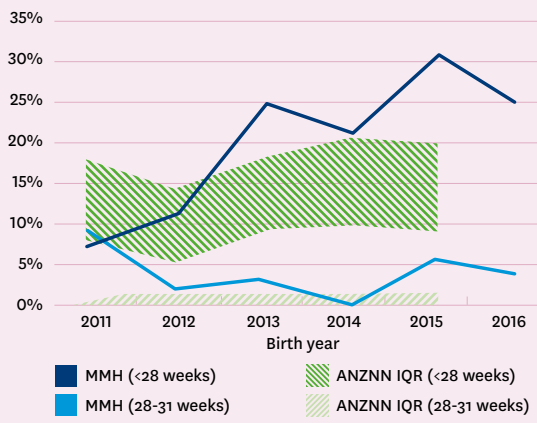


Source: ANZNN – Individual unit feedback for babies born in 2015.

The incidence of severe intraventricular haemorrhage (grade 3 or grade 4 IVH) varies due to small numbers. The severe IVH rate for babies <28 weeks gestation is higher in 2015 and 2016 compared to ANZNN but was lower in 2014.

FIGURE 60.

Severe retinopathy of prematurity, 2011-2016
Babies born at <32 weeks and tested for ROP



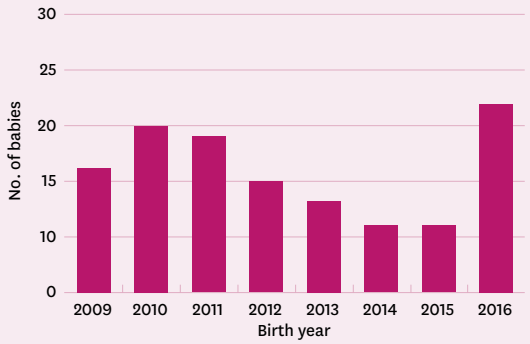
Source: ANZNN – Individual unit feedback for babies born in 2015.

The incidence of severe retinopathy of prematurity (≥stage 3 ROP) is higher than ANZNN range. A retinal camera is now used routinely to screen babies for ROP as this enables a more detailed examination of the retina. It is thought that this is responsible for the increased reported rate of stage 3 ROP. The number of babies who required treatment for ROP remains stable and low and similar to the rate reported for ANZNN.

Meconium Aspiration syndrome (MAS)

FIGURE 61.

Number of babies with MAS admitted to MMH Neonatal Care, 2009-2016

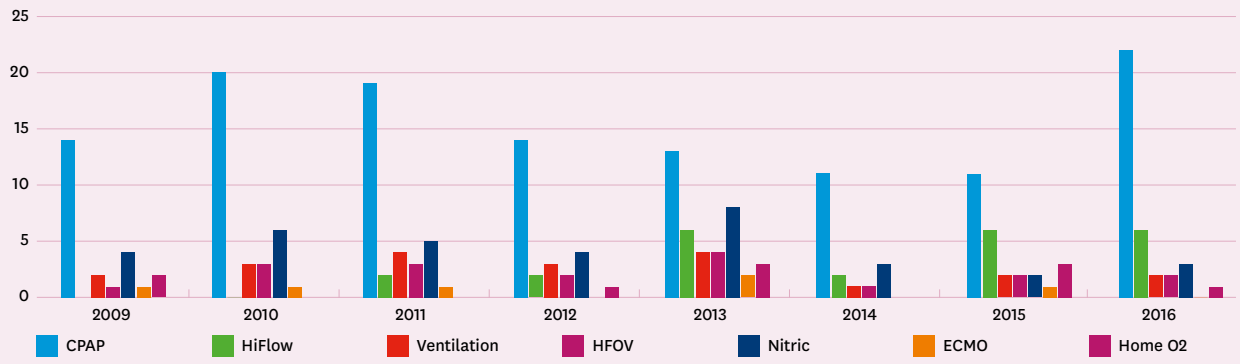


Source: Middlemore Hospital Neonatal Care 2017.

The total number of babies with MAS has increased in 2016, but most of these babies received CPAP and only a small number of these babies had severe MAS requiring ventilation.

FIGURE 62.

Mode of ventilation for meconium aspiration, 2009-2016



Source: Middlemore Hospital Neonatal Care 2017.

Kaiden with dad (Makim) and mum (April).

The Mihaere Family

Little Kaiden came into this world last year, four months premature, weighing in at just 770grams. He would spend the next few months in Neonatal Care, attached to a ventilator and getting specialist care and attention that would help save his life.

"What do you say to the people who saved your life more times than we can count? Not only that, but held our hands during the hardest times of our lives. Words can't literally give justice or explain our gratitude to the [Neonatal Care] team that has taken care of us. We will forever be grateful to everyone.

"Our little boy is so amazing and he couldn't have done any of it without all of you. So be prepared with loads of updates and visits. We were lucky to be given our twentieth chance, and we will try our very best to be the best parents to the gift you all have given us."

Makim and April Mihaere

TABLE 33.

Hypoxic Ischaemic Encephalopathy

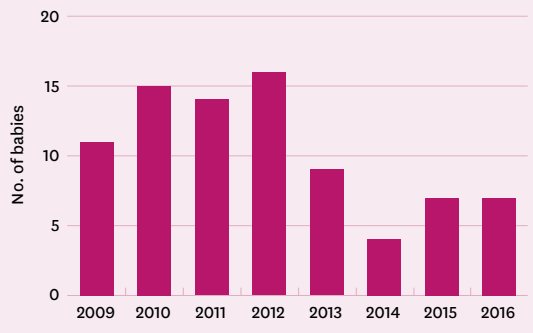
YEAR	GRADE 2 & 3	COOLED	GRADE 3	DIED
2009	11	8	1	0
2010	15	11	5	4
2011	14	12	1	0
2012	16	15	3	2
2013	9	7	3	2
2014	4	4	0	0
2015	7	6	3	3
2016	7	7	2	2

Source: Middlemore Hospital Neonatal Care 2017.

The total of Grade 2 and 3 Hypoxic Ischaemic Encephalopathy (HIE) has reduced since 2013 by about 50%. The rate is now near one per 1000 live births. Severe or Grade 3 HIE has also reduced and this diagnosis implies a poor prognosis. This will need to be closely monitored in future years.

FIGURE 63.

Hypoxic Ischaemic Encephalopathy Grade 2-3, 2009 to 2016



Source: Middlemore Hospital Neonatal Care 2017.

