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Maternity Quality and Safety Governance Group – Bay Of Plenty District Health Board

REGIONAL
Asa Hobson – Quality & Patient Safety
Christina Graham – Programme Coordinator (MQSP)
Connie Hui – Portfolio Manager (Planning and Funding)
Lois Austin – Quality and Patient Safety Coordinator (Women Children & Whānau/families Service)
Michael John – Obstetrician (Chair)
Natasha Rawiri – Midwife Coordinator – Safe Pēpi/infant Sleep and Smoke Cessation
Rosalind Jackson – Interim Operational Support, Maternity Units
Sarah Stevenson - Portfolio Manager (Planning & Funding)
Tim Slow – Portfolio Manager (Planning & Funding)
Tracey Wood – Midwife Educator
Vacant - Midwife Leader
Viv Edwards – Clinical Services Manager – Te Tai Raki

TAURANGA
Annette Harris – Clinical Midwife Manager
Claire McNally – GP Representative
Daryl Carrington - LMC Representative
Deborah McMurtrie – Community Radiologist Representative
Heidi Omundsen – Anaesthetist Representative
Karina Crane – Paediatrician (Women Children & Whānau/families Service)
Louise Harvey – Consumer Member
Matthias Seidel – Obstetrician
Sarah Pike - Primary Birthing Unit (Bethlehem Birthing Centre)
Tracey Mariu – Te Manu Toroa
Vicki Roche – Administration Support

WHAKATĀNE
Abigail Kolo’ofa’I – Consumer Member
Imogen Davis – Clinical Midwife Manager
Maramina Hakopa – Consumer Member
Thabani Sibanda- Obstetrician
Twink Drayton– LMC Representative

The Governance group would also like to acknowledge the women and their whānau/families that have provided valuable feedback on our maternity services. Through this feedback we are able to work towards improving the quality and safety of our maternity services in the Bay of Plenty District Health Board (BOPDHB).
ABBREVIATIONS

BMI Body Mass Index
BFHI Pēpi/infant Friendly Hospital Initiative
BOPDHB Bay of Plenty District Health Board
CFA Crown Funding Agreement
DHB District Health Board
GDM Gestational Diabetes Mellitus
GP General Practitioner
IOL Induction of labour
IUGR Intrauterine Growth restricted
LMC Lead Maternity Carer
MQSP Maternity Quality and Safety Programme
MQSGG Maternity Quality and Safety Governance Group
NSU National Screening Unit
NMMG National Maternity Monitoring Group
PMMRC Perinatal and Maternal Mortality Review Committee
SGA Small for Gestational Age
SUDI Sudden Unexpected Death in Infancy
WAU Women’s Assessment Unit
MQSP BACKGROUND

The Maternity Quality and Safety Programme (MQSP) has been in place in all New Zealand district health boards (DHB’s) since 2012. The MQSP involves ongoing systemic review by local multi-disciplinary teams that work together to identify potential improvements to maternity services and to work to implement those improvements.

The purpose of establishing the Maternity Quality and Safety Programme is to identify areas for improvement in the quality and or safety of the maternity services that are provided to the women and their pēpi/infants. This is done through the implementation of effective, appropriate maternity services and by working together with maternity providers and consumers at the local level across primary and secondary services.

The programme aims to improve care to women, pēpi/infants and their whānau/families by using a multidisciplinary and multi-agency approach and drawing from a number of improvement streams including:

- New Zealand Maternity Standards
- New Zealand Maternity Clinical Indicators
- Recommendations from the National Maternity Monitoring Group (NMMG)
- Recommendations the Perinatal Maternal Mortality Review Committee (PMMRC)

The MQSP plays an important role in raising the profile of maternity quality and safety, making it more accepted and embedded at a systems level in BOPDHB.

PURPOSE OF THE REPORT

This Annual Report covers the implementation and outcomes of BOPDHB’s Maternity Quality & Safety Programme in 2017/2018, as required under section 2.2c of the Maternity Quality & Safety Programme Crown Funding Agreement (CFA) Variation (Schedule B42):

The report includes detail about the demographics of our district population, birthing population, and the maternity services configuration.

Contribution towards addressing the priorities of the NMMG and PMMRC

The Ministry of Health Clinical Indicators are used to benchmark our maternity service outcomes nationally, showcase BOPDHB’s priorities, deliverables and planned actions for 2018/2019
The vision and mission statements of the Bay of Plenty District Health Board align with the purpose and establishment of the Maternity Quality and Safety programme.

Enabling communities to achieve good health, independence and access to quality services.

Kia Momoho Te Hāpōri Oranga
Healthy, thriving communities

Values
Compassion, All-one-team, Responsive, Excellence

Mission

Vision

The Bay of Plenty District Health Board (BOPDHB) is committed to the Treaty of Waitangi principles of Partnership, Participation and Protection, and to meaningful engagement in decision-making with Tangata Whenua at strategic, operational and service levels.

Delivering this commitment through the implementation of our He Pou Oranga Tangata Whenua Determinants of Health framework:

- Aim to maximise health and independence and reduce disparities for Māori.
- With a goal of developing an outcome focused framework that validates tangata whenua principles and practices and defines and measures Māori health and wellbeing, toiora, from a Māori world view.

All staff have a part to play in this commitment.
Hauora a Toi translates to mean the sacred breath of life that begins from the Creator and transcends to all facets of the universe.

“These four strategic priorities together will help to move us from a Good to a Great organisation. These priorities and associated actions are woven throughout our 2017-18 annual plan.”
Helen Mason, CEO, BOPDHB.
MESSAGE FROM THE CHAIR

It is with great pleasure that we present the BOPDHB Maternity Quality and Safety Programme Annual Report 2017/18. Due to a vacancy in the role of MQSP coordinator for the first half of this time frame, 2018 has been a hectic time as we have worked to catch-up. Significant work has been done on raising the awareness of the MQSP in all areas of the maternity service and DHB.

The MQSP has supported service providers and stakeholders in the maternity setting to identify and address priorities, standards and quality improvements. There has been a particular focus on equity of care provision and greater effort to work collectively across multiple areas to help achieve positive changes.

On behalf of the Maternity Quality and Safety Governance Group, I would like to acknowledge the women and whānau/families that have provided valuable feedback on our maternity services. This feedback has directly supported the identification of service gaps and improvements needed in the quality and safety of the maternity services provided within the Bay of Plenty District Health Board.

- Michael John, Chair of Maternity Quality and Safety Governance Group, Bay of Plenty District Health Board

Photograph 1: View of Mauao (Mt. Maunganui) from Mount beach.
MQSP ALIGNMENT WITH NEW ZEALAND MATERNITY STANDARDS

This Annual Report has been developed to meet the expectations of the New Zealand Maternity Standards (as set out below).

**Expectations of the New Zealand Maternity Standards:**

<table>
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<th>Maternity services provide safe, high-quality services that are nationally consistent and achieve optimal health outcomes for mothers and pēpi/infants</th>
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<tr>
<td>Criteria</td>
<td>Evidence</td>
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<td>8</td>
<td>• BOPDHB MQSGG meetings are held bimonthly.</td>
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<td></td>
<td>• Local Perinatal Mortality and Morbidity meeting findings, MCI trends and PMMRC report recommendations are discussed and improvements implemented through a trial of change process.</td>
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<td></td>
<td>• The MQSGG is made up of maternity stakeholders from across the maternity service including consumers, public health, LMC’s, as well as relevant DHB staff. An annual report is produced and circulated to local stakeholders as well as being sent to the Ministry and made accessible on the internet.</td>
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<td>• Maternity consumers are directly involved in maternity service audits through the annual consumer satisfaction survey and the post discharge patient survey.</td>
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<td>• The BOPDHB identifies 3-5 focus areas each year. These areas and the previous year’s work plan outcomes are included in the annual report.</td>
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<td></td>
<td>• Data analysis of the MCI’s identifies areas for improvement. Geographical areas requiring additional service provision are identified with an aim of equitable care provision.</td>
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<td></td>
<td>• Work is being done to access local data sooner to aid with a more timely response.</td>
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<td>• MQSP has representation from the First 1000 days programme which has a broad representation of professions and organisations on the advisory group. The First 1000 Days programme uses co-design methods with consumers to develop service improvement initiatives.</td>
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<td>• Work is ongoing to provide a seamless service as women transition through their maternity journey. As new gaps in the service are identified work is done to identify the underlying problem and address it.</td>
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<td>• Sentinel and serious event reporting is monitored with an aim of continual improvement, particularly in communication.</td>
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**Standard Two:**

