NORTHLAND DISTRICT HEALTH BOARD
Te Poari Hauora Ā Rohe O Te Tai Tokerau

2019 Maternity Quality and Safety Annual Report

NORTHLAND DISTRICT HEALTH BOARD
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Abbreviations

ACMM	Associate Clinical Midwife Manager
ADOM	Associate Director of Midwifery
CTG	Cardiotocograph
DHB	District Health Board
ED	Emergency Department
EWS	Early Warning System
FTE	Full time equivalent
GAP	Growth Assessment Programme
GDM	Gestational Diabetes Mellitus
GP	General Practitioner
HCA	Health Care Assistant
IMAC	Immunisation Advisory centre
IUGR	Intrauterine growth restriction
LARC	Long acting reversible contraception
LMC	Lead Maternity Care(r)
LUSCS	Lower uterine segment caesarean section
MERAS	Midwifery Employee Representation & Advisory Service
MESR	Midwifery Emergency Skills Refresher
MEWS	Maternity Early Warning System
MDT	Multi-disciplinary team
M&M	Mortality & Morbidity
MQSP	Maternity Quality Safety Programme
NICU	Neonatal Intensive Care Unit
NDHB	Northland District Health Board
NZCYES	New Zealand Child and Youth Epidemiology Service
NZDep	New Zealand Deprivation
PACU	Post Anaesthesia Care Unit
PPH	Postpartum haemorrhage
PPS	Pregnancy and Parenting Service
REC	Reportable Events Committee
SAC	Severity Assessment Code
SANDS	Stillbirth and Neonatal Death Support
SCBU	Special Care Baby Unit
SUDI	Sudden Unexpected Death in Infants
TPO	Te Puawai Ora
WCTO	Well Child / Tamariki Ora

General Manager, Child Youth Maternal Oral & Public Health Services & Acting Associate Director Midwifery and Service Manager – Maternity Services

We have pleasure in presenting the 2019 MQSP Annual Report on behalf of Northland District Health Board.

We take satisfaction in the progress that has been made in some of our outcomes, as outlined in this report. Meanwhile, we continue to focus on those areas where Northland is an outlier in comparison with other DHBs, not least of all, our perinatal mortality rate. While the number of births has remained stable over the past two years in Northland, we are acutely aware of the apparent increasing complexities in our birthing population. This is placing additional demands on our maternity workforce throughout the region. Underlying our challenges is the significant proportion of our population residing in high levels of deprivation. This poses issues of access which is accentuated by remoteness. In order to overcome this significant barrier that women and their Whānau face, the DHB acknowledges the community midwifery workforce who provides services in or close to homes.

Our Te Tai Tokerau strengths lie in the cultural richness of our region; the interdisciplinary collegial support for which Northland is renowned; the overt commitment demonstrated by all clinicians; robust case review processes and a sound education programme. These are further strengthened by the support the maternity service receives from other areas within the DHB such as Paediatrics, Māori Health and Mental Health. We acknowledge the commitment of our CEO towards equity, as demonstrated by enabling the attendance of all staff to Engaging with Māori education opportunities.

Additionally, aspects of our maternity service have been enhanced, some of which relate directly to community feedback. We are optimistic about the potential of the Nga Tatai Ihorangi initiative in encompassing key work addressing the needs of Māori women and babies, in particular in relation to our child health programme in Northland DHB. The hapu wananga antenatal education classes, Nga Wānanga o Hine Kōpū, now established throughout Te Tai Tokerau, are receiving incredibly favourable reviews from participants. The next major initiative within Te Kotuku in Whangarei will be work towards the establishment of a transitional care unit. While construction of the physical environment takes place, there will be a simultaneous project developing the model of care required for these mothers and babies with higher needs in order that we be ready when this approach is confirmed nationally.

We want to take this opportunity to honour the women who have given birth in Northland over the past year and to wish their babies a healthy future in Te Tai Tokerau. We also acknowledge the sorrow endured by some Whānau who sadly have experienced the loss of their babies. The DHB is committed to continually improving our maternity service for the people of our region and in doing that, we want to pay respect to all professionals working in all maternity settings throughout the region who contribute to this endeavour.

Jeanette Wedding
General Manager, Child Youth Maternal Oral & Public Health Services

Sue Bree
Acting Associate Director Midwifery & Service Manager – Maternity Services

Northland DHB Vision and Mission

Northland DHB's vision is 'A Healthier Northland'. The mission is to work in partnership under the Treaty of Waitangi with the Northland population to improve population health, reduce inequity and improve the experience of all patients.

Mahi tahi te kaupapa o Te Tiriti o Waitangi he whakarapopoto nga whakaaro o te Whare Tapa Wha me te whakatuturutahi i te tino rangatiratanga te iwi whanui o Te Tai Tokerau.

Northland Context – an overview

In recent years, Northland has seen a substantial population growth, being one of the top three growth regions in the country alongside Auckland and Waikato.

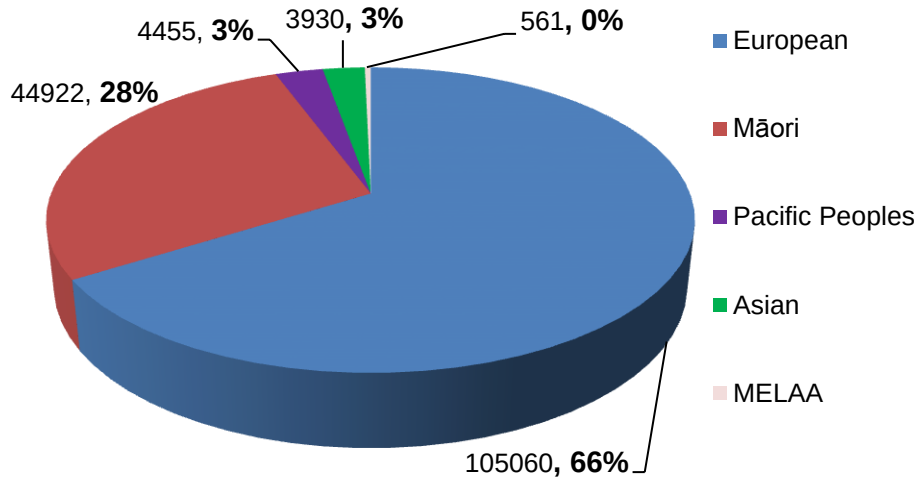
Northland recorded a 2.3 percent growth in the year 2016-2017 and a 2.1 percent growth in 2017-2018, with Kaipara district having a 3.1 percent increase in population. Population projection for the Kaipara district by ethnicity demonstrates a slight increase in Asian population.

Migration and an the number of births were the key contributors for the population growth in Northland. *(Statistics New Zealand, 2017; Statistics New Zealand, 2018).*

Population estimate, 2018	Regional Growth	National Growth
179,100 Resident Population	2.1 % Northland Region	1.9% New Zealand

(Statistics New Zealand, 2013)

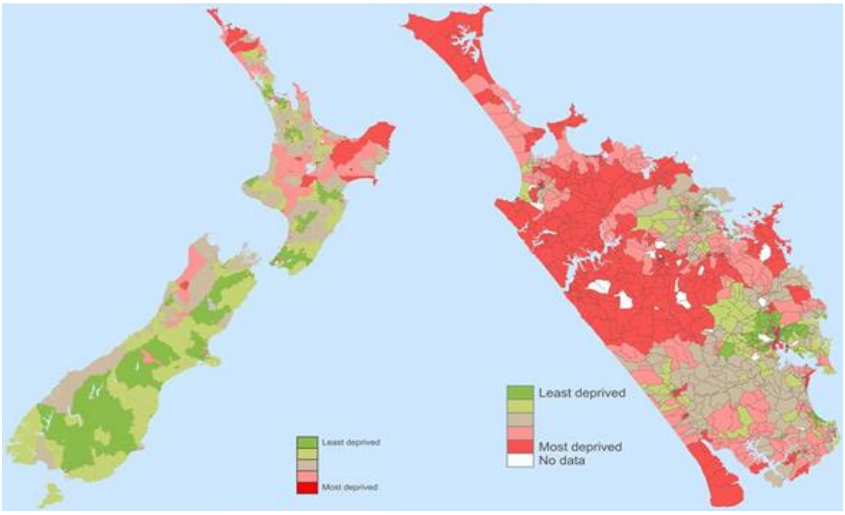
Ethnicity within Northland



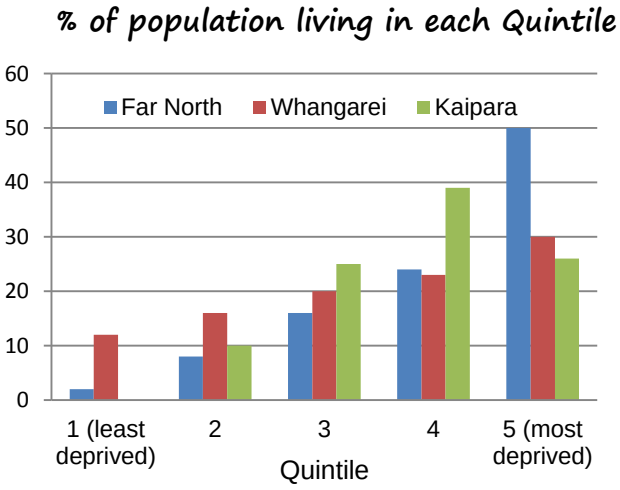
Northland population (Census 2013) by ethnicity

1134 (29%) identified themselves as being of Indian ethnicity out of the 3930 Asian population in 2013 Census.

Deprivation



Northland has a very high level of deprivation compared to the rest of New Zealand. Over 70 percent of the total population live in areas with higher NZDep 2013 scores.



Percentage of the population living in each socioeconomic deprivation (NZDep) quintile, by territorial authority, 2013.

The Mid and Far North areas are the most deprived in Northland. Northland has a very high proportion of people in the most deprived section of the population while the least deprived section is under-represented.

NZDep2013 Index of deprivation - Northland.

Rurality

Rurality and deprivation impact on the ability of women to attain timely access to services. This places increased reliance on maternity services being provided by community midwives in women's homes and for the necessity of specialist clinics to be taken to district hospitals.

Whangarei is the only main urban area in Northland and about one-third of the region's population live in Whangarei district.

The rural centres are Kaitaia, Kerikeri, Kaikohe and Dargaville with populations of about 5,000 each.

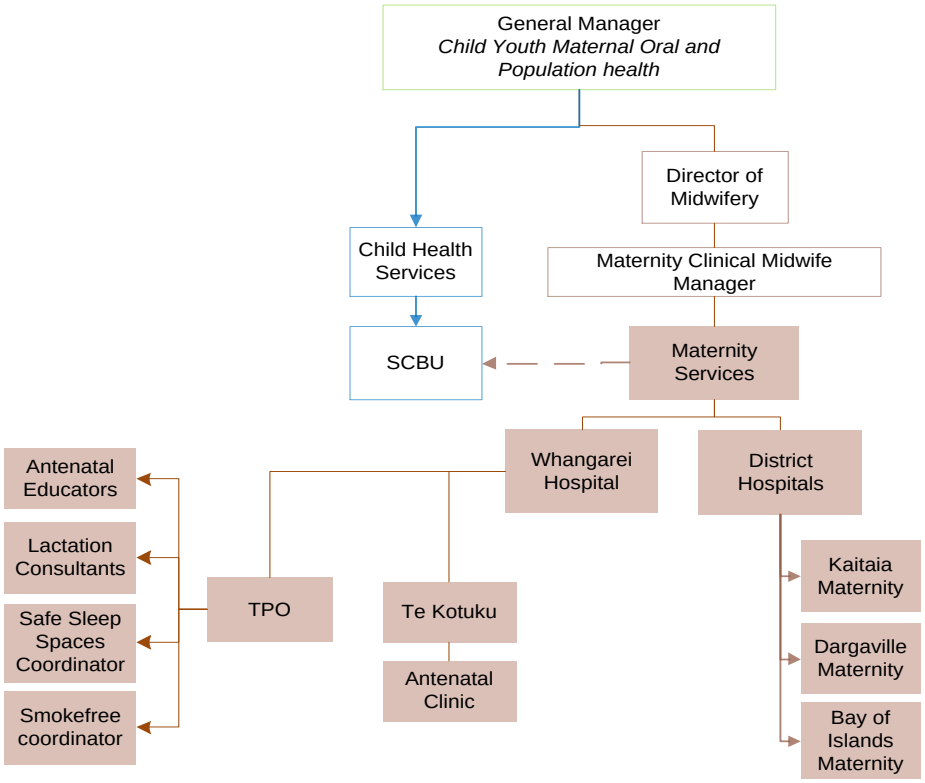
Northland DHB's maternity service alignment

Northland DHB maternity service sits within a wider service encompassing child and youth health, public health, dental and district hospital services which enables better opportunity to collaborate across the maternal and child health spectrum and throughout the region, including a focus on primary health.