6 Maternity Quality Improvement Workplan 2017-2018

		ACTIVITY	MEASURE	ACCOUNTABLE
1	**PRINCIPLE** **Maternity care is provided in a culturally appropriate way which supports care that protects, promotes, and supports normal childbirth for women and babies, with evidenced based medical intervention when required.**			
1.1	Culturally Appropriate	A. Consumers and service users are included in service design.	a. Membership includes a minimum two Maternity Consumers on MQSG. b. Maternity Consumer Panel is made up of consumers that reflect the DHB Maternity population (including age, ethnicity and domicile). c. At every Maternity Consumer panel meeting there is 75% attendance.	MQSG
		B. Build and support Consumer representation on Maternity working groups.	a. Consumer representation currently on BFHI. Working towards representation on working groups, such as SUDI prevention and Smokefree.	
		A. Increase the rate of women's feedback on their inpatient experience. – Develop a system to provide the opportunity for women to complete the inpatient experience survey on-line at the time of discharge. – Provide training on the tablet and survey, to those offering the survey to women. – Present and discuss the quantitative and qualitative data at staff meetings from the in-patient experience web pages. – Develop quality improvement initiatives from the findings.	a. Increase women's feedback to 15% across maternity services.	MQF
1.2	Supporting Normal Childbirth	A. The formation of a primary birth steering group to operationalize a DHB strategy to increase primary birthing.	a. An increase in the total number of women birthing in primary birthing settings (home births and primary birthing units) by 2%, from 13.7% to 16%.	
		B. Investigate ways to support LMC & DHB midwifery workforce to increase confidence and skills to birth women in the primary birthing units.	a. Attendance at multidisciplinary skills training e.g. PROMPT for all maternity practitioners.	MQSG
		C. Pregnant women who have had a previous caesarean section are given national evidence based information to be supported to make an informed choice.	a. A 2% increase rate in women attempting VBAC.	

1.3	Care Service Coordination	A. Enhance the co-ordination of care of postnatal women who have babies on the Neonatal Care Unit. – Explore ways of providing information and education to women to ensure they receive postnatal care provision when their babies are on NNU.	a. Care is delivered in a timely manner resulting in increased inpatient satisfaction for postnatal women who have a baby in NNU.	MQF
2	**PRINCIPLE** **Women will easily access a local lead maternity carer who will provide individualised care, navigate and support the woman and her family through the Maternity care system, as close to home as possible.**			
		ACTIVITY	**MEASURE**	**ACCOUNTABLE**
2.1	Promote Early Registration with a LMC	A. Develop and implement an early registration action plan.	a. Improve the percentage of women across all ethnicities, registered with a Community LMC or DHB midwife by 12 weeks + 6 days by 10%.1. b. Reduction in gaps in care reported in Incidents and SSEs.	MQSG
		B. Maintain and disseminate LMC profile resource to GPs.	a. A reduction in numbers of un-booked women presenting in labour at CM Health Birthing Facilities.	
2.2	Enhancing the First Antenatal Visit	A. Women are prescribed iodine and folic acid.	a. 80% of pregnant women have Iodine during their pregnancy and 60% receive folic acid during the first trimester.	MQSG
		B. Undertake a retrospective audit on women registering after 28 weeks – assess gap between GP engagement and LMC registration visits.	a. Reduction in length of time between 1st GP visit and LMC registration visit.	
		C. Undertake consumer feedback survey about the First Contact Pregnancy Information Pack.	a. 80% satisfaction with the pack via consumer feedback.	
2.3	Provide Integrated Care	A. Continuation of Mokopuna Ora pregnancy and parenting curriculum.	a. Courses reaching 30% of Maaori, Pacific Islanders, teens and first time parents as per quarterly reporting.	MQSG
		B. Improve communication and collaboration between primary care and midwifery providers.	a. Reduction in gaps where communication breakdown has been reported in Incidents and SSEs.	
		C. Promote an integrated approach to care with the LMC, GP and Well Child Providers: – Lobby for IT connections to support integrated communication. – Include LMC/DHB midwives as recipients of communication between women in their care and GPs and Well Child Providers. – Support collaborative working across all projects.	a. Improvement in the following: – Lobby for funding HL7 messaging. – Reduction in incidents involving breakdown in communication. – Women receive a copy of their GP referral to share with their LMC. – Primary care membership on maternity related projects.	

1 Improve to 80% the percentage of women registered with a maternity care provider by 12 weeks + 6 days, by 2019 with a 90% target by 2021 as per BPS target.

3 PRINCIPLE

Having a baby and the transition to parenthood is recognised as a socially significant event for families.

		ACTIVITY	MEASURE	ACCOUNTABLE
3.1	Identifying vulnerable pregnancies and Neonates	A. Provide stakeholder education to develop confidence in screening for: – Maternal alcohol consumption – Maternal drug use – Maternal mental health concerns – Family violence – Safe warm homes under Awhi programme – Smokefree	a. 80% of pregnant women/whaanau are screened and appropriately referred. b. Audit stakeholder's attendance at educational opportunities.	
		B. Socialise referral and shared care pathways for pregnant/new mothers requiring support for: – Maternal alcohol consumption – Maternal drug use – Maternal mental health concerns – Family violence – Safe warm homes under Awhi programme	a. 80% of maternal mental health referrals of all pregnant women will be linked back to the LMC for shared care planning discussion within 4 weeks of referral. b. Audit monthly maternal mental health referrals and check evidence within service user clinical file of care plan discussion.	MQSG
		C. Improve screening for SUDI risk factors: – Smokefree – Safe sleep bed – Safe sleep education	a. 95% of pregnant and postnatal women and whaanau who smoke are referred to a cessation service. b. Safe sleep environments are assessed for all babies and will be referred to safe sleep team for safe sleep baby bed where require. c. Audit 100% workforce/stakeholder SUDI education has been undertaken. d. Reduction in SUDI rates.	
		D. Scope additional activity for the management of 'Small for Gestational Age' and 'reduced fetal movements'.		
		A. Implement the Neonatal Observation Guideline and Neonatal Early Warning Score chart. – Develop a graphical chart to show trends in neonatal status for babies requiring monitoring. Include guidance about when neonates should be referred for medical review and when to call a neonatal emergency code. – Implement the neonatal observation guideline and chart across maternity services. – Audit the use of the guideline and neonatal observation chart after its introduction.	a. 100% of babies will have their observations documented on a NEWS chart in accordance with the Neonatal Observation guideline.	MQF