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

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<th>All women have access to pregnancy, childbirth and parenting information and education services.</th>
<th>▪ BOPDHB has pregnancy and antenatal education information posted online at both the <a href="#">Bay Navigator</a> website. There are a number of funded and unfunded groups offering antenatal education, postnatal support and lactation support groups. There are also Māori antenatal education providers.</th>
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<td>All DHB’s obtain and respond to regular consumer feedback on maternity services.</td>
<td>▪ An annual consumer satisfaction audit is run. BOPDHB will be running the maternity service national tool in 2019</td>
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<td>Maternity services are culturally safe and appropriate.</td>
<td>▪ BOPDHB is facilitating the attendance of all staff at the Engaging Effectively with Māori education programme</td>
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| 19 | Women can access continuity of care from a Lead Maternity Carer for primary maternity care. | ▪ A proposal has been developed to establish a secondary care midwifery team with an aim to free LMC’s to provide care to low risk women.  
▪ The data collected for the MCI’s records the rate of enrolment with LMC’s prior to 12 weeks gestation. |

**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.*

| 22 | All DHB’s plan locally and regionally to provide the nationally agreed levels of primary, secondary and tertiary maternity facilities and services for their population. | ▪ The DHB funds primary maternity units (Bethlehem Birthing Centre and Opotiki) in the Tauranga community as well as the Eastern BOP. Rural primary maternity units and birthing centre services are available. The DHB provides primary care services to women without an LMC. Secondary services are available in Whakatāne and Tauranga. Women requiring tertiary care are transferred to the appropriate tertiary service.  
▪ Some inequities of accessibility have been identified, particularly the access to ultra sound services in the Eastern BOP, these are being addressed. |
| 23 | Women and their pēpi/infants have access to the levels of maternity and new-born services, including mental health, that are clinically indicated. | ▪ An audit of the equity of care for preterm labour is planned to identify areas for improvement as per the findings of the PMMRC 12th report.  
▪ Findings from a series of focus groups with LMC’s facilitated through the First 1000 Days programme have indicated a need for service provision/improvement for maternal anxiety. BOPDHB has a designated maternal mental health service for secondary level concerns. Primary care and kaupapa Māori mental health services provide for the rest of the continuum. The pathway and support for maternal (and whanau/whānau/families) mental health services is to be further investigated. |
| 24 | Primary, secondary and tertiary services are effectively linked with a seamless transfer of clinical responsibility between levels of maternity care, and between maternity and other health services. | ▪ Transfer of clinical responsibility is generally clearly documented in either letters to/from antenatal clinic or in the clinical notes of women once admitted to the wards, either in writing or through use of hand over of care stickers.  
▪ Recent focus groups have highlighted the lack of awareness of local support services. Plans are being made to address this. |
All DHB’s plan locally and regionally for effective clinical and organisational pathways to respond to maternity and neonatal emergencies.

- Emergency transfer pathways of care within the Midland region have been updated this year and circulated to all staff for feedback.
- PROMPT days are run regularly to build multidisciplinary team work and awareness of emergency pathways.

Women whose care is provided by a secondary or tertiary service receive continuity of midwifery and obstetric care.

- Currently, the LMC community continue to provide midwifery care antenatally and postnatally for secondary and tertiary care women while they are in the region and labour care on a case by case basis. A proposal has been developed to establish a secondary care midwifery team with an aim to improve continuity of care to women with complex needs. In Tauranga women remain with the same obstetrician throughout her antenatal clinic experience. In Whakatāne continuity is provided by midwives in antenatal clinic with rotating obstetricians.
- Consumer feedback demonstrates that women requiring secondary care are generally very satisfied with the continuity of midwifery and obstetric care they received.

Bay of Plenty Health System

(Infographic 1: Source BOP Strategic Health Services Plan 2017-27)
BAY OF PLENTY DISTRICT

A Large Land Mass and Diverse Population

Map 1: Bay of Plenty, North Island, New Zealand - Source BOPDHB Website

Covering 9,666 square kilometres, our DHB serves a population of 267,744 and stretches from Waihi Beach in the North West to Whangaparaoa on the East Cape and inland to the Urewera, Kaimai and Mamaku Ranges. These boundaries take in the major population centres of Katikati, Tauranga, Te Puke, Kawerau, Whakatāne, and Opotiki. Eighteen Iwi are located within the BOPDHB area, making it the area with the largest number of different Iwi.

Our population has one of the fastest growth rates of all New Zealand’s DHBs. Our total population growth in the planning period 2006 to 2026 is forecast to be 23.5%, higher than that for New Zealand as a whole. The majority of the growth is expected to be in the Western Bay of Plenty region (particularly Tauranga city) with the Eastern Bay of Plenty expected to experience a static or declining population. In this regard, 77% of our population resides in the Western Bay of Plenty.

Photograph 2: View east from the top of the Papamoa Hills.
BOPDHB Geographical Boundaries

Map 2: Bay of Plenty DHB Region - Source BOPDHB Annual Plan 2014

BOPDHB Population Makeup

Infographic 2: BOPDHB Population 2016
MATERNITY SERVICES CONFIGURATION

OPDHB’s aim is for maternity care to be planned and delivered to meet the needs of women and their whānau/families. All maternity service stakeholders working together to establish and maintain a seamless process to ensure needs are met, resulting in a positive experience for women and their whānau/families and confidence in our maternity system. The workforce in the BOPDHB is made up of doctors, midwives, nurses.

Primary care in BOP District is provided by the Lead Maternity Carers (LMC’s), which are mainly midwives with an exception of one General Practitioner in Tauranga. All LMC’s hold an access agreement with the BOPDHB. The region has two, Level two, secondary care maternity facilities located at the Whakatāne and Tauranga Hospitals and health centres at Murupara and Otoki. Whakatāne and Tauranga both have level two Neonatal Services- Special Care Pēpi/infant Units. Tauranga also has the Bethlehem Birthing Unit which provides primary care services to low-risk women along with also providing antenatal education, postnatal and lactation support groups.

The two secondary care units are staffed with midwives and a small number of registered nurses. Tauranga facility has a staff of over 50 midwives (full and part-time) and Whakatāne employs around 20 midwives. Obstetricians are available in both the secondary care facilities with Obstetric Registrars and House Surgeons on the Tauranga site. Waikato Hospital is the Tertiary Care provider for the BOP District but due to the high occupancy of the neonatal cots in Waikato, the women from the BOP may be transferred to other tertiary centres around the country as space allows.

Over 99% of pregnant women in the BOP region register with an LMC at any point of pregnancy. There are a very small number of women that do not register with an LMC and unless their delivery is imminent the women are given a list of LMC’s and offered assistance in engaging one. The one exception to this is the women who are not eligible for free maternity care. These women engage the services of an LMC antenatally but do not register with them, and their labour and birth care is provided by the DHB staff.

The LMC’s are supported by the secondary service which consists of Midwives, Obstetricians, Paediatricians, Neonatal Nurses, and Lactation Consultants. If the woman is delivered by the Maternity Unit staff midwives, then an LMC is arranged for postnatal care. If they are an out of town visitor their LMC will be contacted and updated.

Antenatal education is provided by external providers who have a contract with Planning & Funding to provide the education. In addition to this, BOPDHB has a growing number Kaupapa Māori antenatal education providers and private antenatal classes in Tauranga along with the antenatal classes run by the Bethlehem Primary Unit. Currently, there are 69 access holders in the BOP region, this is a substantial drop from 88 in 2017. The access holders do varying caseloads and at times of high demand, women are not able to register with an LMC. These
women are cared for by the DHB midwives on staff through the Women’s Assessment Unit (WAU) and have the midwife on duty provide labour and birth care. Those women, unable to access LMC care, that are low-risk and are interested in birthing at the primary unit can access care through the Bethlehem team.

**Women’s Assessment Unit**

Initially set up three years ago as a designated service to provide care to high-risk women requiring regular follow up for the likes of CTG’s, blood tests, and observations. In the past, this was a role of the DHB midwives rostered to delivery and women would be seen on a walk-in basis that often resulted in long waiting times for women as workloads were juggled and inconsistent care was provided by whoever was on each day.

The WAU is now run by a consistent group of midwives who see approximately 15 women a week. Generally, the women seen have known Intrauterine Growth restricted (IUGR) pēpi/infant’s in utero, hypertension or need increased surveillance for another reason. The service works to communicate information between the Obstetric department, LMC’s, General Practitioners (GP’s), Sonographers and other community groups as needed to ensure the woman is getting the care she needs in a timely manner.