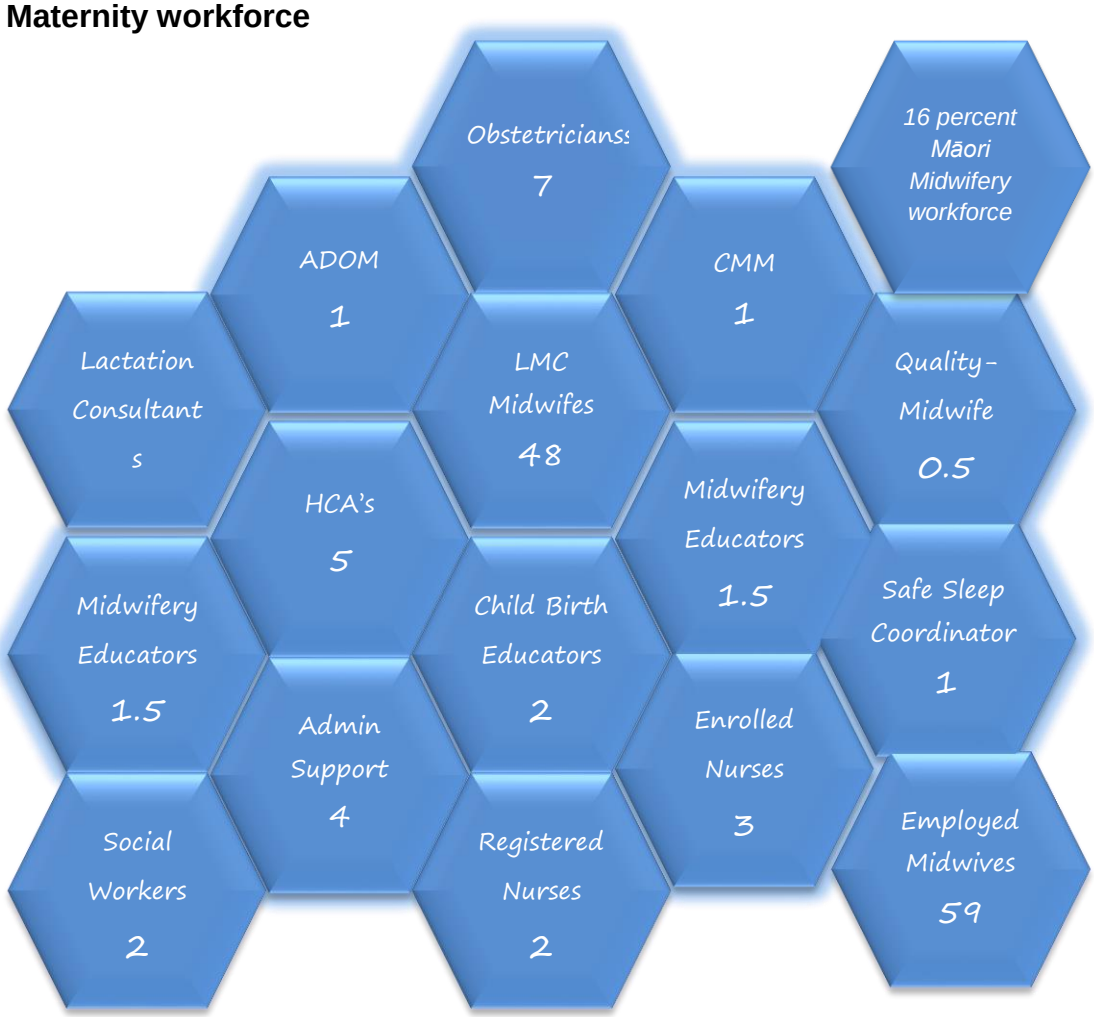
Strategic and work plans for midwifery workforce, maternity services and all other services under this umbrella are coordinated to ensure service coverage, collaboration and integration across the service. The service plans are incorporated within DHB wide service plans.

The Midwifery Director and Service Manager- Maternity Services attends the alliance clinical governance, DHB hospital operational management and DHB clinical governance groups; is a member of the DHB reportable events committee, as well as chairing the maternity clinical governance group and LMC and staff fora to ensure we have collaboration across the services and throughout the region.

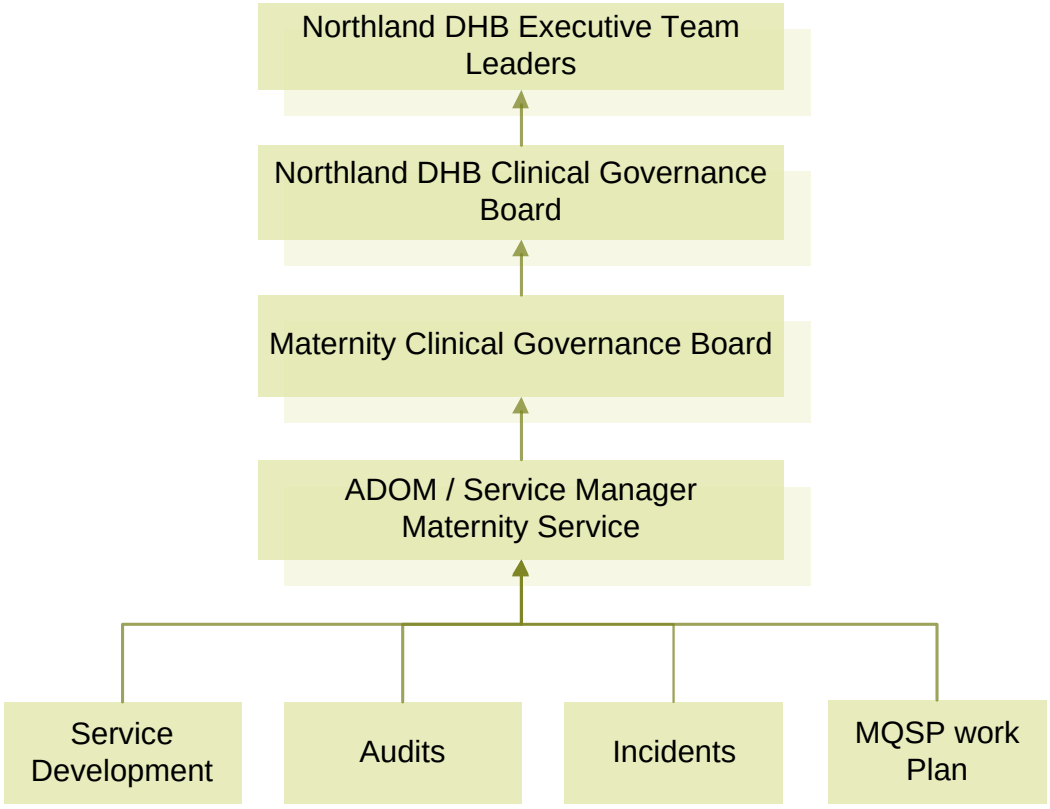
Child Youth Maternal Oral, Population Health and District Hospitals



Maternity workforce



Maternity Governance



Maternity Quality and Safety Programme Purpose

The purpose of the Maternity Quality and Safety Programme in Northland is to review and improve the quality and safety of maternity services as experienced by women, babies and their whānau in Northland. To be successful, leadership supports and enables a collaborative multidisciplinary team approach to service provision, including the voice of consumers at all levels of service planning and review.

Governance of MQSP is by the maternity governance group which is chaired by the Associate Director of Midwifery/ Maternity Service Manager. Meetings are held bi-monthly. Membership includes: obstetricians, midwifery leadership, core and LMC midwives, Māori midwife, MQSP leader, consumers, NZCOM regional chair, GP liaison, paediatrician and representative of the Māori Health Directorate. Others attend on invitation for specific agenda items.

Northland DHB's Alignment with the New Zealand Maternity Standards

The DHB funded Tier One Service Specifications require all DHBs to comply with the New Zealand Maternity Standards. Northland DHB meets all requirements within the National Maternity Services Service Standards and Service Specifications.

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

All practitioners providing maternity care, including LMC midwives working in the community, are invited to attend multidisciplinary meetings/case reviews which are held weekly – monthly. Key findings from such meetings, including DHB reportable events processes, are reported back at M&M meetings, the minutes of which are distributed to all maternity practitioners in Northland as well as to the maternity governance committee and the DHB clinical governance board.

The DHB hypertension guideline has been reviewed to incorporate the national guideline Diagnosis and treatment of hypertension and pre-eclampsia in pregnancy in New Zealand: A clinical practice guideline.

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

Information about maternity services in Northland is on the DHB website. The vast majority of women in Northland receive care by a midwife LMC. The DHB supports access to LMC midwives by the provision of an 0800 telephone number at the community hub in Whangarei and primary units. Updated lists of local midwives are provided to GP practices.

A recent survey demonstrated that 88 percent of women were satisfied that their cultural needs were met. Kaupapa Māori antenatal wananga and general antenatal education is provided region-wide.

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

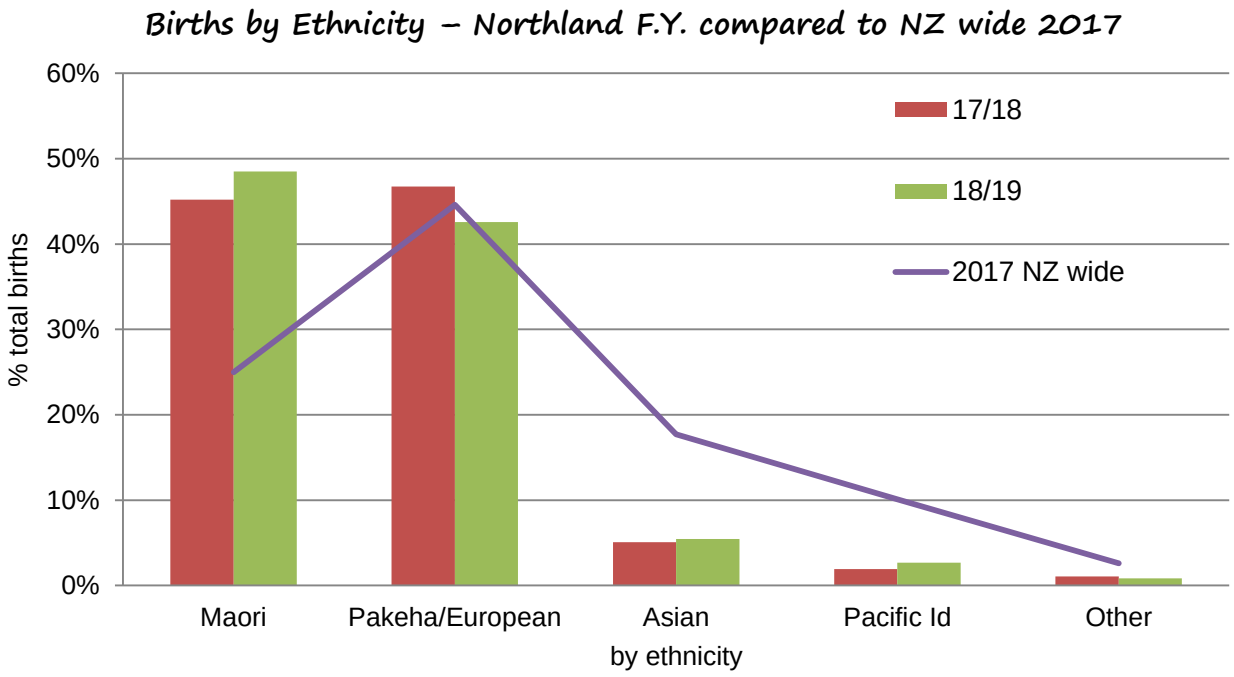
Northland maternity service provision is guided by national documents available on https://www.health.govt.nz:

- The New Zealand Maternity Standards
- The National Maternity Monitoring Group
- Perinatal & Maternal Mortality Review Committee
- New Zealand Maternity Quality Indicators
- Report on Maternity
- Multidisciplinary audit of outcomes and transfer/emergency processes occur

Ethnicity of Women Giving Birth in Northland

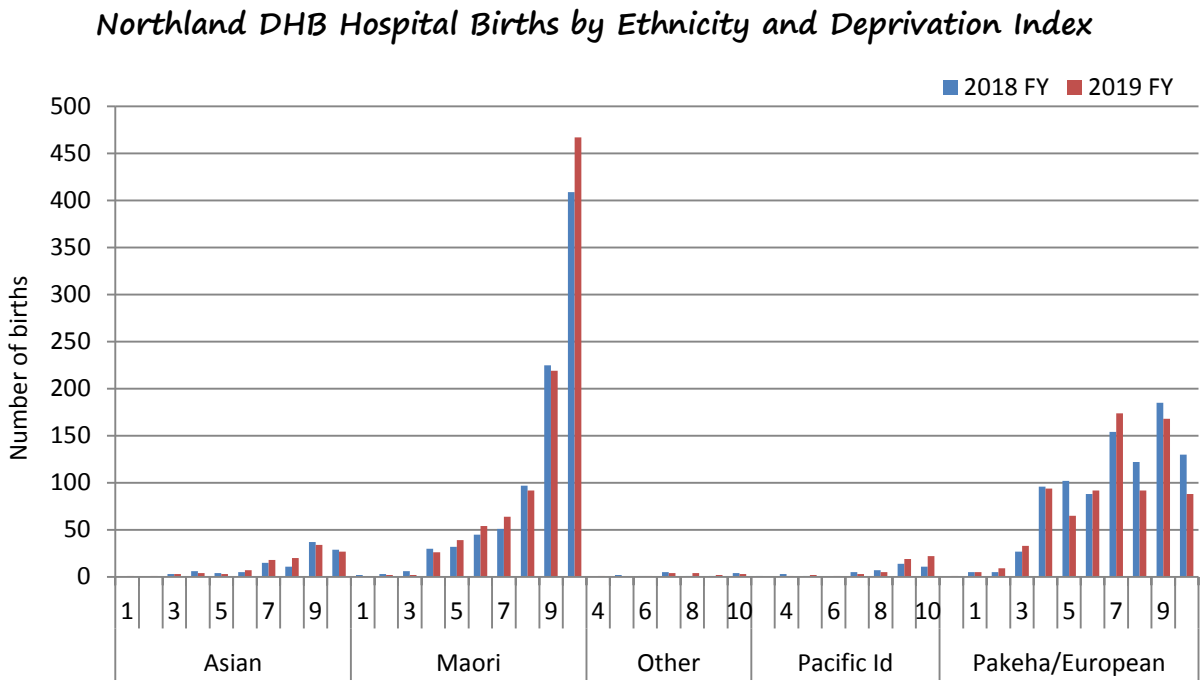
In Northland, while Māori comprise close to 30 percent of the population,48 percent of births were to Māori women in the 2018/19 fiscal year.

There is a significantly lower number of Asian and Pacific Island women giving birth in Northland with Indian women specifically 2.89 percent in 2018/19 FY. Indian woman are currently included in the Asian cohort. Northland data in the future will identify Indian women as a discrete ethnicity.

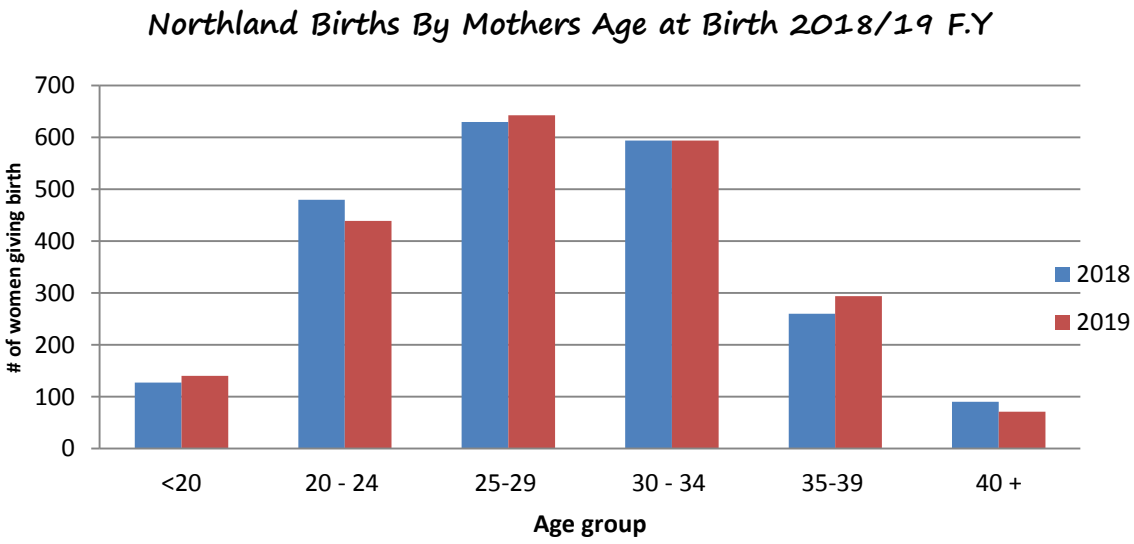


	Northland		*New Zealand
Reporting period	**2017/18 FY**	**2018/19 FY**	**2017**
Pakeha/European	47%	43%	45%
Māori	45%	48%	25%
Asian	5%	5%	18%
Pacific Id	2%	3%	10%
Other	1%	1%	3%

* *Report on Maternity (2017)*



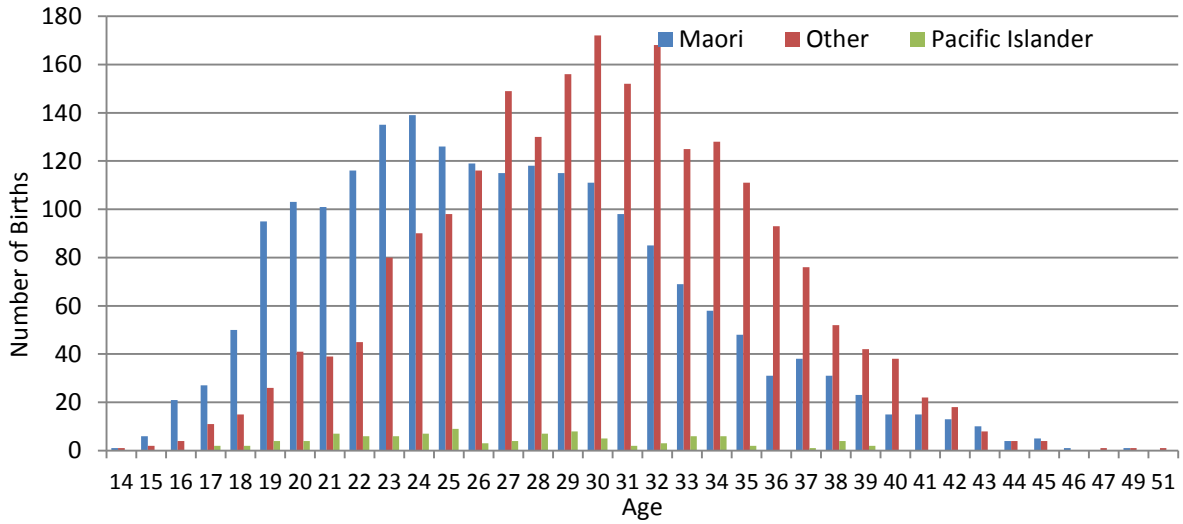
Maternal Age Distribution – Women Giving Birth in Northland



This portrayal of age of women giving birth over the past two years does not support the steady trend in reduction of births to women under 18 years of age as indicated last year. Overall however there is an increased number of women giving birth in 35 – 39 age group.

This graph comparing age at time of birth and ethnicity clearly indicates Māori women giving birth younger with peak numbers at age 24 compared to other ethnicities.

Northland Births By Mothers Age at Birth & Ethnicity 2018 /2019 F.Y



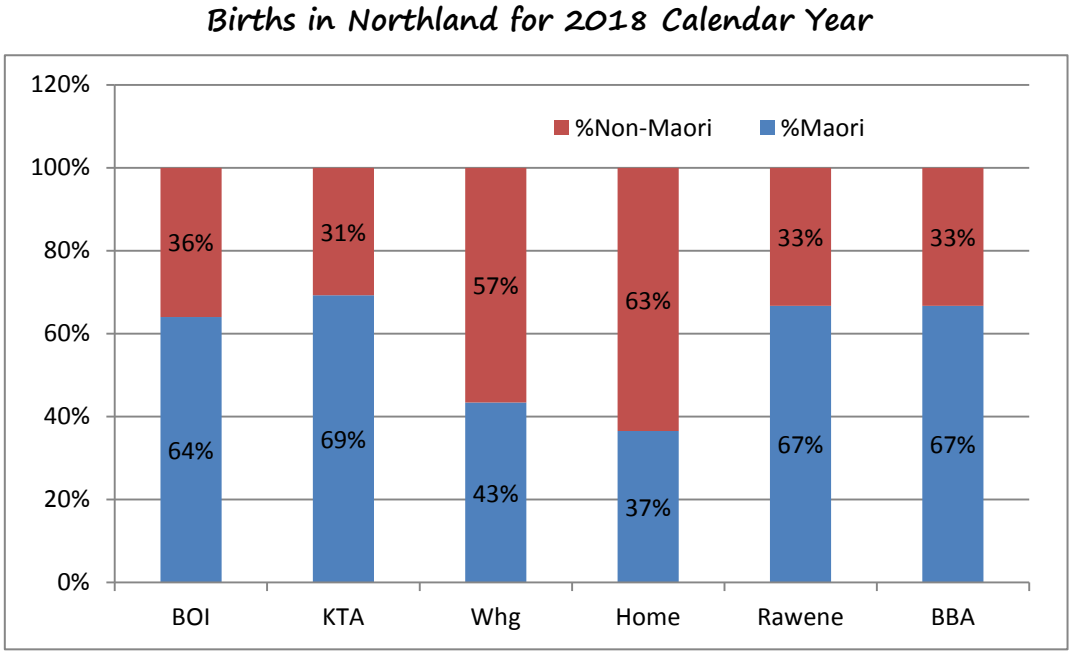
Place of Birth

Some Northland women experiencing low risk pregnancies have a choice of giving birth in three primary units (Kaitaia, Bay of Islands and Rawene). Women with low risk pregnancies who live in Whangarei or the Kaipara district give birth in Te Kotuku, Whangarei Hospital, and this contributes to the high percentage of births occurring in the secondary facility. 17 percent of births in Northland were in the primary units in 2017. The table below illustrates Northland births for 2019 FY, compared with New Zealand births in 2017.