3.1	Identifying vulnerable pregnancies and Neonates	B. Implement the baby alert system across maternity services. – Install the Wise Connect Cloud from Complete Medical Solutions (CMS) into CM Health maternity/newborn facilities. – Develop a system and processes for registering and tagging babies and alerting. – Roll-out education and training.	a. 100% of babies with alert bracelets will be monitored whilst in the maternity facilities.	
		C. Implement Safety Huddles across Women's Health. – Develop safety huddle questions for Maternity, Community Midwifery and Gynaecology. – Implement structured safety huddles across Women's Health on all shifts to foster collective situational awareness. – Conduct observations audits and staff surveys post implementation.	a. Safety huddles are performed on every shift.	MQF
3.2	Patient Journey Information	A. Research types of information women would like on the CM Health internet site – Develop site content with consumer input – Develop virtual tours of the community Birthing Units – Develop a Welcome to New Babies webpage on CM Health website. B. Develop an inpatient orientation resource for women and their whanau/support people to explain the services available to them while using CM Health facilities. – Compile information to assist inpatient women in orientating to the environment – Determine the method to best present the information for women e.g. 'table talker'	a. Resources developed and socialised.	MQF
3.3	Increasing planned pregnancies	A. All women in Counties Manukau area are able to have access to appropriate and timely contraception by a skilled professional.	a. 100% of women completing the postnatal survey were provided with contraception advice during pregnancy and after birth. b. Increase the number of LARC insertions from 8% to 15% of contraceptive use. c. The number of reported planned pregnancies increases as measured by an audit of preconceptual folic acid from 5% to 10%.	MQSG
		B. Education and skills training is made available for providers of contraception including LARCs.	a. Awaiting directive from MoH regarding credentialing training.	

4	PRINCIPLE Childbearing women and their families are supported to make choices which are underpinned by the maternity care.			
		ACTIVITY	MEASURE	ACCOUNTABLE
4.1	Obesity	A. Improve the outcomes of women and babies affected by obesity by; – Communicating the expectation of recording an accurate measured height and weight on first pregnancy care visit with a woman, and ensuring this information is shared with her maternity care provider. – Ensure all women receive personalised information about optimal weight gain in pregnancy.	a. Audit the use of the 'Healthy Weight gain in pregnancy' card.	MQSG
		B. Audit booking forms for documentation of height, weight and BMI to gain a baseline figure.	a. 100% of booked women have height and weight recorded in clinical record.	
4.2	Diabetes in Pregnancy	A. Ensure the MoH Screening, Diagnosis and Management of Gestational Diabetes in New Zealand: A clinical practice guideline (2014) is adhered to by auditing the compliance of booking HbA1c and that the appropriate referral pathway is followed.	a. 100% of women have an HbA1c included with first antenatal bloods. b. Booked women with an elevated HbA1c follow the appropriate pathway. – 90% of booked women are given appropriate nutritional advice if HbA1c is between 41-49. – 100% of women with an HbA1c >50 at booking are referred and seen in Diabetes in Pregnancy clinic within two weeks.	
		B. A pathway will be established by December 2018, under the 'Prepare Together Project', for 150 women with diabetes to receive advice to prepare for pregnancy to reduce risk of perinatal complications.	a. Pathway will be established.	
		C. Implement nutritional cooking classes for pregnant women.	a. Attendance and evaluation survey.	
		D. The 'Diabetes in Pregnancy' service to continue to support important research in diabetes in pregnancy: GEMS and TARGET Study.	a. Feedback from study Principle Investigator of the progress of the 2 studies. – TARGET: to complete recruitment by October 2017 – GEMS: to have 50% recruitment by December 2018	
4.3	Anaemia	A. Ensure abnormal ferritin results are managed in an appropriate and timely manner according to the Prevention and management of iron deficiency anaemia in pregnancy guideline.	a. Audit the number of women receiving Ferinject within the DHB and via POAC.	

4.4	Consumer Information	A. Translate prioritised consumer pamphlets into the five most common languages of CM Health demographics. – Anaemia. – Are you eligible for free maternity care in New Zealand?	a. Prioritised pamphlets are translated and available in five the languages.	
4.5	Immunisation	A. Support health professionals in primary care and consumers to increase awareness about the importance of influenza and pertussis vaccination during pregnancy. B. Circulate information/resources/ educational opportunities about importance of Boostrix and influenza vaccine to Primary Care health professionals and consumers.	a. Increased rates of Flu vac and Boostrix coverage in pregnant women in CM Health.	MQSG
4.6	Opioid Induced Constipation	A. Opioid Induced Constipation Implement the Opioid Induced Constipation bundle of care. – Include the opioid induced constipation bundle of care in the development of the caesarean section care pathway.	a. Opioid induced constipation is reduced by 30%.	MQF
5	**PRINCIPLE** **Maternity care is co-ordinated across setting and disciplines to maximise safety and use resources wisely.**			
		ACTIVITY	**MEASURE**	**ACCOUNTABLE**
5.1	Quality Framework	A. The development and implementation of a clear Quality Framework to include consumers and stakeholders across the Hospital Services and Primary and Community Directorate.	a. Work in progress.	MQSG
5.2	MQSP Annual Workplan	A. An annual Workplan and budget prioritisation process is maintained by the MQSG. B. Advocate within the DHB for transparency of maternity funding streams to ensure sufficient resource to continue quality improvement work.	a. Funding is allocated by consensus according to the MQSG Terms of Reference. a. Representation from the MQSG is included in the wider maternity budget discussion.	MQSG
5.3	Clinical Indicators	A. Continue to communicate Clinical Indicators, DHB targets & new BPS target for maternity quality and safety to DHB provider services and primary care and consumers. B. Continue to respond to clinical to inform our work plan. C. Devise and implement a system to review the rationale for LSCS.	a. Quarterly infographic poster of maternity clinical indicators produced and circulated. a. Development of the work plan. a. Devised and implemented.	