Feedback from the women that have received care through the WAU has been very positive. They particularly like having some familiar faces when they are admitted. The multidisciplinary communication from the WAU has helped to raise the community profile of the BOP Maternity Service.

**Pēpi/infant Friendly Hospital Initiative**

BOPDHB has achieved and maintained Pēpi/infant-Friendly Hospital Initiative (BFHI) status in the Tauranga, Whakatâne and Opotiki. Murupara was exempt from this process. Due to successful passes over the last three assessments, Tauranga and Whakatâne will now be reviewed every four years. The next audit will be in 2021.

*Photograph 3: Whakatâne waterfront.*
BIRTHING POPULATION

Infographic 3: BOPDHB Maternity Statistics

**Graph 1: Identified ethnicity of birthing population**

- **Maori, 55.30%**
- **Pakeha, 30%**
- **Other, 3.70%**
- **Pacific Islander, 2.40%**
- **Indian, 2.50%**
- **Asian, 1.70%**
- **European, 5.10%**

**Bay of Plenty Maternity Statistics 2016**

- **75.5%** Vaginal births
- **24.4%** Caesarean sections
- **2727** women cared for by an LMC
- **76%** registered with an LMC in the first trimester
- **2750** Babies born in birthing facilities
- **390** Births in primary facilities
- **37%** of mothers identify as Māori
- **98%** of mothers discussed their smoking status at 2 weeks post birth
- **17%** of mothers identified as smokers at 2 weeks post birth
- **80%** of these mothers identify as Māori
There has been a shift in the birthing age from 2015 where women aged 25-29 were the most common to give birth. In 2016 the 30-34-year-olds have become the most common birthing age. There has also been a drop in the number of birthing women under 20 years of age, falling from 6.9% in 2015, to 5.1% in 2016.

Māori women represent the highest number in the under 20 and 20-24-year-old age groups. (Over 60% in under 20 group and over 50% in the 20-24 group). Pakeha women represent the highest number in all other age groups.

Graph 2: Identified ethnicity by age

Photograph 4: Midwife and New Mother
PRIMARY BIRTHING IN THE BAY OF PLENTY DHB.

Primary Birthing describes a birth where a woman identified as low-risk has a natural birth.

Evidence indicates that women who give birth in a primary care setting are more likely to have a normal birth without unnecessary intervention.

Not all women are able to have their pēpi/infants in a primary setting. To ensure that they achieve the best outcome for themselves and their pēpi/infants they need to birth in a maternity facility where they can receive the necessary obstetric, and paediatric specialist care.

There are two options for the women of Tauranga to have primary birthing care. They can choose to birth at home or at the Bethlehem Birthing Centre.

Primary care can include supportive therapies, such as: the use of immersion in water, aromatherapy, music, heat, massage, Entonox and TENS Machine for pain relief. These therapies can help support the normal physiological birthing process.

Statistics for Bethlehem Birthing Centre - 1st January to 31st December 2017

Photograph 5: Bethlehem Birthing Centre Room
The other pēpi/infants were for; ABO incompatibility, high SBR, ectopic heart rate and maternal medication.

*Abnormal routine postnatal observations include low blood sugars, tachypnoea, hypothermia and abnormal cardiac assessments- best practice is for consultation with a Paediatrician.

The Bethlehem Birthing Centre provides a primary maternity service under the Maternity Services Tier Level One Service Specification, 2011, that states:
- Is safe and appropriate to the woman’s and pēpi/infant’s needs.
- Consistent with standards, evidence-based guidelines, and best practice.
- The staff have effective collegial working relationships with the LMC midwives that access the birthing centre and their DHB colleagues.
PRINCIPLES OF THE MQSP GOVERNANCE GROUP:

- Facilitate a culture of continuous improvement to service delivery that is consumer focused, based on evidence and best practice and adopts a multi-disciplinary team approach;
- Monitor performance of service delivery and develop evidence-based strategies directed towards delivering optimal service outcomes within budget and that reflect organisational strategic directions, values, standards, policies and operational plans;
- Foster a collaborative approach with all relevant stakeholders;
- Multi-disciplinary team accountability and responsibility for service Development;
- Decision making by identifying priorities and allocating resources as appropriate to maximise potential opportunities;
- Outcomes used to measure service delivery and performance are quantifiable and measurable and external benchmarking is actively sought;
- Improved organisational communication and transparency where responsibility for safety and continual improvement permeates all levels of the organisation, with clearly understood reporting and accountability;
- Initiatives for improving the safety and quality of service involve the community and consumer input.

RESPONSIBILITIES

- Oversee the implementation of maternity quality and safety activities
- Ensure consistency across the quality activities
- Support the implementation of recommendations from national bodies such as the PMMRC and the National Maternity Quality and Safety Group
- Contribute to discussions and decisions about maternity care at DHB level, including making recommendations to other decision makers
- Identify and delegate quality improvement activities
- Oversee the production of an annual report on maternity services and outcomes
- The MQSGG reports quarterly to the DHB Governance Group, as well as circulating the minutes of MQSPGG meetings
- The MQSGG provides input and sign-off of the annual maternity report as required by the Ministry of Health
CONSUMER ENGAGEMENT

OPDHGs vision for consumer engagement is to integrate consumers into every part of the organisation as active partners in shaping how the DHB provides care. We have two enthusiastic and motivated consumers as members of the MQSGG. Both have experienced maternity services recently in the region and their feedback has enabled the group to maintain a consumer focus.

Since the start of the programme, valuable views and opinions of our consumer members have been instrumental in driving some key quality initiatives for MQSGG and in ensuring that our consumer-focused publications are worded appropriately for the audience it is targeting such as our website content and induction of labour information sheets.

BOPDHB also seeks feedback from every patient post-discharge via email. The maternity return rate has been low (about 7%). The 2019 MQSP will focus on ensuring all women and their whānau/families have access to feedback processes.

The Annual Maternity Service Survey is run for a month each year to seek more maternity specific feedback. This has a significantly higher return rate (25%) and provides greater insight into areas needing review. This year’s survey has been largely positive. Women and their whānau/families reported feeling involved in the planning of their care and well informed of choices. Information around breastfeeding was indicated as an area for increased clarity in the future.

Photograph 6: View of Mauao (Mt. Maunganui) from Tauranga Hospital
QUALITY IMPROVEMENT

1. NEW-BORN SCREENING INDICATORS

The target collection time for New-Born Metabolic Screening samples is as close to, but not before 48 hours of age. The sample needs to reach the Auckland lab by the time pēpi/infant is four days old to ensure an optimal outcome in the event of a positive test result. An increasing number of the BOPDHB samples have been reaching the lab within four days (from 64% in 2015 to 87% currently), as shown in the graph below. The national standard is set at 95%, no DHB has met this target yet. The national average currently sits at 86.6%, placing BOPDHB just above the average.

Graph 7: Percent of Newborn metabolic Screening samples that reached the lab in 4 days or fewer, April 2016 to June 2018, Bay of Plenty (Source: National Screening Unit)

Actions taken previously have made small advances in reducing the duration of sample return. This year to build on those advances we have been working to identify the barriers to the timely arrival of samples at the Auckland lab. The trial of the overnight courier system started as a result of New Zealand Post discontinuing the Fastpost service and had varied results. The samples reached the lab in time, with some exceptions such as long weekends, however, the samples from the community in some cases took 3-4 days to reach the unit for courier. This has been discussed with the LMC’s to identify barriers to returning samples. There has also been considerable communication with the LMC community to raise awareness of the community courier service, which was identified as a service that was not well understood. In particular, the simple flow chart below was designed to help clarify the process post change and a list of community drop off sites circulated to help reduce the distances LMC’s have been travelling to send the samples.
New-born Metabolic Screening Flow Chart for Collection and Delivery in BOP Area

Flow Chart 1: New-born Metabolic Screening collection and delivery in BOP area for sample collector’s guidance

Following the circulation of the flowchart and community drop-off sites in February, we saw a substantial increase in return rates of blood samples, as is shown in the table above. For the month following circulation, we achieved the highest return rate for samples within the 4-day time frame that the BOPDHB region had achieved since data collection started. This result was more than 10% higher than any rate since November 2016 and has since been exceeded. All samples reached the lab within seven days, this is only the second time this has happened. Return rates are maintaining this improved rate currently and will continue to be monitored.