Percentage of women giving birth, by place of birth, 2017 vs Northland

Place of birth	*NZ percentage 2017	Northland percentage 2019 FY
Home	3.4	8
Maternity facility	96.6	
Primary	10.0	16.6
Secondary	41.1	75
Tertiary	45.6	-
Born before arrival	–	0.4
Total	**100**	**100**

Report on Maternity (2017)



Source: National Maternity Collection – Report

Northland has a relatively high homebirth rate and this appears to be steady.

Northland's primary units, Bay of Islands (BOI), Kaitaia (KTA) and Rawene, are well utilised by Māori women as a place to give birth as demonstrated in the graph above.

Maternity services in Northland

The midwifery workforce throughout Northland, whether employed by the DHB or self-employed, is regarded as one. Both are interdependent and a fluctuation in workforce capacity of either directly impacts the other. Currently there is a need for increased numbers of LMC midwives in the Whangarei and Kaitaia communities and subsequently, the DHB is providing a service of last resort to an increased number of women in these areas. The local branch of the NZ College of Midwives and the DHB has jointly advertised with an aim to address this imbalance.

Although birth numbers in Northland have been stable over the past few years, increasing complexities are apparent. There is therefore a requirement for additional input by obstetricians into managing care which has placed increased demands on the specialist service. An additional obstetrician has been employed to help ameliorate this situation.

The maternity service in Northland is noted for collaboration amongst all providers in all settings, including those in the paediatric service. This relates not only to the provision of care to women and babies, but also in the evaluation of outcomes.

Primary maternity care is generally based in clinics, the women's homes or at one of Northland's four primary facilities in Kaitaia (Far North), Kawakawa (Bay of Islands), Rawene (Hokianga) and Dargaville (Kaipara). While consultant antenatal clinics regularly take place throughout the region, all secondary labour and birth care occurs in Whangarei Hospital at Te Kotuku which also serves as the primary birthing facility for Whangarei and Kaipara women.

A consumer's perspective of being on the Governance Committee

I have been on the Maternity Governance Committee for 2-3 years now. The first meeting I attended, I came out feeling like I had been in a washing machine. There were acronyms galore, even one for moving furniture. Over the first year, with the support and guidance from the Committee, I soon became more comfortable and able to contribute in the meetings. I connect with many families in our community and for 20 years have been supporting families who have had a new baby with Down syndrome. I feel it is important to have consumer involvement as a consumer can bring a different perspective through our own or others experiences. I found the Committee members to be warm, welcoming and with a common goal of aiming towards delivering a high standard of maternity care in Northland.

Kathryn

Te Kotuku

Whangarei is fortunate to have an outstanding team of midwives, nurses , HCA's, clerical staff, social workers and lactation consultants who work to do their very best alongside medical colleagues and self-employed community midwives, to provide a very high standard of care to women, babies and whānau.

Last year Whangarei Hospital welcomed two new graduate midwives from the Auckland University of Technology Northland satellite programme. Opportunities within the DHB will also be available for future graduates as well as for midwives returning to practice. New staff are recruited as vacancies arise and part time no fixed hour's contracts are made available for midwives. Clinical midwifery leadership positions are currently rostered over seven days and five nights each week however there is commitment to implement the MERAS recommendation that staffing is at the same level 24hrs for seven days and nights.

The feedback about the unit and care received by women and Whānau using our service is generally very positive and the ability for a partner or relative to stay 24hrs a day to assist women is valued.

The Te Kotuku facility, including antenatal and ultrasound clinics, is well utilised. The 18 bed capacity of Te Kotuku is barely adequate at times, but overall utilisation in Te Kotuku is around 63-65 percent.The use of the primary units for women expecting normal birth is promoted as well as for postnatal care for those women who are advised to birth in the secondary facility in Whangarei.

The dedicated *'butterfly room'* for Whānau experiencing a baby loss is a place of quiet calmness in the busy facility. There is an ongoing partnership with the local SANDS group who supply baskets and 'memory boxes' for all women as well as ongoing emotional support. Women experiencing a baby loss after 20 weeks gestation, who might have gone to a gynaecology ward in the past, are now being offered the use of the room. Care during the labour and birth may be given by the woman's community midwife and/or the core midwifery staff.

Quality process and reviews, including case review and responding to incidents, remain an integral part of the work environment.

Challenges being faced are similar to other units in New Zealand including increasing complexities; the need to balance intervention with the promotion of normal birth; support of LMC midwives which remains a workforce under stress. There has been a notable increase in the need for the DHB to provide a service of last resort in Whangarei. These factors place large demands on the core midwifery staff.

Maternity Early Warning System

Following a pilot commencing in 2018, MEWS is now fully embedded in Te Kotuku. Hospital-wide roll out has been a protracted process due to the demands on the medical emergency response team brought about by the simultaneous introduction of EWS throughout the hospital. Some alterations to the original MEWS escalation pathway have been required following consultation with nursing staff.

Releasing time to care / Paihere

In January 2017 a programme was brought to Northland DHB called '*Releasing time to care'*. Around the beginning of 2019 the programme was completed and a decision was made to continue with a similar programme, using the same philosophy. The name Paihere was chosen to represent this work.
The philosophy of the programme is captured by a focus on:

PEOPLE–including staff wellbeing, the patient journey and the Whānau experience.

PROCESS– determined by the team itself

PROGRAMME- is based on key quality improvement principles such as the Model for Improvement and lean principles.

SUSTAINABLE CHANGE - achieved through sharing ideas, communication and stepping back to review

Over the last year the following work/projects have been agreed to and /or completed.

Project summary	Status
Standardising the birth rooms, this included the lay-out of the rooms and resuscitation tables, the equipment in the IV boxes and suturing kits.	
HCA task list and orientation book.	
Swipe cards for mums to go to SCBU – initially was set up in May 2018 but failed at that stage as doors closed down to non-maternity staff; completed in May 2019 after new/dedicated swipe boxes fitted for these cards only.	
Security in Te Kotuku office - this was of major concern to night staff, with frequent opening and closing of the front door. A new screen was installed in the office to allow staff to see who is at the door and what is happening; followed by fitting of a new door opening mechanism in the office.	
Shift handover - including bedside handover- this project was started in May 2018 and implementation is still in progress.	
Updating the Trendcare handover sheet to make it more useable.	

Antenatal clinic in Te Kotuku, Whangarei Hospital

The antenatal clinic in Te Kotuku, Whangarei Hospital, remains busy. Clinics at full capacity take place four days of the week. The co-location of an ultrasound service has improved access to acute scans and is more convenient for women as scan and obstetrician appointments are aligned. Completion of a fit-for-purpose room to conduct scans has been approved.

A Medicine in Pregnancy clinic is held every week. This clinic comprises a multi-disciplinary team of physician, obstetrician, dietician and nurse / midwife thereby providing women who have diabetes with a streamlined service.

Anaesthetic clinics are held monthly. The advantage of this clinic is that it enables women to be seen in pregnancy, providing an opportunity for them to gain information and make a plan of care rather than being seen acutely on the ward when in labour.

In June this year a diabetes midwifery role was established. The purpose of this role is to increase midwifery input into the care of women with gestational diabetes and to therefore achieve continuity of care during the pregnancy.

Although only in its infancy, the role has already shown to have some valuable benefits with the provision of not only specialist care but with an added holistic midwifery approach.

Weekly fetal assessment clinics have been introduced as part of the antenatal clinic service at Whangarei Hospital. The intention is to streamline obstetric services and provide consistent management of care for women with specific high-risk pregnancies. This clinic accepts referrals for the following:

- suspected fetal abnormality
- increased chance of chromosome irregularities following screening
- previous early-onset pre-eclampsia and/or IUGR
- previous late miscarriage or very preterm birth
- red cell iso-immunisation
- monochorionic twin pregnancy
- early onset IUGR in current pregnancy

A consultant obstetrician, midwife and a sonographer staff the fetal assessment clinic. Following attendance at this clinic, women may be referred to the Maternal Fetal Medicine service in Auckland, with which Northland DHB clinicians work closely.

Bay of Islands Maternity Unit

The primary maternity unit in Bay of Islands Hospital maintains a steady birth rate of around 200 women each year. Māori comprise 65 percent of the births.

The unit is fully staffed by midwives 24/7 and the unit serves as a hub for maternity in the Mid-North. LMC midwives run regular clinics out of the unit. Outreach Whangarei-based services include a weekly lactation consultant clinic, weekly obstetric clinics, weekly scan clinics and diabetes in pregnancy clinics.

Kaitaia Maternity Unit

The primary birth unit at Kaitaia Hospital is the most distant maternity facility from Whangarei Hospital. As such, midwives are required to work to the top of their scope of practice as they are called upon to deal with emergency situations for sometimes, a protracted length of time while waiting for transport or retrieval services.

There were 126 births in Kaitaia last year, a drop from 150 the previous year. 69 percent of births were to Māori women.

The Kaitaia unit is now fully staffed by midwives 24/7. One midwife provides insertion of long acting reversible contraception ranging 5-10 each month, mainly on a drop-in basis. The recent decrease in numbers of midwife LMCs working in the community has resulted in an increased demand for the DHB coordinated care caseload.

Dargaville Maternity Unit

Maternity services in the Kaipara area are provided either by midwife LMCs or DHB employed midwives offering antenatal and postnatal care. Apart from homebirths, women mainly birth at Whangarei Hospital. The provision of inpatient postnatal care remains available at Dargaville Hospital.

177 women from the Kaipara area gave birth in Whangarei Hospital last fiscal year. Labour care was provided by midwives in Whangarei. Of these, 49 women returned to Dargaville Hospital for a postnatal stay of between one-four days duration.

A community consultation meeting held in Dargaville revealed an expressed desire for an increase in maternity services to be available. This will be reported separately but as a result of this consultation, antenatal classes have commenced including separate hapu wananga classes.

It is anticipated that lactation consultants will commence clinics and on-going consideration, in conjunction with DHB radiology, is being given to re-establishing ultrasound clinics. Additional education by the maternity educator is taking place for nurses working at Dargaville Hospital. This is mainly focussing on routine postnatal care, breastfeeding and managing an unplanned birth.

Community Maternity Services in Whangarei – Te Puawai Ora (TPO)

Te Puawai Ora (TPO) is the hub of the DHB maternity community services. It is located centrally in Whangarei and provides a range of services.

DHB Community Midwifery Service

One community Midwife at 0.8 FTE is currently employed but due to higher number of bookings, the service is supported by a temporary midwife relief at 0.4 FTE.

An *0800 4 DHB MUM* phone number was established for the community midwives clients to have a free option for getting in touch. Since this establishment, attendance at clinics has increased and women who are looking for a midwife have been referred to LMC midwives if available.

Numbers of booked women within the community service have steadily risen over the last two years.