5.4	Clinical Audit	A. Develop a Women's Health Clinical Audit Programme. – Determine which audits need to be repeated on an ongoing basis. – Develop an audit schedule and reporting formats. – Communicate findings. B. Implement corrective actions.	a. Clinical Audits are undertaken in accordance with the Women's Health Clinical Audit Programme.	MQF
5.5	VTE Risk Assessment and Management	A. Develop a system so that all women receive a Venous thromboembolism (VTE) risk assessment and appropriate management. – Perform a retrospective audit on women who have VTE events to determine what specific risk factors were present. – Update the thromboprophylaxis guideline to include risk factors for VTE and appropriate prophylaxis with multiple risk factors. – Develop a system so that all antenatal and postnatal women have a formal VTE risk assessment. – Determine a process to ensure there is education and follow-up of administration of Clexane in the community.	a. 100% of women at risk of VTE are provided with thromboprophylaxis.	MQF
6	**PRINCIPLE** **People who work in the maternity care system are provided with a safe and respectful environment in which they can learn and grow together.**			
		ACTIVITY	**MEASURE**	**ACCOUNTABLE**
6.1	Pastoral Care	A. Stakeholders are engaged in the resolution of communication issues through the pastoral care process. B. Contributing to the development of educational opportunities to support the workforce.	a. Pastoral Care report is produced quarterly. a. Attendance at extracurricular educational opportunities offered.	MQSG
6.2	Interfacing with the Community	A. Stakeholders and consumers are represented and have their contributions valued.	a. Minutes from Access Holders meetings are available on Paanui and in Our Maternity Monthly e-Update & distributed to Access Holder via e-mail. b. Representation on Consumer Panel, MQSG, Midwifery Workforce Group.	MQSG
6.3	Health Workforce	A. Maternity care providers continue to be offered information and free vaccinations of Boostrix and Fluvax.	a. There is a continued annual increase in the uptake of Fluvax for employed midwives.	MQSG

7	PRINCIPLE The quality of maternity care and service is measured and evaluated and reported on where required.			
		ACTIVITY	MEASURE	ACCOUNTABLE
7.1	National Reporting	A. Reporting to PMMRC, NMMG and MoH is undertaken.	a. Submission of Women's Health and Newborn Annual Report. b. Achievement of DHB and national quality improvement targets.	MQSG
		B. National MQSP Co-ordinators meetings/ teleconferences information is reported on at the monthly MQSG meetings.	a. Minutes from National MQSP circulated to MQSG.	
7.2	CM Health Reporting	A. Reporting to stakeholders and consumers.	a. Annual launch of MQSP Report.	MQSG
		B. An annual work plan is devised reflecting the priorities of; – CM Health – MoH – NMMG – PMMRC – other organisations as appropriate i.e. Child Youth Mortality Review Committee (CMRYC)	a. Progress updates provided at regular intervals.	
		C. A follow up audit of the transfer of clinical care process to assess adherence to 2012 Guidelines for Consultation with Obstetric and Related Medical services.	a. Audit done.	
		D. Four weekly Perinatal Mortality Meetings.	a. Attendance at meetings.	

MQSP Workplan 2016/2017

Progress update with the various areas of quality improvement work detailed in this Women's Health and Newborn Annual Report 2016-2017.

1	**PRINCIPLE** **Maternity care is provided in a culturally appropriate way which supports care that protects, promotes, and supports normal childbirth for women and babies, with evidenced based medical intervention when required.**			
		ACTIVITY	**MEASURE**	**OUTCOME**
1.1	**Culturally Appropriate**	A. Consumers and service users are included in service design. B. Develop culturally appropriate mechanism to enable timely and meaningful feedback about CM Health maternity services.	a. Membership includes a minimum two Maternity Consumers on MQSG. b. Maternity Consumer Panel made up of consumers that reflect the DHB Maternity population (including age, ethnicity, domicile). c. At every Maternity Consumer panel meeting there is 75% attendance. d. Increase women's feedback to 15% across maternity services. e. Consumer representation on Maternity working groups, such as BHFI, SUDI, Smokefree and Maternity webpages.	Achieved Achieved Achieved Work in progress 50% achieved
1.2	**Supporting Normal Childbirth**	A. Resources are produced to support the promotion of CM Health primary birthing facilities (including MMH). B. Promote confidence and skills in the LMC workforce to birth in the Primary units.	a. An increase in the total number of women birthing in primary birthing facilities by 2%, from 12% to 14%. b. Increase in the number of LMC's offering care in the primary birthing facilities. c. Explore subsidising PROMPT in the primary birthing units to all maternity health professionals.	Work in progress Work in progress Work in progress
2	**PRINCIPLE** **Women will easily access a local lead maternity carer who will provide individualised care, navigate and support the woman and her family through the Maternity care system as close to home as possible.**			
		ACTIVITY	**MEASURE**	**OUTCOME**
2.1	**Promote Early Engagement**	A. Exploring the possibility of incentivising early engagement for women. B. Develop and disseminate LMC profile resource to GPs. C. Communicate the expectation that GPs will support women to find a LMC. D. Strengthen the mechanism of feedback to GPs from the registered LMC.	a. Improve to 60% the percentage of women registered with a maternity care provider by 12 weeks, increasing reach across all ethnicities. b. A reduction in numbers of unbooked women presenting in Birthing and Assessment Unit. c. Document practice by practice the referral processes between our GPs and midwives to establish the current situation with the aim of increasing early engagement with LMC.	Work in progress On going Not achieved Achieved via MCIS