2. SMOKEFREE PREGNANCY

Smoking is a significant contributor to health inequity and the life expectancy gap between Māori and non-Māori in the Bay of Plenty. Smoking during pregnancy increases the risk for serious complications for both mother and pépi/infant and is considered the largest modifiable risk factor affecting maternal, foetal and pépi/infant health in the developed world. Compared to the national average BOPDHB has considerably higher numbers of women who smoke during pregnancy. Māori and those living with high deprivation have significantly higher smoking rates. The BOPDHB is committed to reducing smoking rates for all pregnant women and to the vision of a smokefree Aotearoa by 2025. Being smokefree and having smokefree environments help support the health and wellbeing of our whānau/families.

Key priorities for BOPDHB are:
- Promoting smoke-free pregnancies.
- Identifying initiatives to support pregnant women to become smoke-free.
- Improving smokefree environments for neonates, pépi/infants and children.

The national primary health target requires 90% of pregnant women to have received brief advice and the recommendation of referral for specialised smoke cessation.
support at the time of booking with a Lead Maternity Carer (LMC). BOPDHB are currently meeting this target. In addition to this, there are priorities outlined within the Māori Health Plan and in the Well-child Tamariki Ora Providers (WCTO) Quality Improvement Framework (QIF) to support women and their whānau/families to be smokefree.

Society has become more aware of the dangers of smoking during pregnancy. The impact of smoking related health risks after the birth of the pēpi/infant is less well known, and is a major health concern.

To reduce the impact of smoking on the community’s health, the BOPDHB has a dedicated Midwife Coordinator for Safe Pēpi/infant Sleep and Smoke Cessation. Her role involves:

- Promotion of smokefree health.
- Supporting pregnant women and their whānau/families to become smoke-free.

The BOPDHB works collaboratively with a number of providers to reduce the number of women smoking during pregnancy. The outcomes we aim to achieve include:

- A reduction in the number of pēpi/infants born small for their gestational age
- A reduction in smoking-related complications during pregnancy
- A reduction in respiratory infections in pēpi/infants
- Prevention of sudden unexpected death in infancy (S.U.D.I.)
- A reduction in child obesity

**Steps taken so far**

The focuses for 2017/2018 have been to build closer working relationships between LMCs and the regional smoke cessation services, Hāpainga. The DHB’s aim is to progress from providing brief advice to greater numbers of referrals to smoking cessation services, maximising the opportunities for women and their whānau/families to access a supported cessation programme.

Studies have proven that women are often highly motivated to stop smoking during their pregnancy compared to any other time in their lives. Nationally there has been a small reduction in the numbers of women smoking during pregnancy with close to 90% of women recorded as smokefree at 2 weeks post-partum. However, rates for Māori are significantly less with less than 70% recorded as smokefree. The rates for all Bay of Plenty mothers recorded smokefree at 2 weeks postpartum by their Lead Maternity Carers continues at a steady decline. The numbers of Māori women not smokefree remains high compared to the national average, with the Eastern BOP rates being up to 20% higher than the combined BOP rate.
The Midwife Coordinator Safe Sleep & Smoking Cessation (0.8FTE), is focusing her work on reducing the smoking rates for pregnant Māori women and those living in high deprivation communities across the BOP region. The purpose of the role is to contribute to the reduction of SUDI through education and coordination of the Pēpi-Pod programme and reducing smoking rates of pregnant women. The role operating across the region, working with external providers and DHB maternity services to continuously improve safe sleep and smoking cessation outcomes.

Carbon Monoxide (CO) testing is available, Nicotine Replacement Therapy (NRT) is supplied and referrals to local cessation provider; Hāpaianga, are made.

Photographs 7: Hāpaianga Stop Smoking Practitioner Candy testing a pregnant woman’s carbon monoxide level at an Ūkaipō wananga and a pregnant woman at Ūkaipō wananga with her nicotine patch in place

CO monitors are a valuable component of the Smoke-free tool-kit. CO testing is offered to all pregnant women who smoke, to provide them with the insight of how their pēpi/infants are being affected. There are 8 CO monitors in
total located in Tauranga and Whakatāne for LMCs to access.

Quit Packs include a self-help guide to stopping smoking and cessation provider contact details and are available for all midwives and other trained providers, to give out to women who are either currently smoking or who are being exposed to smoke from others around them. NRT is also available for pregnant women, new mothers and whānau/families who smoke, along with a conversation around the effective and correct use of the product.

Maternity wards now have the Nicorette 15mg Inhalator in stock as an alternative to or in combination with patches, lozenges and gum. The inhalator has been accepted as an effective method of managing nicotine withdrawal symptoms and both users of it and maternity staff comment on how easy it is to use.

Education

Education to ensure all midwives and maternity staff are kept informed of changes around tobacco control, what cessation support is available, how they can best continue to support pregnant women to become smoke-free is ongoing.

The Midwife Coordinator Safe Sleep & Smoking Cessation has attended various community events to promote smokefree messages. One event attended was the Waipu Hauora 6th annual Pink Ribbon Breakfast. In attendance were around 60 Māori women of all ages and the messages that were shared included being smokefree themselves, the importance of supporting pregnant women and other members of their whānau/families to become and stay smokefree. Also discussed was the importance of providing encouragement and support to the new mothers and their whānau/families to continue to breastfeed. This included reduction in the risk of developing breast cancer.

Photographs 8: Waipu Hauora Pink Ribbon Breakfast – promotion encouraging and supporting smokefree pregnancies and breastfeeding

The Midwife Coordinator Safe Sleep & Smoke Cessation attended the Mataatua regional Kapa Haka Festival in Te Teko. The smokefree stall was supported by Hāpainga stop smoking services and was set up in the mama, pēpi, and tamariki zone. The marquee provided a cool and restful space for mothers to breastfeed their pēpi/infants and escape the summer heat. Safe sleep was also promoted and two local
kairaranga (weavers) provided a demonstration of weaving wahakura. These were given away at the close of the festival to two mothers and their pépi/infants who had spent time in the zone.

**Photographs 9: Mataatua Regional Kapa Haka Festival – promotion of smokefree pregnancies and whanau/whānau/families, and safe pépi/infant sleep**

Education for 2nd and 3rd-year midwifery students is ongoing to ensure that they are up to date with best practice. Information is provided about resources, the importance of incorporating smokefree skills into their practice. Simple tips on how to engage with women and whānau/families when having smoke-free conversations are discussed.

**Ūkaipō**

Ūkaipō is a kaupapa Māori focused programme based at various Tauranga Marae, to support pregnant Māori women who smoke to start their smokefree journey. The programme is a joint venture between the BOPDHB and the Western BOP Primary Health Organisation and is supported by a Hāpainga smoke cessation practitioner. The pregnant women who attend, work alongside skilled kairaranga (weavers), to weave their own wahakura, which enables them to sleep their pépi/infant safely once born. The programme is incentivised and encourages the women to sustain their smoke-free journey over a longer term with the ongoing support of Hāpainga stop smoking services. Six wananga have been held since November 2016 and all women who have attended have either successfully become smokefree or have made significant changes in their lives to ensure that smoke exposure to pépi/infant and whānau/families is minimised.

**Photographs 10: Various Ūkaipō wananga and pregnant women who have attended**
Further Ūkaipō programmes will be held in 2018/19. Referrals are accepted from LMCs, other healthcare providers within the Tauranga community, or from pregnant women themselves. Other health and social services, such as Plunket, Tamariki Ora, immunisation outreach, Women’s Refuge, drug & alcohol support, and child dental services are invited to talk about their services on a 'wrap-around' day.

3. SUDDEN UNEXPECTED DEATH IN INFANCY (SUDI)

Safe Pēpi/infant Sleep Programme

The grief experienced at the loss of an pēpi/infant is shared by the whole whānau/family and their community. Reducing the rate of sudden unexpected death in infancy (S.U.D.I.) is a national priority. Coroners have identified S.U.D.I. as the leading cause of preventable post-neonatal death in infancy. Between 2010-2014, across all of New Zealand a total of 338 Pēpi/infants died of S.U.D.I. 61% were Māori, 64% were male (of which 61% were Māori). Pēpi/infants living in the most deprived areas made up 75% of the deaths (of which 66% were Māori). Pēpi/infants of mothers aged younger than 25 years-of-age made up 57% of S.U.D.I. deaths (of which 65% were Māori).