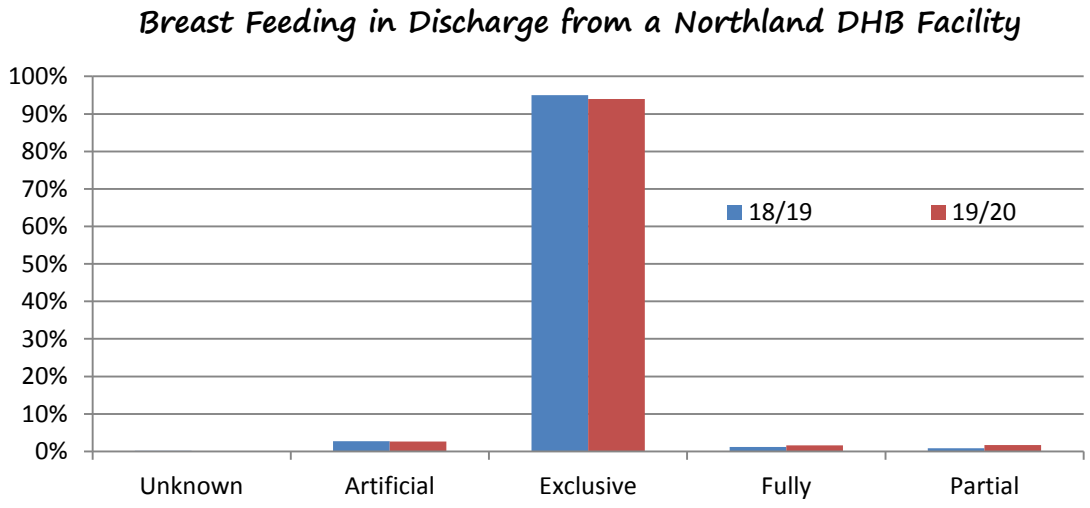
- **2017-2018** = 51 women booked and 18 unbooked.
- **2018-2019** = 121 women booked and 26 unbooked

Lactation Service

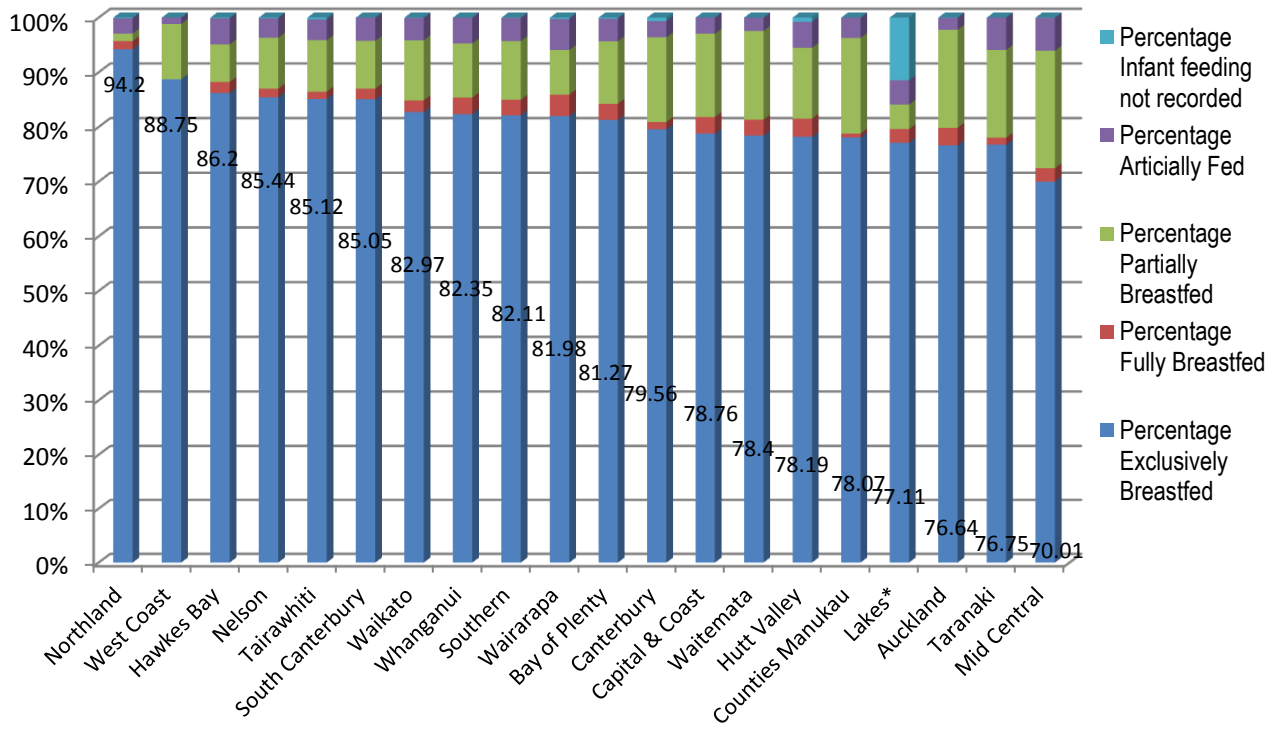
The lactation team is made up of four consultants with an overall FTE of 2.40.

A weekend on-call service is available. Lactation drop in clinics are run from Te Puawai Ora in Whangarei. In February 2018 the Bay of Islands lactation clinic was initiated by the Whangarei team. This is held in the primary maternity unit.

804 contacts between 1st June 2018 and 1st June 2019. Age range of babies was between 2 days to 22 months. Weaning advice is also available. Breast pumps are provided on a loan basis.



"Northland DHB has achieved the highest rate of exclusive breastfeeding and this has been consistent over the last few years. It is a remarkable achievement, especially as Northland DHB works with people who need more equitable health outcomes"……this is a direct quote taken from the latest NZ Breastfeeding Aotearoa report on breastfeeding rates at discharge from maternity facilities in 2018 and is illustrated below.



Baby Friendly Aotearoa – Infant feeding data at discharge by DHB 2018

Northland DHB's impressive breastfeeding rates can be attributed to the commitment by both midwives and a supportive team of lactation consultants. In addition, the culture of breastfeeding is strong in Northland.

Lactation consultants have extended their reach beyond Whangarei and a weekly clinic is now held in Bay of Islands with the intention of a clinic also being established in Dargaville.

Childbirth Education Classes

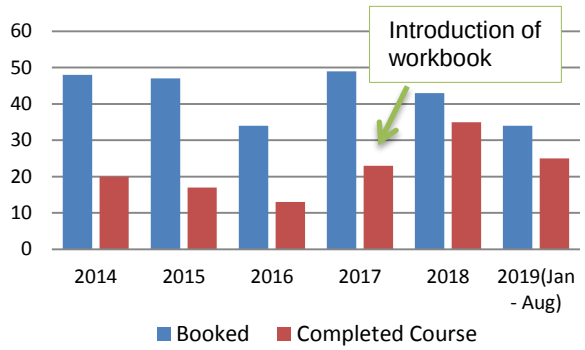
- The child birth educators currently hold evening sessions which run for 2 hours each class over a 6 week period.
- Weekend sessions are also offered. These are held once a month for 6 hours each day.
- The classes remain hugely popular with lots of positive feedback.

A total of 264 families participated in antenatal classes in Whangarei over the past year.

Each Monday during the school term, an open coffee group is facilitated at Te Puawai Ora by the childbirth education team. Pregnant women or women in the early postnatal period attend. Topics covered include the 4th Trimester, Brain Wave Trust ("growing great brains"), sleeping and settling, infant 1st aid, baby massage, budgeting. 40 Monday coffee groups have been held at Te Puawai Ora this year with 490 women and babies attending.

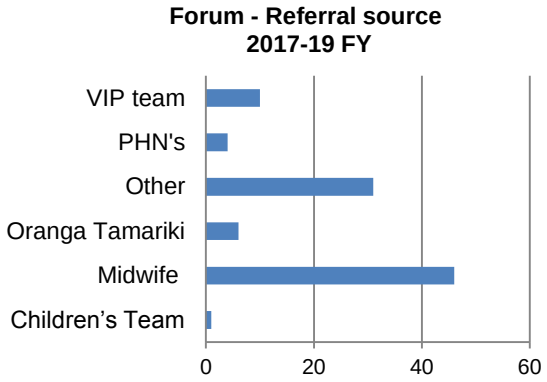
Teens

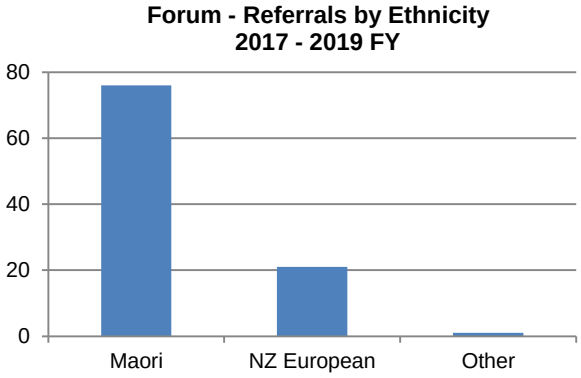
- Northland DHB antenatal classes specifically for young women have been held for the last 10 years in Whangarei. The classes are co-facilitated by Te Ora Hou and a DHB midwife childbirth educator.
- Transport to the classes is provided by Te Ora Hou and a healthy lunch is made and served.
- The class runs weekly for seven weeks during term time.
- Topics covered include how to ensure a healthy pregnancy, signs and stages of labour, pain relief options, a hospital tour, new born care, breastfeeding, safe sleep and a visit to Maia House (a teen parent residential facility).
- Social workers who specialise in rangatahi and peer support groups for young dads are available at these classes. The aim is for all class participants to have support services wrapped around them, to awhi them and encourage engagement.
- Those attending the teen classes are also introduced to hapu wananga antenatal education.
- The young parents are encouraged to complete their own specialised work book. On completion of the course and booklet, the young parents are gifted with a BabyStart box that contains everything a baby needs for the first 100 days of life. Not only is this an incentive to complete the seven week course but it also ensures the young parents are well equipped with necessary high quality material possessions for their baby.

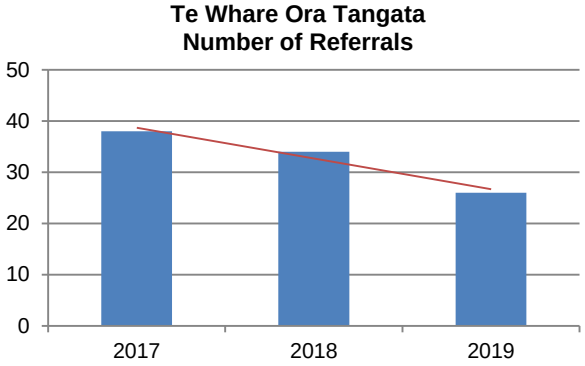


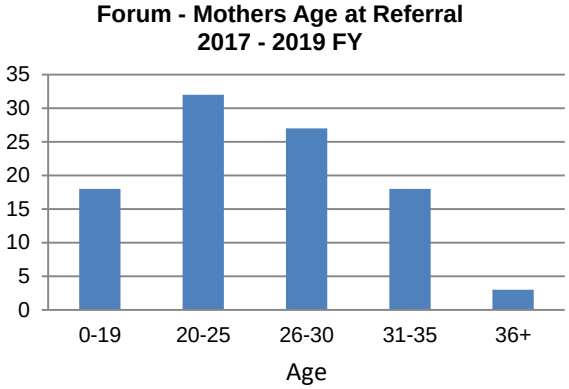
Feedback from attendees at the teen classes resulted in the commencement of a weekly coffee group. These are extremely well attended and cover a range of topics with guest speakers covering budgeting, relationships, contraception, cooking and nutrition, green prescription, child care options.

Newborn Hearing Screening	Regular clinics take place simultaneously with other classes which are being held.
Long acting reversible contraception	Two midwives are available at Te Puawai Ora to insert LARC contraception for free within the first three months postpartum. This can be by appointment or drop in.
Immunisation	This season Te Puawai Ora became cold chain accredited and bought a cold chain immunisation fridge in order to be able to provide opportunistic immunisations to pregnant women attending antenatal classes, coffee groups and antenatal appointments. There is also a drop in service Monday to Friday. Since May, 35 pregnant women have utilised this service.
Te Whare Ora Tangata	Te Whare Ora Tangata has been adjourned since May 2019 and is being reviewed for its effectiveness and functionality. Facilitated meetings have taken place to discuss the recommended changes to the forum and also discuss and respond to other issues that have been raised.