2.2	**Enhancing the First Antenatal Visit**	A. Support health professionals meet the expected standard of care for the first antenatal visit.	a. Ferritin and HbA1c are measured at the first antenatal visit and women are prescribed iodine and folic acid.	Achieved
		B. Organise a Women's Health educational day for GPs.	b. Attendance at the Women's Health Day.	Achieved
		C. Undertake consumer feedback survey about their experience of the First Contact Pregnancy Information Pack.	c. 80% satisfaction with the pack.	Work in progress
2.3	**Provide Integrated Care**	A. Implementation of Mokopuna Ora pregnancy and parenting curriculum.	a. Courses running and well attended by target audience.	Achieved
		B. Improve communication and collaboration between primary care and midwifery providers through mix and mingle sessions and joint education sessions in Primary Care.	b. Run two joint GP education sessions.	Achieved
			c. Run three Midwife mix and mingle events.	Achieved
		C. Promote an integrated approach to care with the LMC and GP.	d. Increase the number of women receiving IV fluids for hyperemesis or ferinject in general practice.	Achieved
3	PRINCIPLE **Having a baby and the transition to parenthood is recognised as a socially significant event for families.**			
		ACTIVITY	**MEASURE**	**OUTCOME**
3.1	**Identifying at Risk Situations**	A. Improve screening and socialise referral pathways for pregnant/new mothers requiring support to manage mental health, alcohol and drug use and/or family violence.	a. Increase in referrals to maternal mental health which meet the referral criteria.	Work in progress
		B. Support women to be smoke free during pregnancy by identifying and referring women to smoking cessation services.	b. 95% of pregnant women who smoke are referred to a cessation service.	On going
		C. Support parents and care givers to provide a safe smoke free space for baby by ensuring all LMCs/ Well child providers are aware of how to access baby beds if required.	c. All families assessed with unsafe sleep environments will be referred to safe sleep team which is able to provide a safe sleep baby bed where required.	On going
3.2	**Patient Journey Information**	A. Develop service information web pages on the CM Health web site.	a. Resource developed and socialised in all MMH facilities, particularly the new SUDI app.	Work in progress
		B. Develop a Welcome to New Babies webpage on CM Health website.	b. Site developed.	Work in progress
		C. Develop an inpatient orientation resource for women and their whanau/support people to explain the services available to them while using CM Health facilities.	c. Resource developed and implemented by 2018.	Work in progress
3.3	**Contraception**	A. All women in Counties Manukau area are able to have access to appropriate and timely contraception by a skilled professional.	a. All women will receive contraception advice during pregnancy and after birth.	On going
		B. Education and skills training is made available for providers of contraception including LARCs.	b. Increase the number of LARC insertions from 8% to 15% of contraceptive use.	Work in progress
			c. The number of reported planned pregnancies increases.	Work in progress
		C. Fund the insertion of LARCs for postnatal women.		Achieved

4 PRINCIPLE

Childbearing women and their families are supported to make choices which are underpinned by the maternity care providers sharing evidenced based information.

		ACTIVITY	MEASURE	OUTCOME
4.1	**Obesity**	A. Improve the outcomes of women and babies affected by obesity by; – Communicating the expectation of recording an accurate height and weight on booking a woman for pregnancy care to primary maternity provider. – Ensure all women receive personalised information about optimal weight gain in pregnancy.	a. Some measurement of GPs using the first antenatal visit pathway, weight gain and pregnancy card.	Work in progress
		B. Audit booking forms for documentation of height, weight and BMI to gain a baseline figure.	b. 100% of booked women have height and weight recorded in clinical record.	On going
4.2	**Diabetes in Pregnancy**	A. Ensure the diabetes guidelines are adhered to by auditing the compliance of booking HbA1c and that the appropriate referral pathway is followed.	a. 100% of women have an HbA1c included with first antenatal bloods. b. 90% of booked women with an elevated HbA1c follow the appropriate pathway. c. 100% of women with an HbA1c >50 at booking are referred and seen in Diabetes in Pregnancy clinic within two weeks.	On going
		B. Implement nutritional cooking classes for pregnant women.	d. Attendance and evaluation survey.	Achieved
4.3	**Anaemia**	A. Ensure ferritin is completed with first antenatal bloods and treatment according to the Prevention and management of iron deficiency anaemia in pregnancy guideline is commenced.	a. Audit that ferritin is completed with first antenatal bloods and treatment according to the Prevention and management of iron deficiency anaemia in pregnancy guideline is commenced.	Achieved
		B. Audit the number of women receiving an iron infusion within the DHB and via POAC.	b. Ferinject audit completed and reported with recommendations.	Achieved
4.4	**Consumer Information**	A. The First Contact Pregnancy Information Packs are distributed to all women at first point of contact.	a. Audit the distribution of the First Contact Pregnancy Information Packs.	Achieved
		B. Translate prioritised consumer pamphlets into the five most common languages of CM Health demographics.	b. Prioritised pamphlets are translated and available in five the languages.	Achieved
4.5	**Immunisation**	A. Support health professionals in primary care and consumers to increase awareness about the importance of influenza and pertussis vaccination during pregnancy.	a. Audit influenza coverage in pregnant women.	Work in progress
			b. Audit numbers and referral pathways for boosterix given during pregnancy.	Work in progress
			c. Circulate information/resources/educational opportunities about importance of pertussis and influenza vaccine to Primary Care health professionals and consumers.	On going

5	**PRINCIPLE** **Maternity care is coordinated across settings and disciplines to maximise safety and use resources wisely.**			
		ACTIVITY	**MEASURE**	**OUTCOME**
5.1	**Quality Framework**	A. The development and implementation of a clear Quality Framework to include consumers and stakeholders across the Hospital Services and Primary and Community Directorate.	a. Completed.	On going
5.2	**MQSP Annual Workplan**	A. An annual workplan and budget prioritisation process is devised by the MQSG. B. Advocate within the DHB for transparency of maternity funding streams to ensure sufficient resource to continue quality improvement work.	a. Completed 2015/2016. In progress 2016/2017. b. Transparent budget.	Achieved Work in progress
5.3	**Clinical Indicators**	A. Communicate Clinical Indicators & DHB targets for maternity quality and safety to DHB provider services and primary care and consumers. B. Assess and report the rate of women who receive a blood transfusion following a PPH. C. Devise and implement a system to review the rationale for LSCS. D. Audit of Induction of Labour guidelines against the regional guideline. E. Audit Perineal Care outcomes.	a. Quarterly infographic poster of maternity clinical indicators produced and circulated. b. Report PPH indicator within infographic. c. Devised and implemented. d. IOL audit completed and reported with recommendations. e. 3rd and 4th degree tear audit is completed.	Achieved Achieved Achieved Achieved Achieved
6	**PRINCIPLE** **People who work in the maternity care system are provided with a safe and respectful environment in which they can learn and grow together.**			
		ACTIVITY	**MEASURE**	**OUTCOME**
6.1	**Pastoral Care**	A. Stakeholders are engaged in the resolution of communication issues through the pastoral care process. B. Contributing to the development of educational opportunities to support the workforce.	a. Pastoral Care report is produced quarterly. b. Attendance at extracurricular educational opportunities offered.	Not achieved Achieved and on going
6.2	**Interfacing with the Community**	A. Stakeholders and consumers are represented and have their contributions valued.	a. Minutes from Access Holders meetings are available on Paanui and in Our Maternity Monthly e-Update & distributed to Access Holder via e-mail. b. Representation on Consumer Panel, MQSG, Midwifery Workforce Group	Achieved Achieved
6.3	**Healthy workforce**	A. Maternity care providers continue to be offered information and free vaccinations for petusiss and influenza.	a. There is a continued annual increase in the uptake of influenza vaccinations for employed midwives.	On going