S.U.D.I. prevention continues to be a priority area for the BOPDHB. From 2010-2014 20 pēpi/infants died of S.U.D.I. in the BOP region 95% of whom were Māori. Māori pēpi/infants are 7 times more likely to experience S.U.D.I. compared to non-Māori. Therefore, action is required to improve outcomes for Māori pēpi/infants. Addressing equity issues experienced by Māori whānau/families is crucial to reducing preventable death.

Ensuring whānau/families are empowered with knowledge about prevention strategies is a key component of the S.U.D.I. prevention programme. Key aspects are:

- Smokefree pregnancies.
- Smokefree homes and vehicles.
- Safe sleep space.
- Pēpi/infants are placed to sleep on their back.
- Pēpi/infants are breastfeed.

The BOPDHB promotes whole of whānau/family awareness and enabling of whānau/families to implement these measures, to help reduce these preventable deaths.

The BOPDHB Pēpi-Pod Programme was born in June 2013; 5 years on and the programme continues. The tables below show who receiving a Pēpi-Pod.

Of note, distribution rates for Māori in the Eastern BOP have remained high and distribution to pēpi/infants at risk due to prematurity, SGA and low birth weight have increased in the 2017-18 period.

<table>
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<tr>
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<tbody>
<tr>
<td>WBOP Total</td>
<td>148</td>
<td>190</td>
<td>232</td>
<td>104</td>
<td>231</td>
<td>237</td>
<td>994</td>
</tr>
<tr>
<td>Māori</td>
<td>110 (74%)</td>
<td>148 (78%)</td>
<td>191 (82%)</td>
<td>88 (84%)</td>
<td>169 (73%)</td>
<td>179 (76%)</td>
<td>775 (78%)</td>
</tr>
<tr>
<td>Smoke exposed</td>
<td>105 (71%)</td>
<td>169 (89%)</td>
<td>192 (83%)</td>
<td>86 (82%)</td>
<td>174 (75%)</td>
<td>170 (72%)</td>
<td>791 (80%)</td>
</tr>
<tr>
<td>Prem/SGA/LBW</td>
<td>42 (28%)</td>
<td>50 (26%)</td>
<td>47 (20%)</td>
<td>32 (31%)</td>
<td>83 (36%)</td>
<td>62 (26%)</td>
<td>274 (28%)</td>
</tr>
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</table>

Table 1: Annual data for Western BOP showing distribution of Pēpi-Pods

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<tbody>
<tr>
<td>EBOP Total</td>
<td>97</td>
<td>80</td>
<td>100</td>
<td>80</td>
<td>184</td>
<td>129</td>
<td>573</td>
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<tr>
<td>Māori</td>
<td>92 (95%)</td>
<td>76 (95%)</td>
<td>96 (96%)</td>
<td>74 (92%)</td>
<td>171 (93%)</td>
<td>120 (93%)</td>
<td>537 (94%)</td>
</tr>
<tr>
<td>Smoke Exposed</td>
<td>80 (82%)</td>
<td>61 (76%)</td>
<td>89 (89%)</td>
<td>68 (85%)</td>
<td>143 (78%)</td>
<td>104 (81%)</td>
<td>465 (81%)</td>
</tr>
<tr>
<td>Prem/SGA/LBW</td>
<td>17 (17%)</td>
<td>12 (15%)</td>
<td>22 (22%)</td>
<td>17 (21%)</td>
<td>31 (17%)</td>
<td>35 (27%)</td>
<td>117 (20%)</td>
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</table>

Table 2: Annual data for Eastern BOP showing distribution of Pēpi-Pods
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</thead>
<tbody>
<tr>
<td><strong>WBOP &amp; EBOP</strong>&lt;br&gt;Total</td>
<td>245</td>
<td>270</td>
<td>332</td>
<td>184</td>
<td>415</td>
<td>366</td>
</tr>
<tr>
<td><strong>Māori</strong>&lt;br&gt;202 (82%)</td>
<td>224 (83%)</td>
<td>287 (86%)</td>
<td>162 (88%)</td>
<td>340 (82%)</td>
<td>299 (82%)</td>
<td>1611 (89%)</td>
</tr>
<tr>
<td><strong>Smoke Exposed</strong>&lt;br&gt;185 (76%)</td>
<td>230 (85%)</td>
<td>281 (85%)</td>
<td>154 (84%)</td>
<td>317 (76%)</td>
<td>274 (75%)</td>
<td>1441 (80%)</td>
</tr>
<tr>
<td><strong>Preterm or SGA</strong>&lt;br&gt;59 (24%)</td>
<td>62 (23%)</td>
<td>69 (21%)</td>
<td>49 (27%)</td>
<td>114 (27%)</td>
<td>97 (27%)</td>
<td>450 (25%)</td>
</tr>
<tr>
<td><strong>Twins</strong>&lt;br&gt;5</td>
<td>11</td>
<td>4</td>
<td>6</td>
<td>18</td>
<td>12</td>
<td>56 (3%)</td>
</tr>
<tr>
<td><strong>Previous SUDI/IUD/NND</strong>&lt;br&gt;6</td>
<td>3</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>30 (2%)</td>
</tr>
<tr>
<td><strong>Vulnerable Unborn Group</strong>&lt;br&gt;7</td>
<td>28</td>
<td>30</td>
<td>10</td>
<td>30</td>
<td>61</td>
<td>166 (9%)</td>
</tr>
<tr>
<td><strong>Teen</strong>&lt;br&gt;48 (20%)</td>
<td>53 (20%)</td>
<td>62 (19%)</td>
<td>28 (15%)</td>
<td>45 (10%)</td>
<td>51 (14%)</td>
<td>287 (16%)</td>
</tr>
</tbody>
</table>

Table 3: Annual data for all BOPDHB showing distribution of Pēpi-Pods

Each quarter Stephanie Cowan, Director for Change for our Children, advises where the national priorities should be focused based on the analysis of statistics and from coroner’s reports. Throughout the past 24 months priority areas have been focusing on increasing breastfeeding rates, safe swaddling of pēpi/infants at the varying ages, the dangers of pillows in sleep spaces, and more recently the delivery of both universal and tailored safe pēpi/infant sleep messages.

Universal messages ensure that safe sleep messages are consistent, easily accessible, and culturally appropriate, for all pregnant women and their whānau/families. Tailored messages are aimed at our priority populations most at risk of experiencing a S.U.D.I. death, specifically, Māori and Pacific mothers, mothers under 25 years of age, and mothers who smoke.

For the first time since 2013, post-perinatal (1-52 weeks) mortality rates increased in 2017, and this increase was seen across all ethnicities. BOPDHB is currently working on their local S.U.D.I. Prevention Programme to align with both the Midland Regional and National S.U.D.I. Prevention Programmes. A National S.U.D.I. Prevention Programme was one of the recommendations by the Child and Youth Mortality Review Committee following a Special Report on investigations of S.U.D.I. deaths between 2002-2015. As part of the local programme, investment into the areas of additional staffing, more support for women to become smokefree, the addition of locally made wahakura to our safe pēpi/infant sleep programme, funding further wahakura wananga across the BOP region, and ongoing education and promotion to all maternity care providers. In particular ensuring education is provided for LMCs regarding the importance of early recognition of a S.U.D.I. vulnerable pēpi/infant and referral into the safe sleep programme.

The Midwife Coordinator Safe Sleep & Smoking Cessation covers SUDI prevention
work across the entire BOP region. New distributors have been trained and many existing distributors have received updated training to ensure that all whānau/families of identified S.U.D.I. vulnerable pēpi/infants receive current safe pēpi/infant sleep education. Pēpi-Pods are offered prior to discharge from maternity units. A number of LMCs working within the most vulnerable communities have also been trained to distribute Pēpi-Pods or have received updated training.

S.U.D.I. prevention education and Pēpi-Pod distributor training has been held at the Bethlehem Birthing Centre. Management of Bethlehem Birthing Centre noted that occasionally a S.U.D.I. vulnerable pēpi/infant was identified and therefore the whānau/family would need to be referred into the DHB programme. This required travel to the hospital to receive the 20-minute safety briefing and collect their Pēpi-Pod. This was seen as an exhausting experience for whānau/families and thus a barrier to access. Pēpi-Pods are now being distributed from the Bethlehem Birthing Centre will continue to be included within the DHB programme and the 6-8 week follow up with the whānau/family will be conducted by the DHB Midwife Coordinator Safe Sleep & Smoking Cessation.