Maternal and Infant Mental Health

Manaaki Kakano

The team comprising a psychologist, psychiatrist, social workers and nurses provides a Northland-wide mental health service for pregnant and postpartum women.

Criteria for referral into the service include women who have confirmed pregnancy from 12 weeks and/or postpartum with a baby under 12 months old with at least one of the following:

- current significant moderate to severe mental health issues
- current perception of unborn infant is distorted with strong rejection or fear of infant
- description of significant difficulty bonding and caring for baby.

Since September last year the Maternal & Infant Mental Health service has received 221 referrals. When a referral is declined, the team identify services in the community that are more appropriate.

The team has become more accessible by running triage clinics which enable timely assessment of all women referred. These clinics take place fortnightly. An additional clinic has been established for women in Hokianga in order to make the service more accessible to those who live in this remote area.

Group sessions form an aspect of the service and are an efficient method of supporting more women in a shorter period of time. These include:

- Circle of Security Reflective Parenting Group
- Coping Group (incorporating dialectical behaviour therapy tools)
- 'Real Women' coffee group.

He Tupua Waiora – Pregnancy & Parental Services (PPS)

The aim of this service is to reduce harm and improve the wellbeing of children by addressing the needs of parents and working to strengthen the family/Whānau environment.

This aspect of the Maternal Mental Health service is for those pregnant or postpartum women who have alcohol or substance abuse issues and with a baby under three years of age. These clients are often experiencing multiple complexities such as stigma, mental and physical health issues, poverty, parenting challenges, custody issues, violence and abuse, criminal charges.

PPS works differently from other mental health teams in that it has capped caseloads of 12 per clinician. This enables clinicians to carry out assertive follow up with each client which encompasses transport to and support and advocacy for women during appointments with various agencies.

Examples of such agencies include women's refuge, police, rehabilitation service, Oranga Tamariki, probation service as well as the maternity service. Coordination and establishing relationships is a key function of this team.

The PPS team comprises similar professional representation with the addition of an occupational therapist.

Since September 2018 PPS has received 88 referrals, 6 of these were declined due to not meeting criteria.

Diabetes in Pregnancy

There have been a number of changes in the diabetes service over the last three months. The Te Kotuku antenatal midwife has been working with the diabetes team and managing patients with gestational diabetes. The diabetes team continues to manage woman with existing diabetes who become pregnant and also provide overflow gestational diabetes management. As with any new process there are always slight changes in how things are done but we are delighted to have midwifery expertise within the team. District hospital diabetes in pregnancy referrals remain the same at this point in time.

There have been a total of 97 referrals for diabetes in pregnancy this year to 30/09/2019. The total referrals for 2018 were **101** so we are projected to exceed the referrals for last year. This year there have being 10 babies recorded as requiring admission to SCBU.

Type of diabetes in pregnancy	Number of referrals	Percentage
Gestational	82	85%
Type one	5	5%
Type two	10	10%

Ethnicity	Number of woman	Percentage
NZE	30	31%
Māori	41	42%
Indian	7	7.5%
Other Asian	6	6.5%
Other or Not defined	13	13%

Northland New Born Hearing Screening (NBHS)

The NBHS programme was rolled out in Northland in 2010.
There are currently 5 screeners, who make up 3.0 FTE. Screeners are based at Whangarei, BOI and Kaitaia Hospitals and provide screening services in all DHB facilities including community settings.

Screening data for 1 Jan- 31 Dec 2018

2,191 recorded births

48 babies transferred to other DHB's for screening
16 babies unable to be located *(0.7 percent of recorded births)*

2,123 offered screening

2.9 percent declined
4.5 percent did not attend appointment

1964 of offered completed screening

89.2 percent pass outcome
0.47 percent passed screening but referral to Audiology due to risk factors (usually assessed around 18 months of age)

Education Report

Compulsory education

Compulsory education is required by the Midwifery Council of New Zealand for all midwives – core and community. These annual sessions were 4 hours long and were held region-wide in the maternity units where the midwives work.

- MESR – The management of emergencies- PPH, shoulder dystocia, breech birth, eclampsia.
- There has been an emphasis on documentation and communication this year.
- Resuscitation - All nurses and midwives attended an annual update for maternal and neonatal resuscitation. Administrative staff and health care assistants attended for maternal resuscitation.

DHB compulsory education

There have been a number of compulsory sessions that Northland DHB required staff to attend – Violence Intervention Programme (VIP) Neonatal Life Support (NLS) and Engaging with Māori . By the end of 2019 it is anticipated that all staff will have attended the latest VIP study day (attendance is necessary with each major update to the programme) and the Engaging with Māori session.

Core midwifery and nursing staff attend the eight hour neonatal life support course at least every three years. This is a multidisciplinary study day for doctors, midwives and nurses working in areas where they may be required to attend a neonatal resuscitation. This day has a strong midwifery focus and considers resuscitation both in and out of the hospital.

Next year there will a concerted effort to roster staff to the revised cultural study day.

Additional education

This year a variety of study days were held which were attended by core midwives, community LMC midwives and, for some of the days, nurses who work in maternity:

- **S.T.A.B.L.E.** eight hours on care of sick babies
- **Breastfeeding**: four and eight hour breastfeeding sessions
- **Immunisation**: Run by IMAC
- **Methcon** have run two session this year on methamphetamine awareness
- **Sexual Health Update**
- **Cardiotocograph (CTG) interpretation:** This year all core midwives are undertaking the RANZCOG online CTG education and attending a four hour CTG workshop. Community LMC midwives also access these workshops
- **Nurses in Maternity**: Their role with primary care women and baby and emergencies.

Non-maternity staff education sessions

Use of Entonox with endoscopy
PACU staff – PPH
ED doctors – Imminent birth and possible emergencies.

There have been a number of in-service training sessions held during the handover period (2.30-3.00pm). These included:

- National maternity early warning score chart and escalation pathway
- Fluid balance chart documentation
- Intimate partner violence and power to protect
- Bedside handover
- Uplift of babies update
- Setting up and using the cool cot when a baby is stillborn.

For the next 12 months the compulsory Midwifery Council and DHB education sessions continue, as will the in-service sessions. There are three suturing workshops planned towards the end of this year and the beginning of next year.

Nga Tatai Ihorangi

Nga Tatai Ihorangi represents the umbrella under which key components relating to the first 2000 days sit.

Tātai *is a tool Māori used to arrange information into sequential order. It describes the relationship from one to another and is used to demonstrate the relational connection of components.* ***Ihorangi*** *are the finite details which make up a bigger picture and contributes to the whole. Ngā wānanga o Hine kōpū is a component of Ngā Tātai Ihorangi*

The learnings gained in Ngā wānanga o Hine kōpū contribute to the overall vision

'kia tupu ora ai ngā uri whakatupu; that the generations yet to come will grow and flourish'.

Hapu māmā need to be nurtured and cared for as they are the keepers of te ira tangata. Investing in hapu māmā ensures the secure safe passage of the 'seed' to the fulfilment of the dreams and aspirations of Whānau .

Hapu Wananga

This year has seen the implementation of Northland DHB's kaupapa Māori antenatal programme; Nga Wānanga o Hine Kōpū. The content of the programme is based in matauranga Māori and follows the haputanga journey using the narrative of the creation story.

Hapu wananga is delivered by three Māori Health Providers across Northland. This is to enable programme sustainability and connections between the antenatal period, well child services (Tamariki Ora) and essential Whānau support programmes e.g. Whānau Ora and Whānau Whānui

Kaiwhaka whānau support the wananga by helping facilitate the korero throughout the wananga. They present sections that focus on the women and midwife partnership and the labour and birth component.

Quarter 3 & 4 (2018/19)

- Six wānanga have been held across Te Tai Tokerau over these quarters
- Wānanga have been held in Kaitaia, Kawakawa, Dargaville, Whangarei and Kaikohe
- 48 mama have attended hapu wānanga

Every pēpi born in Northland recieves a bag at birth. The bags contain an oral health card, plus any other information the midwife/ward wants to put in it. These are available for WCTO providers to distribute to whānau . On the bags are some of the key principles from Nga Tātai.

SUDI prevention programme

Northland DHB's SUDI prevention programme is another component of the Northland DHB Nga Tātai Ihorangi – First 2000 Days programme which illustrates all the work from antenatal to aged five. It outlines the way in which services connect and work with each other to enable high functioning and excellent service delivery for whānau , in particular whānau Māori.

Highlights:

- Working closely with the Northern Regional SUDI Coordinators
- The Northern region safe sleep policy was reviewed over the year, incorporating feedback from all the Northern region DHBs. The updated policy informed the update of the Northland DHB policy.

Over the past year the SUDI programme has been focusing on a number of key interventions

Safe sleep devices (SSD)

Equitable access to safe sleep devices for the most isolated areas in Northland is being achieved by the establishment of distribution hubs throughout the region.

There has been a focus on increasing access to wahakura across Northland. This is achieved by increasing weaving wananga and distributing wahakura through Nga Wananga o Hine Kopu, the kaupapa Māori antenatal programme.

Distribution period	Baby Boxes	Pepi pods	Wahakura
July 2018-Jun 2019	21	157	137

Safe Sleep Distribution Te Tai Tokerau 18/19

Collaboration

- Te Kohanga Reo has been a focus over the year. Safe sleep education and information on safe sleep environments has been given at these venues. Work continues to progress in this area.
- Safe sleep devices and education has been provided to Oranga Tamariki teams based in Whangarei. Further work to be done throughout the region.
- SUDI prevention programme continues to have a strong collaborative relationship with Maternal and Infant Mental Health teams.
- SUDI HealthPathway is live and available for community health practitioners to access.

Training and education	No of trainees	Audience
Practice & assessment	21	Maternal and Infant Mental Health
Education	8	Oranga Tamariki

Safe Sleep Education 18/19

Future SUDI prevention 19/20

- Continue to improve access to safe sleep devices across Northland with a continued focus on whānau in our most isolated areas.
- Continue to deliver all aspects of the SUDI prevention programme in an equitable manner for whānau Māori .
- Commence a programme that encourages the recycling and reuse of the plastic pepi pods currently in our community.
- Work towards wahakura being the primary safe sleep device in Northland.
- Promotion of alignment between hapu wananga and weaving wananga will continue over the year.

Stop Smoking – Hapu Mama and Pepi

The SUDI prevention programme is inclusive of a stop smoking Kaitiaki role. The Kaitiaki positon commenced at the beginning of 2019. Since coming on board there has been a number of highlights and successes.

Northland DHB has the third highest number of pregnant smokers in the country (NZCYES 2017) with significantly higher rates of maternal smoking than the national rate. To help support the stop smoking efforts, a quality project has been implemented in one of the rural areas. This particular area was selected as it has the highest rate of hapu mama who smoke during pregnancy.

The project is focusing on automatic referrals to the stop smoking service and an invitation to have a first appointment with the view that mama may join up for further support. There is a "staggered enhanced bonus programme" with a variety of bonuses available to hapu mama as they advance through the quit smoking programme.

Initial assessments include safe sleep spaces and environments, as well as a pathway to Nga Wananga o Hine Kopu antenatal classes.

Data is not yet available due to early implementation.