7	PRINCIPLE The quality of maternity care and service is measured and evaluated and reported on where required.			
		ACTIVITY	**MEASURE**	**OUTCOME**
7.1	**National Reporting**	A. Reporting to PMMRC, NMMG and MoH is undertaken.	a. MQSP Annual Report completed. b. Achievement of DHB and national quality improvement targets.	Achieved
		B. National MQSP Co-ordinators meetings/ teleconferences information is reported on at the monthly MQSG meetings.	c. Minutes from National MQSP circulated to MQSG.	Achieved
7.2	**CM Health Reporting**	A. Reporting to stakeholders and consumers.	a. Annual launch of MQSP Report. b. Progress updates provided at regular intervals.	Achieved
		B. An annual workplan is devised reflecting the priorities of; – CM Health – MoH – NMMG – PMMRC – other organisations as appropriate – CMRYC	c. Workplan written.	Achieved
		C. A follow up audit of the transfer of clinical care process to assess adherence to 2012 Guidelines for Consultation with Obstetric and Related Medical services.	d. Audit done.	Achieved
		D. Four weekly Perinatal Mortality Meetings.	e. Attendance at meetings.	Achieved

7 Appendices and Glossary

Appendices

APPENDIX 1.

New Zealand Maternity Clinical Indicators

Ministry of Health, 2016. *New Zealand Maternity Clinical Indicators 2014*. Wellington: Ministry of Health.

Introduction

What is a clinical indicator?

A clinical indicator is a measure of the clinical management and outcome of health care received by an individual. For each clinical indicator, there should be evidence that confirms the underlying causal relationship between a particular process or intervention and a health outcome (WHA 2007). Clinical indicators can enable the quality of care and services to be measured and compared, by describing a performance or health outcome that should occur, and then evaluating whether it has occurred, in a standardised format that enables comparison between services or sites (Mainz 2003).

What are the New Zealand Maternity Clinical Indicators?

The New Zealand Maternity Clinical Indicators show key maternity outcomes for each DHB region and maternity facility.

The purpose of the New Zealand Maternity Clinical Indicators is to:

- highlight areas where quality and safety could be improved at a national level
- support quality improvement by helping DHBs to identify focus areas for local clinical review of maternity services
- provide a broader picture of maternity outcomes in New Zealand than that obtainable from maternal and perinatal mortality data alone
- provide standardised (benchmarked) data allowing DHBs to evaluate their maternity services over time and against the national average
- improve national consistency and quality in maternity data reporting.

The New Zealand Maternity Clinical Indicators are evidence-based and cover a range of procedures and outcomes for mothers and their babies. Where possible, the New Zealand Maternity Clinical Indicators are aligned with international maternity indicators to enable international comparison.

The Ministry of Health develops and publishes the New Zealand Maternity Clinical Indicators with support from the National Maternity Monitoring Group and the New Zealand Maternity Clinical Indicators Expert Working Group.

It is an expectation of the New Zealand Maternity Standards that the New Zealand Maternity Clinical Indicators are reviewed every three years.

Table 1: New Zealand Maternity Clinical Indicators

Population	Indicator		Numerator	Denominator
Women registered with an LMC	1	Registration with an LMC in the first trimester of pregnancy	Total number of women who register with an LMC in the first trimester of their pregnancy	Total number of women who register with an LMC
Standard primiparae	2	Standard primiparae who have a spontaneous vaginal birth	Total number of standard primiparae who have a spontaneous vaginal birth at a maternity facility	Total number of standard primiparae
	3	Standard primiparae who undergo an instrumental vaginal birth	Total number of standard primiparae who undergo an instrumental vaginal birth	Total number of standard primiparae
	4	Standard primiparae who undergo caesarean section	Total number of standard primiparae who undergo caesarean section	Total number of standard primiparae
	5	Standard primiparae who undergo induction of labour	Total number of standard primiparae who undergo induction of labour	Total number of standard primiparae
	6	Standard primiparae with an intact lower genital tract (no 1st- to 4th-degree tear or episiotomy)	Total number of standard primiparae with an intact lower genital tract with vaginal birth	Total number of standard primiparae who give birth vaginally
	7	Standard primiparae undergoing episiotomy and no 3rd- or 4th-degree perineal tear	Total number of standard primiparae undergoing episiotomy and no 3rd- or 4th-degree perineal tear with vaginal birth	Total number of standard primiparae who give birth vaginally
	8	Standard primiparae sustaining a 3rd- or 4th-degree perineal tear and no episiotomy	Total number of standard primiparae sustaining a 3rd- or 4th-degree perineal tear and no episiotomy with vaginal birth	Total number of standard primiparae who give birth vaginally
	9	Standard primiparae undergoing episiotomy and sustaining a 3rd- or 4th-degree perineal tear	Total number of standard primiparae undergoing episiotomy and sustaining a 3rd- or 4th-degree perineal tear with vaginal birth	Total number of standard primiparae who give birth vaginally
Women giving birth	10	Women having a general anaesthetic for caesarean section	Total number of women having a general anaesthetic for caesarean section	Total number of women who undergo caesarean section
	11	Women requiring a blood transfusion with caesarean section	Total number of women requiring a blood transfusion with caesarean section	Total number of women who undergo caesarean section
	12	Women requiring a blood transfusion with vaginal birth	Total number of women requiring a blood transfusion with vaginal birth	Total number of women who give birth vaginally
	13	Diagnosis of eclampsia at birth admission	Total number of women diagnosed with eclampsia during birth admission	Total number of women giving birth
	14	Women having a peripartum hysterectomy	Total number of women having an abdominal hysterectomy within 6 weeks after birth	Total number of women giving birth
	15	Women admitted to ICU and requiring ventilation during the pregnancy or postnatal period	Total number of women admitted to ICU and requiring over 24 hours of mechanical ventilation during admission any time during the pregnancy or postnatal period	Total number of women giving birth
	16	Maternal tobacco use during postnatal period	Total number of women identified as smokers at 2 weeks after birth	Total number of women with smoking status at 2 weeks after birth reported
	17	Women with BMI over 35	Total number of women with BMI over 35	Total number of women with BMI recorded
Live-born babies	18	Preterm birth	Total number of babies born under 37 weeks' gestation	Total number of babies born (live births)
	19	Small babies at term (37–42 weeks' gestation)	Total number of babies born at 37–42 weeks' gestation with birthweight under the 10th centile for their gestation	Total number of babies born at 37–42 weeks' gestation
	20	Small babies at term born at 40–42 weeks' gestation	Total number of babies born at 40–42 weeks' gestation with birthweight under the 10th centile for their gestation	Total number of babies born at 37–42 weeks' gestation with birthweight under the 10th centile for their gestation
	21	Babies born at 37+ weeks' gestation requiring respiratory support	Total number of babies born at 37+ weeks' gestation requiring over 4 hours of respiratory support	Total number of babies born at 37+ weeks' gestation

APPENDIX 2.