A focus on wahakura

The wahakura is a woven pēpi/infant bed made from harakeke (flax). It originated as a kaupapa Māori response to the high rates of S.U.D.I. for Māori and the risks associated with co-sleeping and maternal smoking.

The wahakura is suitable for infants from birth to 6 months of age. It is rectangular in shape, and has an open weave so is naturally ventilated to allow airflow to regulate temperature around the pēpi/infant. It is handmade and not treated with any toxic chemicals or products. It is designed to protect the pēpi/infant by providing a safe sleeping space in or on shared beds, in make-shift beds, or away from home. The wahakura may prevent a co-sleeping adult lying over the pēpi/infant or accidental suffocation from loose bedding, pillows or soft toys. A recent study by Professor Ed Mitchell highlighted the safety of a family using a wahakura in comparison to a bassinette. An additional benefit of allowing mother and pēpi/infant to be close which supported a longer period of breastfeeding was highlighted in his research. The BOPDHB has been fortunate to have contracted a team of dedicated local weavers from across the region who are weaving wahakura for the Pēpi-Pod Programme. Whānau/families of S.U.D.I. vulnerable pēpi/infants can be offered wahakura as an option to sleep their pēpi/infants safely once at home. The wahakura is considered a taonga (treasured gift) that will not be available all year round due to the natural growth and flowering cycle of harakeke; therefore Pēpi-Pods will continue to be available. The wahakura set will include a mattress and linen set similar to the Pēpi-Pods. All whānau/families will receive safe sleep education that promotes the protective factors for the reduction of S.U.D.I. In addition information is provided on how to care for and maintain their wahakura.
Photographs 12: Wahakura presented to BOP pēpi/infants

Photograph 13: Muka tie and pounamu cutting blade and stone

4. MUKA TIES

A recent additional service being offered to women at the Bethlehem Birthing Centre Muka ties, which are an alternative to the cord clamp used to tie off the umbilical cord prior to it being cut. Muka ties are made from the extracted fibres from Harakeke which has antibacterial properties. Many anecdotal stories report cords drying and healing quicker. In addition to this is the blessed pounamu cutting blade and stone for an alternative traditional method of cutting the umbilical cord.
5. BREASTFEEDING

There have been several new breastfeeding initiatives in the BOPDHB area. The Bethlehem Birthing Centre hosts Milk Café, a Lactation support group, run on a weekly basis open to all mothers breastfeeding a pēpi/infant.

A community based lactation consultant role has been established, as part of the First 1000 Days project, providing the option of home visits to less mobile whanau/whānau/families. There is a plan to secure kaupapa Māori breastfeeding services across the region in late 2018.

Breastfednz App  [http://www.breastfednz.co.nz/]

BreastFedNZ is a smartphone application providing free information and support to breastfeeding mothers throughout Aotearoa New Zealand.

It was created three years ago, funded and managed by HealthShare for the 5 Midland DHB’s. The original idea was to support the BFHI within the DHB maternity units. The new generation of birthing women are digital natives who prefer health information to be via their phones.

Focus - to create a resource that is contemporary, relevant, accessible and easy to use.

Scope - to meet the needs of both universal and targeted groups, who may be less well-resourced to obtain information and support (younger women, Māori, and remote rural).

The content is written in conversational language, backed by cartoon-like graphics, photos, short video clips, personal stories (for peer support) and links to credentialed websites. It is divided into 6 main areas:

- Pregnancy and birth
- First few days
- Early weeks
- Older pēpi/infants
- Early pēpi/infants and multiples
- General information

The content has had a yearly review with changes made to keep up with new information. Shortly, we will be adding information on immunization, donor milk, and additional breastfeeding friendly spaces.

Uptake – over 20,400 downloads have occurred nationwide.

Potential – the app has the potential to be used more. For example:

- PDF versions for staff are in process to aid education on the ward.
- Use within the Well Child Service and Plunket line
- The “Early Pēpi/infants” chapter for neonatal units
- Screenshots for community midwives to share with clients
- Screenshots for specific topics on social media (e.g Breastfeeding NZ Facebook page)

Effectiveness – the app receives many positive reports and is being picked up by many areas within NZ.
6. ANTEnatal MANAGEMENT OF IRON DEFICIENCY ANAEMIA

Anaemia is one of the most common medical disorders found in pregnant women. Most cases are due to iron deficiency resulting from depleted iron stores and inadequate iron intake. Iron requirements increase significantly during pregnancy, due to the physiological expansion of the maternal, fetal, and placental circulation and resulting increase red cell mass. Women who start pregnancy with marginal or low iron stores are likely to experience further deterioration in their iron levels as pregnancy progresses unless addressed promptly.

A significant number of women in the BOP were reaching term with suboptimal iron stores. In some cases, this was due to low iron levels not being identified. For some women, it was an inconsistent approach to iron level management. Where a diagnosis was made and iron supplementation was prescribed, there was often minimal follow-up of the woman’s response to the supplementation. Investigation showed that some women were not taking the supplement or were taking it in a way that did not optimise absorption. Other women were experiencing intolerance to the supplement and were stopping treatment.

The Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines) recommend that primary care providers consult with the relevant services when a pregnant woman in their care has anaemia with a “Hb <90g/L, not responding to treatment”. On its own, this guidance is unclear as it does not provide key information such as; appropriate gestation for referral, identification of failed treatment.

For effective therapy to be instituted in a timely fashion there needs to be an early diagnosis of the condition, as well as timely recognition of when a chosen first-line therapy is inadequate.

To address this, BOPDHB developed a care pathway for antenatal management of Iron Deficiency Anaemia. This pathway aimed for early diagnosis and timely recognition of inadequate first-line therapy. Trials showed a positive response and the pathway has now been in place for some time. Local data shows a significant decrease in the number of women presenting, either in labour or for planned caesarean section, with low iron levels. As a result, we expect to see a reduction in the number of blood transfusions across the DHB. However, the pathway will not impact on transfusion rates for Post-Partum Haemorrhage.
Pregnancy ultrasound is a key tool in the provision of high-quality antenatal care. Women experiencing a high risk pregnancy frequently regular ultrasound, for issues such as fetal growth restriction (more common with heavy smoking), or where other clinical methods of monitoring fetal growth such as measuring fundal height, are unreliable (such as high BMI).

The Eastern BOP has some of the highest rates of smoking and obesity, yet, the area is undersupplied with antenatal ultrasound services in the community. Women are facing significant travel distances to access ultrasound services and are facing surcharges that are higher than those experienced in the Western BOP.

There has been ongoing work to identify barriers to care and improving access to antenatal ultrasound in this part of the region. Past investigations have identified that an existing demand was previously either not recognised or not met.

Work is ongoing in this area, progress is being made through the increase in service provision expected in the next few months.

Photograph 14: Mauao (Mt. Maunganui) aerial view
The New Zealand Maternity Clinical Indicators 2016 report presents data on maternity interventions and outcomes for pregnant women and their pēpi/infants. The BOPDHB MQSGG review this report which enables us to monitor the outcomes of care and services offered, track changes/improvements and compare our outcomes with other DHBs nationally.

The following section describes in detail the actions taken/planned to address the clinical indicators. A traffic light system is used to show where BOPDHB sits in relation to the national average, as explained below. Rather than view the DHB as a whole the decision has been made to look at each site’s data separately with an aim to better identify inequities of care masked by looking from a whole DHB perspective. The traffic light corresponding to each indicator will indicate the poorest values unless otherwise stated.

- **>5% from national average.** Prioritised ongoing effort required.
- **<5% but >1% from national average.** Ongoing effort required.
- **<1% from national average.** Work to continue
- **At or exceeding national average.** Monitor and maintain.
INDICATOR 1: REGISTRATION WITH LEAD MATERNITY CARER IN FIRST TRIMESTER OF PREGNANCY

Women registering with an LMC, within the first trimester of pregnancy, continues to increase nationally and locally from 2009 to 2016. BOPDHB is working to enable timely registration and identify/address barriers to registration for women. It is also looking into equity of access to maternity care particularly in the Eastern BOP where registration rates are more than 15% lower than those in the Western BOP.