Highlights:

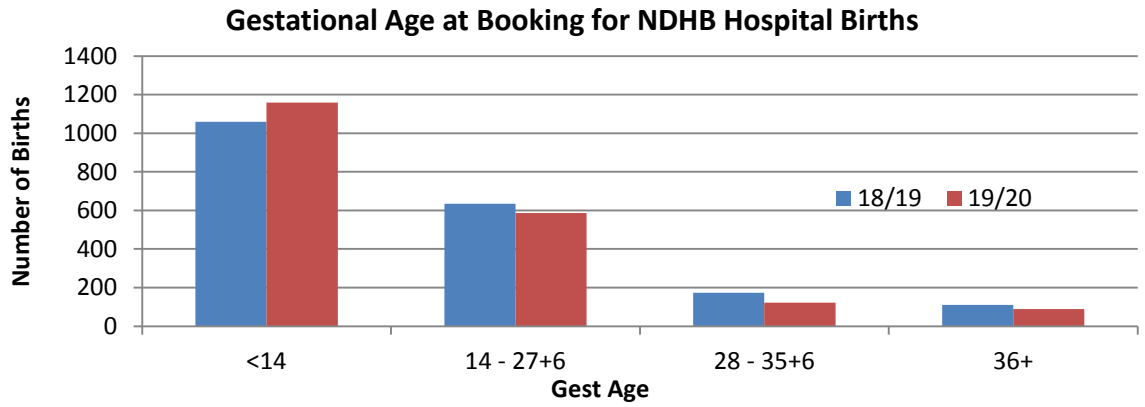
The Kaitikai role has re-established referral pathways for community midwives to the local stop smoking service. This has included promoting the incentives and inhalators programme with each clinic and team.

Referral to the Northland stop smoking service is the call to action with any education or promotional activity that occurs.

Delivering education sessions at Hapu Wananga is an essential component of the role. The messages are strengths based and focus on the impact of smoking while hapu. This includes talking about the impact of Whānau smoking while mama is hapu and once pepi is born. Messages around safe sleeping practices are also an essential component of education.

Summary of Northland DHB self-review against the national maternity clinical indicators

Indicator	Title	NDHB 2017	Change from 2016	NZ
1	Registration with and LMC in the first trimester of pregnancy	▼ 65.3	▲ 1.4	72.3



Northland is very gradually improving first trimester registrations and this appears to be a continuing trend based on the DHB data for the past two fiscal years. Effort has been put into improving data quality and monthly reporting by location takes place at M&M meetings. A recent survey of women who gave birth at Whangarei Hospital (included women who resided outside Whangarei as well) demonstrated the main reason for not registering in the first trimester was because they shifted to Northland during their pregnancy. This survey also revealed that for 55 percent of these women, the first professional visit in pregnancy was to a GP which supports the need to focus on general practice if this indicator is to continue to improve.

2	Standard primiparae who have a spontaneous vaginal birth	▲ 73.5	▼ 3.4	65.1

Northland consistently achieves higher than the national average rates for vaginal birth in standard primiparous women. This is across all ethnic groups apart from Pasifica women who represent very small numbers of the Northland population. There remains a strong focus on normal birth throughout Northland.

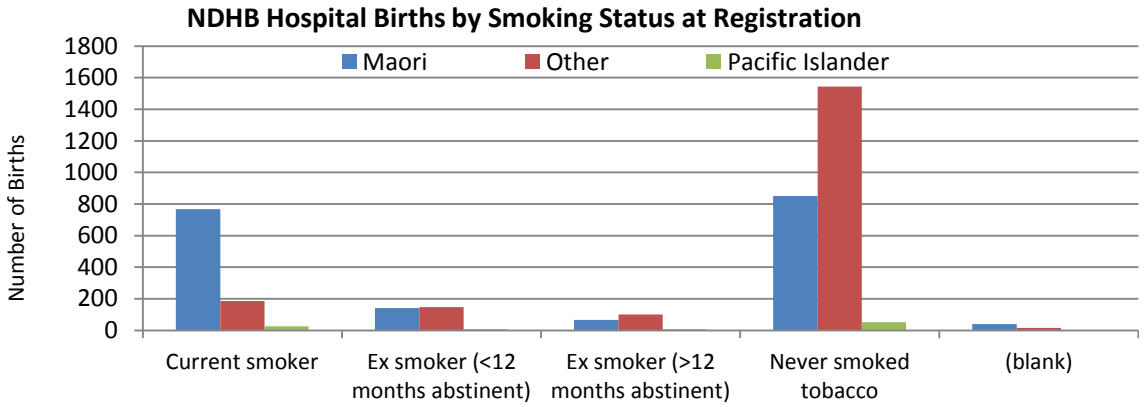
3	Standard primiparae who undergo an instrumental vaginal birth	▲ 12.7	▼ 3.2	16.3

Although the overall rate of standard primiparous women in Northland requiring an instrumental birth remains below the national average, the rates for Māori women are higher.

Indicator	Title	NDHB 2017	Change from 2016	NZ
4	Standard primiparae who undergo caesarean section	▲ 12.3	-	17.6
In line with Northland's higher than average vaginal birth rate, there is consequently a lower caesarean section rate amongst standard primiparae. The rates for Māori in Northland are higher than the general population while there has been a decrease in Indian women requiring caesarean section to below the national rate.				
5	Standard primiparae who undergo induction of labour	▲ 3.9	▼ 1.5	7.6
Despite an increase in the national rate of induction of labour and an increase in the local rate, Northland maintains comparatively low rates. The rates are further decreased for Māori women but around the national rate for Indian women which may well be attributed to the higher incidence of diabetes they experience. Northland is soon to introduce GAP which could potentially impact on induction rates.				
6	Standard primiparae with an intact lower genital tract (no 1st to 4th degree tear or episiotomy)	▲ 41.2	▼ 7.6	27.7
Although the rate of women experiencing an intact perineum has decreased, the Northland rate falls well above the national average. This is evident across all ethnicities except, for the first time in Northland, in our small number of Pacific women.				
7	Standard primiparae undergoing episiotomy and no 3rd or 4th degree perineal tear	▲ 14.1	▼ 3.3	24.5
Northland maintains low rates of episiotomy in all ethnicities. The trend of increasing rates in the Asian population has been reversed in this 2017 data.				
8	Standard primiparae sustaining a 3rd or 4th degree perineal tear and no episiotomy	▲ 3.8	▲ 1.1	4.4
Northland standard primiparae women have returned to lesser rates of third/fourth degree tears overall in the 2017 data, however not so for Māori women for the second year in succession which could be attributed to higher rates of instrumental births. Indian and Asian women also continue to experience higher rates of significant perineal tears.				
9	Standard primiparae undergoing episiotomy and sustaining a 3rd or 4th degree perineal tear	▼ 2.1	▼ 1.1	1.7
This is only the second time in nine years that Northland rates are above the national average. No explanation can be given.				

Indicator	Title	NDHB 2017	Change from 2016	NZ
10	Women having a general anaesthetic for caesarean section	▼ 13.0	▲ 1.2	8.2
Northland has consistently had rates of general anaesthetic for caesarean sections which are above the national average. This indicator has previously been audited by the DHB anaesthetic department and can be explained by the low rate of caesarean section generally and a relatively low rate of epidurals during labour. The disparity evident in 2016 for Māori women has not continued in 2017.				
11	Women requiring a blood transfusion with caesarean section	▼ 3.5	-	3.1
European women contribute to this outlier as all other ethnicities compare favourably. This is a reverse to 2016 although numbers are small.				
12	Women requiring a blood transfusion with vaginal birth	▲ 1.4	-	2.2
The need for blood transfusion following a vaginal birth has remained stable in Northland. The rate for Māori , while still less than the national average is higher. The DHB postpartum haemorrhage guideline has been updated, socialised region-wide and is monitored closely in association with any haemorrhage over 1500mls. Administration of Ferrinject occurs at all DHB facilities.				
13	Diagnosis of eclampsia at birth admission	-	-	-
There were no cases of eclampsia in 2017.				
14	Women having a peripartum hysterectomy	-	-	-
One woman required a peripartum hysterectomy in 2017.				
15	Women admitted to ICU and requiring ventilation during the pregnancy or postnatal period	-	-	-
No women had mechanical ventilation in 2017.				
16	Maternal tobacco use during postnatal period	▼ 22.2	▲ 3.0	10.5
Despite a decrease in the number of women smoking at two weeks postpartum, Northland rates remains a significant outlier for this clinical indicator. As depicted in the graphs below, both European/Other and Māori contribute to this however there is discrepancy between the two ethnic groups of 7.1 and 35.1 percent respectively.Smokefree projects form an important component of the Nga Tatai Ihorangi programme as outlined previously in this report.				

Indicator	Title	NDHB 2017	Change from 2016	NZ



17	Preterm birth	▲ 6.7	-	7.5

Notwithstanding demographics and the high rate of smoking during pregnancy in the Northland population, the preterm birth rate is consistently below the national rate. Of note, the high level of continuity of care by a known midwife available to women in Northland may well contribute for this.

18	Small babies at term (37–42 weeks' gestation)	▲ 2.3	▲ 2.0	2.9

For the first time in nine years, the overall rate of small babies born at term in Northland has fallen below the New Zealand average. Babies born to Pasifica mothers are the exception.

There has been use of growth charts by maternity providers for some time and it is anticipated that this will further increase with the formal introduction of GAP which will enable customised assessments.

19	Small babies at term born at 40–42 weeks' gestation	▼ 35.4	▲ 13.2	31.9

While Northland's rate of small babies born between 40-42 weeks is higher than the national average, there has been a decrease in the incidence in the 2017 year compared to the previous year.

Higher rates are evident in Māori and Pacific populations. In contrast to 2016, there has been a 19 percent decrease in the rate of babies born to Indian mothers in 2017.

While some small babies may have gone unrecognised during pregnancy, others will have been monitored closely to attain this gestation.

20	Babies born at 37+ weeks' gestation requiring respiratory support	▼ 3.6	▲ 0.9	2.0

There has been an ongoing focus of attention by maternity and paediatric staff in Northland on this clinical indicator. Data entry and coding have been checked for accuracy including

Indicator	Title	NDHB 2017	Change from 2016	NZ
consultation with the Ministry of Health. Each case is assessed at weekly trigger meetings and details of all babies receiving more than four hours of respiratory in 2018 have been examined. Findings are described in this report.				

Summary of Northland DHB to PMMRC recommendations 2018

Title	Title
Strategies to reduce preterm birth	• All women who have experienced a preterm birth are counselled regarding recommendations for future pregnancies • A Northland DHB midwife has been part of a regional group developing an information pamphlet for women • The Acting Associate Director of Midwifery attended a regional meeting on preterm birth strategies • All LMCs have been reminded of the importance of screening in early pregnancy for risk factors associated with preterm birth and the need for early referral
Care to women under 20 years of age	• Teen antenatal classes and postnatal support offered at Te Puawai Ora in Whangarei • Content of classes has been developed in consultation with young mothers • Collaboration with Te Hou Ora in the delivery of teen classes
Counselling and shared decision making with women in labour before 25 weeks	Women in labour prior to 25 weeks gestation are jointly counselled by obstetric and paediatric consultants
Administration of antenatal corticosteroids	Audit for a one year period has been completed. Refer page 37
Access to a safe sleep place on discharge from the hospital or birthing unit, or at home	Distribution hubs for safe sleep spaces have been established throughout the region including SCBU in Whangarei
Review, or continue to review, the higher rate of mortality in areas where the rates of perinatal related mortality are significantly higher and identify areas for improvement	Refer page 37

Audit of corticosteroid use

An audit of the administration of corticosteroids in relation to premature labour has been undertaken. All women who presented from July 2018 to June 2019 and met the PMMRC criteria were included however the main limitation of the audit was the small population. Only 21 women were eligible for inclusion in the audit. This made it difficult to establish any significant results or disparities in the data or any significant difference between gestation at delivery, maternal age, dominant hospital or ethnicity and corticosteroid administration could not be established.

Reviewing our audit data, 14 (66.6 percent) women who presented between 23+5 and 33+6 weeks with threatened preterm labour received the first dose of betamethasone. Out of these women five went onto receive the second dose to complete the course of antenatal steroids as per Northland DHB guidelines.

The reasons for the breach in the guidelines in administration of the first dose of corticosteroids included: home birth, clinically not indicated as per consultant decision, contraindication due to maternal complication, rapid delivery (<2 hours) and immediate transfer to a tertiary setting.