Review of clinical practice in South Auckland after introduction of risk reducing strategies to prevent OASIS

Review of clinical practice in South Auckland after introduction of risk reducing strategies to prevent OASIS

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Background:
Obstetric anal sphincter injury (OASIS) rates with vaginal delivery at Middlemore Hospital in South Auckland were 4.9% for the standard primiparous patient without episiotomy in 2014 and 2.2% with an episiotomy, both higher than the New Zealand average for that year[i]. Overall OASIS rates for all vaginal births at Middlemore Hospital have remained static at between 2.1-3.0% since 2007, and in 2014 occurred in 2.5% of all vaginal deliveries. Implementation of training programmes to improve perineal protection in labour have been shown to significantly reduce OASIS rates[ii] and the most recent RCOG guideline suggests that perineal support should be promoted in order to protect the perineum[iii]. A perineal care policy was introduced at Middlemore Hospital in March 2016 with the aim of reducing perineal trauma by providing guidelines for preventative strategies with vaginal delivery.

Objective:
The aim of this retrospective observational study was to identify if there have been any changes in clinical practice since the introduction of a perineal care policy in our unit, and to identify if this has translated into a reduction in the rate of OASIS.

Methods:
All accoucheurs involved with vaginal deliveries at Middlemore Hospital for the month of July 2014 were asked to complete a form for each delivery classifying the type of delivery, degree of perineal trauma and methods used to prevent perineal trauma as well as basic demographic information. A perineal care policy was introduced in March 2016 with guidelines for preventative strategies with vaginal delivery with the aim of reducing perineal trauma.
A repeat survey of clinical practice was performed for all vaginal deliveries for the month of August 2016. Information obtained was cross-referenced with delivery records and electronic databases to obtain missing data where available.

Results:
Data was obtained on 372/407 (91.4%) vaginal deliveries in July 2014 and 308/399 (77.2%) in August 2016. There was no significant difference in the ethnicity or parity distribution before and after the introduction of the policy. The assisted vaginal delivery and episiotomy rates were the same in each time period. There was an overall significant difference between the two time periods (p-value <0.0001) in the perineal cares at time of delivery (table 1) with "hands off the perineum" falling from 15.9% to 6.3% of deliveries, and "hands on the head and guarding the perineum" increasing from 64.8% to 77.4% of deliveries between these two time periods. There was no difference in the rates of reported antenatal massage, perineal massage and use of warm packs in the second stage of labour. There was an increase in the proportion of intact perineums (32.8% to 38.7%) and reduction in second degree tears (48.9% to 44.0%) but this was found to be not significant. The sphincter injury rate remained unchanged between the two groups with a rate of 2.2% in July 2014 and 3.9% in August 2016 (p=0.19).

Perineal support	2014 (n=372)	2016 (n=287)
Hands off the perineum	59 (15.9%)	18 (6.3%)
Hands on the head only	53 (14.2%)	20 (7.0%)
Guarding the perineum only	19 (5.1%)	27 (9.4%)
Hands on and guarding	241 (64.8%)	222 (77.4%)

p<0.0001

Conclusion:
The introduction of a perineal care policy has led to a change in the clinical practice of accoucheurs at Middlemore Hospital. This has not however led to a reduction in the rate of anal sphincter injuries between the two time periods studied. Given the small numbers of sphincter injuries in these groups it is possible that ongoing data collection may reveal a clinically relevant reduction in injury rates with time. The OASIS rate for all deliveries at Middlemore for the year of 2016 was 2.8% which is unchanged from previous years. It is hoped that rates of OASIS will start to decline in keeping with the reduction noted after perineal care training in previous studies.

[i] Ministry of Health. 2014. New Zealand Maternity Indicators 2014. Wellington: Ministry of Health.
[ii] Laine K, Skeldestad FE, Sandvik L, et al. Incidence of obstetric anal sphincter injuries after training to protect the perineum: cohort study. BMJ Open 2012;2:e001649. doi:10.1136/bmjopen-2012-001649
[iii] Royal College of Obstetricians and Gynaecologists. The Management of Third- and Fourth-Degree Perineal Tears. Green-Top Guideline No.29. London (UK): RCOG; June 2015

APPENDIX 3.

Anaemia fridge magnet

Maaori theme

Pacific Island and Indian theme

Glossary

Assisted vaginal birth A vaginal birth that needs assistance (e.g. forceps, vacuum extraction).

Body Mass Index is a measure of body fat based on height and weight that applies to adult men and women (mass (kg)/(height (m))2.

Caesarean section An operative birth through an abdominal incision. This includes emergency and elective, lower segment and classical and it is identified by the presence of any caesarean section clinical code.

Cephalic Head down presentation.

Cooks Catheter Balloon catheter for mechanical induction of labour.

CM Health community midwife Antenatal, labour, and postnatal care is provided by a CM Health employed midwife. Care during labour is provided by CM Health employed midwives at Middlemore Hospital or one of the three primary birthing units.

CM Health employed LMC Midwife A midwife who carries a full clinical primary workload including antenatal, intra-partum and postnatal care. Used to describe salaried position in DHB as opposed to LMC midwife who claims off the Section 88 Notice.

Epidural An injection of analgesic agent outside the dura mater that covers the spinal canal. It includes lumbar, spinal (inside the dura mater) and epidural anaesthetics.

Episiotomy An incision of the perineal tissue surrounding the vagina at the time of birth to facilitate birthing, identified by the presence of an episiotomy clinical code.

Exclusive breastfeeding The infant has never, to the mother's knowledge, had any water, formula or other liquid or solid food. Only breast milk, from the breast or expressed, and prescribed medicines (as per the Medicines Act 1981) have been given from birth.