INDICATOR 2: STANDARD PRIMIPARAE WHO HAVE A SPONTANEOUS VAGINAL BIRTH

BOPDHB’s rate of vaginal birth in 2016 was higher than the national average. However, there is a significant difference between the two sites. This is being monitored.
INDICATOR 3: STANDARD PRIMIPARAE WHO UNDERGO AN INSTRUMENTAL VAGINAL BIRTH

In 2016, fewer women in the BOPDHB underwent an instrumental vaginal birth compared to the national average. The rate of instrumental delivery at the Whakatāne site is more than 5% lower than the national average. However, the Tauranga rate is 4% higher than the national average and therefore significantly different to Whakatāne’s outcomes. This variation needs further investigation.

INDICATOR 4: STANDARD PRIMIPARAE WHO UNDERGO CAESAREAN SECTION

The MQSGG monitor this indicator, using local data, to evaluate whether caesarean sections were performed on the right women, for the right reason and at the right time.

In 2016, BOPDHB recorded lower rate of standard primiparae women underwent caesarean section than the national average. However, there is again significant variation across the two sites which is currently being audited to ensure a consistent level of care is being provided across both sites.
INDICATOR 5: STANDARD PRIMIPARAE WHO UNDERGO INDUCTION OF LABOUR

Induction of Labour (IOL) is associated with a risk of fetal distress, uterine hyper stimulation and postpartum haemorrhage. It can be the start of a cascade of further medical interventions (AIHW 2013).

In 2016, the BOPDHB’s standard primiparae women were reported to undergo a higher rate of IOL than the national average. There has been a significant increase in IOL rates in the BOPDHB area since 2010. The Tauranga site particularly has risen sharply above the national average since 2015. An audit is underway currently to identify the reasons for standard primiparae inductions and will be reported on in the next MQSP Annual Report.

INDICATOR 6: STANDARD PRIMIPARAE WITH AN INTACT LOWER GENITAL TRACT

In 2016, BOPDHB’s rate of women maintaining an intact lower genital tract post birth was higher than the national rate. Tauranga has consistently sat below the national average and sits in the bottom third of the country while Whakatāne is placed the third highest facility for this indicator nationally.
**INDICATOR 7: STANDARD PRIMIPARAE UNDERGOING EPISIOTOMY AND NO 3RD–4TH-DEGREE PERINEAL TEAR**

In 2016, BOPDHB had a significantly lower rate for this indicator than the national average. Although the rate of this clinical indicator has always been under the national average for the DHB there is again considerable variation between the two sites. The last two years (2015 and 16) has seen a rise of more than 10% in episiotomy rates in Tauranga which matches the rise in instrumental deliveries.

**INDICATOR 8: STANDARD PRIMIPARAE SUSTAINING A 3RD–4TH-DEGREE PERINEAL TEAR & NO EPISIOTOMY**

BOPDHB had a third/fourth degree tear without episiotomy rate equal to the national average in 2016. This was a return to the usual trajectory more in line with other years. Whakatāne’s rate in this area fluctuates considerably, likely due to the low numbers. In this case, the traffic light indicates the whole DHB to counteract the fluctuation.
INDICATOR 9: STANDARD PRIMIPARAE UNDERGOING EPISIOTOMY AND SUSTAINING A 3RD–4TH-DEGREE PERINEAL TEAR

Whakatāne recorded no incidents of this clinical indicator for 2016. The Tauranga rate however, has risen sharply since 2014. There is no explanation for how the Tauranga value and the DHB values are different as they are one and the same. Therefore the traffic light indicates the DHB value.

INDICATOR 10: GENERAL ANAESTHESIA FOR CAESAREAN SECTION

There has been significant work done by the BOPDHB anaesthetic departments to address the high rates of general anaesthetic for caesarean sections over the last two years. However, due to the delay in data reporting the official rate will not show the effect of this work against the national average for at least another year. Local data has shown a steady decrease.
INDICATOR 11: BLOOD TRANSFUSION AFTER CAESAREAN SECTION

In 2017, BOPDHB MQSGG instituted interventions that are focussed on improving the detection and management of Iron Deficiency Anaemia in the antenatal period (timely detection, prompt treatment, verification of treatment effect). The ultimate aim is to reduce the number of women who reach their delivery date with suboptimal iron levels. Following this, we have observed an associated decrease in the numbers of women requiring a blood transfusion after birth. We are therefore expecting to see a decrease in the BOPDHB’s rate for this indicator and indicator 12 in the 2018 report.

INDICATOR 12: BLOOD TRANSFUSION AFTER VAGINAL BIRTH

As discussed for indicator 11 there has been work done in this area that should be seen in the 2018 data.

INDICATOR 13: DIAGNOSIS OF ECLAMPSIA AT BIRTH ADMISSION

BOPDHB had no cases for this clinical indicator.
INDICATOR 14: WOMEN HAVING A PERIPARTUM HYSTERECTOMY
BOPDHB had no cases for this clinical indicator.

INDICATOR 15: WOMEN ADMITTED TO ICU AND REQUIRING VENTILATION DURING THE PREGNANCY OR POSTNATAL PERIOD
BOPDHB had no cases for this clinical indicator.

INDICATOR 16: MATERNAL TOBACCO USE DURING POSTNATAL PERIOD

Reduction in the rates of tobacco use at two weeks postnatally is one of the priority work streams for the BOPDHB MQSGG. The 2016 data shows an increase in this indicator for the Whakatāne area which is the higher priority group for this work stream. Local data shows a steady decrease for the whole DHB which mirrors that of the national average. Work is ongoing as can be seen by the community involvement of the local Midwife Coordinator of Smoke Cessation reported above in the Quality Improvement section of this report.
INDICATOR 17: PRETERM BIRTH

Preterm birth is a significant contributor to perinatal mortality and neonatal morbidity, especially for pēpi/infants born under 32 weeks’ gestation. Preterm birth is among the top causes of death in pēpi/infants worldwide (WHO 2013).

2016 saw the incidence of preterm birth in BOPDHB rise above the national average for the first time since 2010. This is an area that needs closer attention to identify the contributing factors and measures needed to reduce the rate. A review of the pēpi/infants born under 32 weeks gestation is planned for 2019 and will look at the administration of steroids and ethnicity, among other things, to measure the equity of care being provided to the women in the area, as per the PMMRC recommendations 2018.

To address the apparent higher rate of preterm births at Whakatāne Hospital, we have developed and are implemented the following protocols:

i. Prevention of spontaneous preterm births: a care pathway that includes a risk assessment checklist for use in screening of pregnancies, as well as management recommendations for those at risk.

ii. Prevention of iatrogenic preterm births: A structured decision aid to be followed when considering delivery of a pēpi/infant prematurely (ensuring appropriateness of iatrogenic preterm birth).

iii. The timing of births checklist: guidance on ideal delivery windows for specific clinical conditions.

The impact of these protocols is scheduled for audit in 2019.
INDICATOR 18: SMALL BABIES AT TERM (37-42 WEEKS GESTATION)

The rate of pēpi/infants born at 37-42 weeks gestation under the 10th centile for their gestation in 2016 matched the national average. This is a reduction from the year before. The rate of this indicator continues to decline for BOPDHB since 2009. Whakatāne continues to have a higher rate which attributed in part to the difference in rates of women smoking during pregnancy. This shows an ongoing inequity of care. Work is underway to address this inequity through improving access to ultrasound services and work being done by the First 1000 Days project, along with the ongoing work by Smoke Cessation Services.

INDICATOR 19: SMALL BABIES AT TERM (40-42 WEEKS GESTATION)

BOPDHB’s rate of pēpi/infants born at 40-42 weeks gestation under the 10th centile for their gestation was higher than the national average in 2016. This indicator has been rising since 2013 and work has been done to develop a consistent process for identifying at-risk pēpi/infants and delivering earlier, if indicated, to achieve a lower mortality and morbidity rate.

These are missed SGA pēpi/infants, and should thus be regarded as 'Near Misses'. Had they been detected antenatally, they would have been delivered. The misses result from
several factors including, the inherent difficulty in achieving an accurate estimation of fetal size in obese women using a tape measure, and perhaps more importantly, poor access to antenatal ultrasound (in Whakatāne) that would otherwise compensate for the deficiency when using the tape measure.

In 2016, BOPDHB MQSGG began putting some interventions in place to address this.

i. High BMI: A protocol, the 'Management of Pregnancy in Obese Women', was developed and introduced at Whakatāne. In order to standardise care further, a midwifery-led High BMI Antenatal Clinic was introduced in 2017. An audit of the outcome of this change is planned for later this year.

ii. Detection of SGA pēpi/infants: A targeted protocol that includes a risk assessment checklist was developed and has been used at Whakatāne since 2017. This has improved the identification of those women who should have increased ultrasound surveillance (growth scans). This has led to a justified increase in demand for an ultrasound and has helped challenge the service providers to increase access.