Fellow A doctor who is has usually completed their specialised exams and is completing final year of training requirements.

Fully breastfeeding The infant has taken breast milk only, no other liquids or solids except a minimal amount of water or prescribed medicined, in the past 48 hours.

Gravida Number of pregnancies.

House officer A junior doctor, in their first 1-3 years of working, who is not yet on a specialist training scheme.

Hypoxic Ischemic Encephalopathy Brain trauma that occurs when there is an insufficient supply of blood and oxygen carried to the brain.

Induction of labour An intervention to stimulate the onset of labour by pharmacological or other means, identified by induction of labour clinical codes.

Intact lower genital tract Identified by an absence of clinical codes indicating an episiotomy or a tear of any degree (first to fourth, and including unspecified degree).

Large for gestational age Greater than the 90th percentile for their gestational age.

Lead maternity carer A person who a) is a general practitioner with a Diploma in Obstetrics (or equivalent), a midwife or an obstetrician and b) is either a maternity provider in his or her own right; or an employee or contractor of a maternity provider; and c) had been selected by the women to provide her lead maternity care.

Level II neonatal care Level 2 units within New Zealand generally care for babies 32/40 weeks and above and babies who have been transferred from Level 3 units after being clinically stabilised. They do not ventilate babies (except in emergencies) and generally use a less invasive form of ventilation continuous positive airways pressure (CPAP) for babies that are clinically stable. Some Level 2 units provide intermediate (Level 2+) care for babies over 28 weeks.

Level III neonatal care Level 3 unit provides neonatal intensive care and high dependency care. This means that they have the facilities to care for extremely premature infants (from 24 weeks gestation) and sick babies requiring ventilation, intravenous feeding and other types of intensive care monitoring and treatment.

Live birth The complete expulsion or extraction from its mother of a product of conception, irrespective of duration of pregnancy, which, after such separation, breathes or shows any other evidence of life, such as breathing, beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered liveborn (WHO 1975).

Maternity facility A facility that provides labour and birth services and inpatient postnatal care.

Midwife A person who has successfully completed a midwifery education programme that is duly recognised in the country where it is located and that is based on the International Confederation of Midwives (ICM) Essential Competencies for Basic Midwifery Practice and the framework of the ICM Global Standards for Midwifery Education who has aquired the requisite qualifications to be registered and/or legally licensed to practice midwifery and use the title 'midwife'; and who demonstrates competency in the practice of midwifery.

MyoSure A hysteroscopic device for removal of uterine pathology under direct vision.

Non-governmental organisation An organisation that is neither part of government nor a conventional for profit business.

NZDep2013 is an updated version of the NZDep2006 index of socioeconomic deprivation. NZDep2013 combines census data relating to income, home ownership, employment, qualifications, family structure, housing, access to transport and communications. NZDep2013 provides a deprivation score for each meshblock in New Zealand. Meshblocks are the smallest geographical area defined by Statistics New Zealand, with a population of around 60–110 people. NZDep2013 groups deprivation scores into deciles, where 1 represents the areas with the least deprived scores and 10 the areas with the most deprived scores. A value of 10 therefore indicates that a meshblock is in the most deprived 10% of areas in New Zealand. It is important to note that NZDep2013 estimates the relative socioeconomic deprivation of an area, and does not directly relate to individuals. NZDep2013 can not be used to look at changes in absolute deprivation over time as 10% of areas will always be the most deprived, relative to other areas in New Zealand. The indicators used to generate the index may also change over time, depending on their relation to deprivation.

The NZDep2013 Index of Deprivation is available on the Ministry of Health website.

Partial breastfeeding The infant has taken breast milk and bottle milk in the past 48 hours.

Parity The number of times a woman has given birth, including stillbirths.

Postnatal All pregnancy-related events following birth.

Post-term birth A birth at 42 or more completed week's gestation.

Preterm birth, preterm labour Birth or labour before 37 completed week's gestation.

Premature birth The birth of a baby born between 32 weeks 0 days and 36 weeks 6 days gestation.

Primary maternity facility A facility that does not have inpatient secondary maternity services or 24-hour onsite availability of specialist obstetricians, paediatricians and anaesthetists. This includes birthing units.

PROMPT A one day course managing obstetric emergencies and trauma as part of a multi-disciplinary team.

Referral guidelines Guidelines for Consultation with Obstetric and Related Medical Services.

Secondary maternity care facility A facility that provides additional care during the antenatal, labour and birth and postnatal periods for women and babies who experience complications and who have a clinical need for either consultation or transfer (Health Funding Authority 2000).

Community LMC Midwife Midwives claiming from the MoH to provide antenatal, labour and post-natal care using, primarily, a continuity of care model by the same midwife.

Senior Medical Officer Fully trained specialist doctor/consultant.

Spontaneous vaginal birth The birth of a baby without obstetric intervention (i.e. without caesarean section, forceps or vacuum), identified by the presence of a spontaneous vaginal birth clinical code with no concurrent instrumental/caesarean section code. These may include births where labour has been induced or augmented.

STABLE Course A neonatal education programme focussed on the post-resuscitation/pre-transport stabilisation care of sick infants.

Standard primipara Defined by the MoH as a woman aged between 20 and 34 years at the time of birth, having her first baby (parity = 0) at term (37 to 41 weeks gestation) where the outcome of the birth is a singleton baby, the presentation is cephalic and there have been no recorded obstetric complications that are indications for specific obstetric intervention.

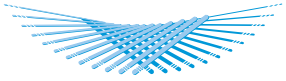
Tertiary maternity care facility A facility that provides a multidisciplinary specialist team for women and babies with complex or rare maternity needs; for example, babies with major fetal disorders requiring prenatal diagnostic and fetal therapy services, or women with obstetric histories that significantly increase the risks during pregnancy, labour and birthing (e.g. those who have already had two placental abruptions). Includes neonatal intensive care units.

Third and fourth degree tear A third or fourth degree perineal laceration during birth, identified by the presence of a third or fourth degree of tear clinical code.

Third and fourth degree tears are defined as;

- **3a** Less than 50% of the external anal sphincter thickness torn
- **3b** More than 50% of external anal sphincter torn
- **3c** both external and internal sphincter torn
- Fourth degree tears involve both the anal sphincter complex and the rectal mucosa.

Weighted Inlier Equivalent Separations (WIES) is a method of weighting individual discharges based on complexity.



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