**SUMMARY**

Throughout this report areas of identified and ongoing quality improvement work have been highlighted. These areas are tabled below for ease of reference along with the BOPDHB MQSP Work Plan for 2018/20. Progress in these areas will form the basis of the 2019 MQSP Annual Report.
## MQSP Work Plan 2018/20

<table>
<thead>
<tr>
<th>Project</th>
<th>Rationale</th>
<th>Main phases of work</th>
<th>Deliverables</th>
<th>Status</th>
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<tbody>
<tr>
<td><strong>Local:</strong></td>
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| Maternity notes/care plans  | - Current notes are confusing and open to misinformation due to layout.  
- Care plans not well designed and poorly used allowing potential risk to patient.  
- Immediate need for adjustment of documentation system to fulfil continuity of care function for women without an LMC utilising DHB service “of last resort” | - Review current documentation  
- Stakeholder consultation  
- Implementation | - User friendly, clear and easy to use notes  
- Directive care pathways for increased consistency  
- Multidisciplinary planning/involvement at all points | Scheduled to start late 2018.                                                      |
| **National:**                |                                                                                                                                                                                                           |                                                                                    |                                                                                                                                               |                      |
| Sustainable Workforce.       |                                                                                                                                                                                                           |                                                                                    |                                                                                                                                               |                      |
| Secondary Care Midwifery Team| - Increasingly women are unable to access LMC care due to shortage LMC/midwife nationally.  
- Relieve pressure on LMC’s to provide low risk women with primary care option.  
- Current secondary care provided to high risk women needs to be more equitable. | - Development of primary maternity care service for women with no LMC  
- Development of secondary care case loading team | - All women able to access midwifery care in first trimester.  
- Low risk women accessing primary care.  
- LMC’s choosing not to provide secondary care refer and handover care to secondary care team.  
- All women identified with high risk pregnancies receive consistent care. | Ongoing  
- Women without LMC currently being cared for by DHB. |
<table>
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| National: Choice, Equity and Access.        | The first 1000 days of a child’s life have been identified as the most crucial to brain development. | - Establishment of kaupapa Maori, community based lactation consultancy and breastfeeding support service | - Breastfeeding rates (Maori/non Maori), at discharge, 6 weeks, 3 months, 6 months, to increase amongst target population  
- Coordination and integration of community and hospital breastfeeding services  
- Increased availability of specialist breastfeeding consultation and supervision  
- Increased availability of support to breastfeeding whanau/families  
- Increased focus on Kaupapa Maori antenatal breastfeeding education that are accessible and culturally relevant  
- Increase LMC services to vulnerable and teenage pregnant women  
- Reducing risk associated with fragmented care for target group  
- Clear, accurate and timely communication of service needs for individuals | Ongoing             |
| First 1000 days                             | By tailoring a service that aims at promoting the importance of this development we can improve the health and development of our future population. | - Vulnerable and teenage mother LMC services  
- LMC to WCTO provider handover |                                                                                         |                                                                                                           |                     |
|                                             |                                                                          |                                                                                      |                                                                                                         |                     |

A trial of community based Lactation Consultant service with home visit ability has increased the breastfeeding rates in trial area. Integrated breastfeeding service to extend to the full Bay of Plenty mid-2019.
### MQSP Quality Improvement Plan 2018-19

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<tr>
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<th>Deliverables</th>
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<tbody>
<tr>
<td><strong>Maternal Mental Health</strong></td>
<td>• Awareness of primary mental health services poor&lt;br&gt;• Secondary level maternal mental health service overloaded</td>
<td>• Increased engagement with primary mental health services&lt;br&gt;• Appropriate referrals to maternal mental health&lt;br&gt;• Work with Regional Māori Health to identify equity issues in this area.</td>
<td>• Evaluate current pathways, their use and effectiveness.&lt;br&gt;• Raise awareness of primary mental health services available for pregnant and postnatal women&lt;br&gt;• Monitor access and appropriateness of referrals</td>
<td>Ongoing&lt;br&gt;• Development of maternal mental health self-assessment tool underway.&lt;br&gt;• Working to raise awareness of primary services for LMC community.</td>
</tr>
<tr>
<td><strong>Clinical Indicators data Reporting</strong></td>
<td>• Current two year delay in accessing data makes assessing outcomes of interventions slow.</td>
<td>• Work with relevant departments to identify data needs&lt;br&gt;• Develop regular reporting system.</td>
<td>• Monthly report on clinical indicators&lt;br&gt;• Increased progress with tests of change</td>
<td>Ongoing&lt;br&gt;Database is being created for monthly reports of clinical indicators.</td>
</tr>
<tr>
<td><strong>Equity of Access to Ultrasound Services</strong></td>
<td>• Eastern BOP has significantly less access to ultrasound services than the Western BOP&lt;br&gt;• High surcharges discourage women from accessing ultrasounds&lt;br&gt;• Women with high risk pregnancies not being identified early enough</td>
<td>• Increase access to ultrasound services in the Western BOP&lt;br&gt;• Evaluate options with regard to minimising impact of surcharge</td>
<td>• Increased availability of ultrasound appointments&lt;br&gt;• Reduced unidentified IUGR/SGA babies</td>
<td>Ongoing&lt;br&gt;A second ultrasound machine has been installed.</td>
</tr>
<tr>
<td><strong>Consumer Feedback</strong></td>
<td>• MQSP are required to run the Maternity Service National Tool every 5 years</td>
<td>• Run Maternity Service National Tool 2019</td>
<td>• Minimum of 100 responses collected</td>
<td>Scheduled for 2019</td>
</tr>
<tr>
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<tr>
<td>Local Support Service Directory</td>
<td>• LMC community not aware of all local support services available</td>
<td>• Create Directory of Maternity Relevant Support Services</td>
<td>• Increased awareness of services available and referral processes</td>
<td>Scheduled for 2019</td>
</tr>
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<td></td>
<td>• Women not receiving all the support available</td>
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<td>• Increased referrals to appropriate support services</td>
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<tr>
<td>Equity of LMC access</td>
<td>• Eastern BOP has LMC registration rates at 12 weeks as 15% lower than Western BOP</td>
<td>• Identify barriers/enables to accessing LMC services</td>
<td>• Increased access to LMC services in Western BOP by 12 weeks</td>
<td>Scheduled for 2019</td>
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<tr>
<td>Variation in Vaginal Birth Rate Across Region</td>
<td>• There is a 20% lower vaginal birth rate at Tauranga compared to Whakatāne</td>
<td>• Audit delivery outcomes across both sites and identify any variances in practice</td>
<td>• Increase in the rate of vaginal births in Tauranga</td>
<td>Scheduled for 2019</td>
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<tr>
<td>Variation in Instrumental Delivery Rate Across Region</td>
<td>• Whakatāne has 10% less instrumental deliveries than Tauranga</td>
<td>• Audit delivery outcomes across both sites and identify any variances in practice</td>
<td>• Reduced variance across the BOPDHB</td>
<td>Scheduled for 2019</td>
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<tr>
<td>Variation in Caesarean Section Rate Across Region</td>
<td>• There is a 15% variance in caesarean section rates on standard primiparae across the BOPDHB</td>
<td>• Audit rationale for caesarean sections on standard primiparae across both sites and identify any variances in practice</td>
<td>• Reduced variance across the BOPDHB</td>
<td>Ongoing</td>
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<tr>
<td>Variation in Induction of Labour Rate Across Region</td>
<td>• Tauranga sits over 3% above the National Average for this indicator</td>
<td>• Audit rationale for Inductions of Labour on standard primiparae across both sites and identify any variances in practice</td>
<td>• Reduced variation in rate of IOL in BOPDHB</td>
<td>Ongoing</td>
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<tr>
<td></td>
<td>• There is significant variance between Tauranga and Whakatāne sites</td>
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<td>• Reduced rate of IOL at Tauranga</td>
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<td>Preterm Birth</td>
<td>• BOPDHB was above the National Average in 2016 for babies born under 32 weeks gestation.</td>
<td>• Audit all preterm births and identify areas for improvement</td>
<td>• Reduction in the number of babies born at less than 32 weeks gestation</td>
<td>Ongoing</td>
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<tr>
<td></td>
<td></td>
<td>• Review timeliness of steroid administration and consistence of care with equity focus</td>
<td>• Increased consistency of care delivery</td>
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