The only reason for an incomplete steroid course was due to delivery in less than 12 hours of the first dose of betamethasone.

A further audit over a longer time period will enable better analysis of this aspect of the management of premature labour in Northland.

Northland perinatal mortality / stillbirth rates

Maternity clinicians in Northland are acutely aware that any conversation about outcomes must take place within a context of demographics – especially ethnicity and particularly deprivation. Sixty percent of the Northland population live in quintile 4 and 5 and it is these women who have a higher birth rate than the general population.

All cases of perinatal mortality are individually reviewed at monthly multi-disciplinary mortality and morbidity (M&M) meetings which are attended by both maternity and paediatric staff, either in person or by videoconference. Any contributory factors and learning outcomes are discussed and collectively developed. Minutes, inclusive of learning outcomes, are distributed to all maternity clinicians region-wide.

Northland DHB has increased *access* to free pregnancy ultrasound services in the Mid-North. We acknowledge that there will be further demand on ultrasound services region-wide with the introduction of GAP. Maternity and radiography departments are in communication about this.

GAP

Although most maternity providers in Northland currently utilise growth charts, the GAP programme will be formally adopted in Northland in the coming weeks. An initial training session has already taken place, with others to roll out throughout Northland in the coming months.

Fetal Surveillance

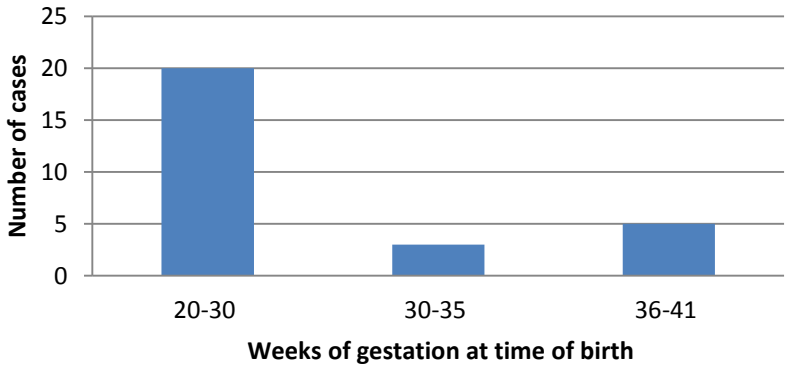
The maternity educator runs monthly 4 hour CTG workshops which are attended by midwives, both employed and LMC community midwives. These sessions are scenario based and well attended. All employed midwives are required to annually undertake the RANZCOG online CTG education in addition to attending the workshop.

SAC Ratings

Maternity SAC ratings are being actively incorporated into the DHB reportable events process. All SAC one and two events are reviewed by the multi-disciplinary reportable events committee (REC), of which the Associate Director of Midwifery is a member. A serious event review process in line with HQSC requirements takes place for all SAC 1 events and recommendations are shared with all staff via maternity M&M meetings. All SAC 2 events are presented at M&M meetings and reported back to the REC committee. The decision as to whether proceed to a serious event review for reported SAC 2 events is made by REC.

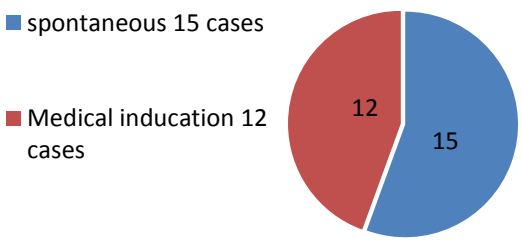
PMMRC /Northland DHB Data for fiscal year 01st July 2018 to 30th June 2019

There were a total of 27 cases of perinatal death in the 2019 fiscal year. Of the 27 cases, seven babies were neonatal deaths, which included the loss of triplets at 20+3 weeks gestation.



This graph illustrates the total cases for the year, and weeks of gestation at time of birth.

This graph illustrates spontaneous v medical induction



Birth environment

Any woman who is undergoing a planned medically induced labour after 20 completed week's gestation is given the choice to labour and give birth either in the butterfly room in Te Kotuku or the gynaecology ward. All but three of the 27 women were cared for in the butterfly room by core and LMC midwives in conjunction with the medical team.

Babies with known abnormalities

There were five babies (18.5 percent) born with abnormalities that were known to be incompatible with life. Four of the babies were stillborn and one was a neonatal death shortly after birth.

Post mortem

In six of the 27 cases parents elected to have a post mortem. In a further seven cases the placenta was sent for examination. Therefore, almost 50 percent of babies had further investigations carried out by a pathologist. In line with best practice, the examinations occurred at Auckland City Hospital where the specialist neonatal pathology service is based.

Follow up

All women are offered a follow up visit with an obstetrician to discuss the pregnancy outcome and clinical findings if pathologist examinations were completed.

One neonatal death was referred to the coroner for investigation. An internal serious event analysis reiterated the need for close observation of all babies in the first two hours after birth.

All women/Whānau are offered a gift box from SANDS. This includes sheets for memory footprints. Photography and foot/hand casting services are also available. Ongoing support is offered via the SANDS as well as midwives

Summary of Northland DHB to PMMG recommendations

Workforce

Recommendations	NDHB Progress
Staffing is an important issue that significantly impacts quality and safety. DHBs need to review basic staffing for midwifery and medical workforces, ensuring that a safe and high-quality service is supported. The workplace culture must enable staff to work collaboratively, feel safe and supported, and maternity services must be women-centred.	All birthing facilities in Northland are staffed 24/7 by midwives. Close to full FTE is in place currently. Work is in progress to equate FTE to MERAS Safe Staffing levels. LMC midwives access all DHB education free of charge. LMC midwives actively participate in case reviews, guideline development and clinical governance. An additional obstetrician has been appointed. The presence of security personnel will be more visible in Te Kotuku.

Place of birth

Recommendations	NDHB Progress
DHBs should support low-risk women to birth at primary facilities, and support women who choose to birth at home: the Ministry should convene a national meeting with representatives from across the sector to discuss what can be done to support low-risk women to give birth at primary facilities or at home.	16.5 percent of women gave birth in primary units in the last FY. All primary women in Whangarei and Dargaville are required to give birth in Whangarei Hospital as there are no other primary facility options. The Northland homebirth rate is one of the highest in the country.

Equity

Recommendations	NDHB Progress
Postpartum contraception options (including long-acting reversible contraceptives (LARC)) should be discussed with all postpartum women. Women should be given a range of options; comprehensive information about risks and benefits; and they should have equitable access to the contraception of their choice.	Annual training opportunities for LARC insertion provided for midwives. LARC insertion available at all facilities including the community service in Whangarei.

Maternal mental health

Recommendations	NDHB Progress
DHBs should evaluate the use and effectiveness of maternal mental health pathways. Maternal mental health outcomes need to be reported, and the impact of the maternal mental health pathways need to be evaluated. Access to primary maternal mental health (including drug and alcohol addiction services) for pregnant and postpartum women should be improved to avoid unnecessary escalation to acute services.	Refer Maternal Mental Health report page 25.

2018-2020 MQSP Plan Update

Ongoing

	Initiative / Rationale	Approach	Outcome / current progress
1.	On-going review of perinatal mortality as Northland continues to have higher rates compared to other regions in NZ.	• Continued MDT investigation of each case of perinatal loss undertaken by DHB processes and presented at M&M meetings and Clinical Governance meetings. • Introduction of GAP region-wide • Continue focus on smoking cessation	• 100 percent utilisation of GAP by all clinicians • Increase in first trimester bookings • Reduction in smoking rates
2.	Increase engagement by women with LMC midwives in the first trimester of pregnancy. Although rates are increasing, Northland's first trimester registrations lag. This potentially impacts on perinatal outcomes. There are also both	Continue attention on first trimester registrations (with particular focus in the Far North area) by: a) making further attempts to engage with general practice via the newly established Primary Health Enterprise b) continue radio and	Continual region-wide increase in first trimester bookings to align with other DHBs

	Initiative / Rationale	Approach	Outcome / current progress
	fluctuations and disparities throughout the region.	social media messaging c) wider distribution of local midwives lists Monthly reporting by locality Adherence to precise booking information to ensure data accuracy Enhanced focus on the use of a cue sheet of questions to seek information from unbooked women	

Completed

	Initiative / Rationale	Approach	Outcome / current progress
3.	Review of the service offered to women who experience a mid-trimester pregnancy loss.	Women who experience a mid-trimester pregnancy loss will be supported to birth in an appropriate environment	An updated guideline on the management of perinatal death incorporating PMMRC recommendations has been completed. All women who have a mid-trimester loss are offered the use of the Butterfly Room in Te Kotuku
4.	Improve referral pathways and processes for women with mental health and addiction conditions.	He Tupua Waiora / Pregnancy and Parenting and mental health referral processes have been aligned	Refer Maternal and Infant Mental Health report

	Initiative / Rationale	Approach	Outcome / current progress
5.	Enhance opportunities for consumer participation in maternity services.	Establishment of further mechanisms to share information and receive feedback	A series of community consultation meetings have taken place in 2018-19 and are reported. A focus group hui for young women has been held in Kaikohe. And an 'insights' hui was held in Whangarei

Business as usual (BAU)

	Initiative / Rationale	Approach	Outcome / current progress
6.	Review of term babies requiring more than 4 hours of respiratory support.	To identify the causes and preventative factors in reducing the number of term babies requiring this level of respiratory support	This is reported monthly at M&M meetings. ALL babies admitted to SCBU are reviewed at Trigger Tool meetings with paediatric staff. Ease of accurate coding has been made possible from a specific stamp which is being utilised in the baby's clinical record. All babies who received respiratory support of more than four hours duration in 2018 have been assessed for contributory factors. This is reported
7.	To improve the validity and reliability of maternity health data.	Coding information is accurate Solutions (maternity information system) information is accurate. Same shown by audit processes Regular systems audits undertaken and issues identified for correction	Continual communication and education of both employed staff and LMCs on joint responsibilities of ensuring correct data entry exists. Bookings do not proceed if information is lacking Audits of Solutions Plus data takes place regularly and corrections made

	Initiative / Rationale	Approach	Outcome / current progress
		Review of data input in regards to coding in relation to numbers of babies needing 4 hours respiratory support in SCBU undertaken in 2016/17 in view of very high rates	The recommendation for 2018/19 to introduce point of care input of some data for labour and birth, baby summaries and discharge notes has been put on hold meantime
8.	Increase the capacity and utilisation of primary units.	Staff employed in and LMC's accessing primary units, including Hokianga Hospital, will increase their confidence in management of emergency situations over the year	Hokianga, Kaitaia and Bay of Islands Hospitals are timetabled to receive regular education sessions by the Maternity Educator. SCBU staff provide yearly education at Bay of Islands and Kaitaia Hospitals regarding care of an unwell baby prior to retrieval by the paediatric team
		An improved service for the women of the Kaipara district will be implemented	Midwives provide 1.2 FTE in a coordinated care model and data is collected on the number of low risk women from this area who are required to give birth in Whangarei due to the absence of a birthing facility closer to home
		A modified staffing model will be Introduced in Kaitaia Hospital	An ACMM has been appointed to the Kaitaia maternity service and the unit is now fully staffed by midwives
		Initiatives to enhance the inclusiveness of primary units into the region's maternity service will continue	Monthly meetings of the region-wide midwife leaders take place. Videoconferencing facilities are available for these meetings Primary units are visited at least monthly by the MQSP leader and/or ADOM.

	Initiative / Rationale	Approach	Outcome / current progress
			Trigger meetings are incorporated in these visits. All clinicians throughout Northland can access M&M meetings via videoconference.
9.	To streamline the process for category 1 LUSCS's.	All Cat 1 LUSCS's will be completed within the Northland DHB guidelines	All category 1 LUSCS's are triggered events and presented at Trigger meetings. Guidelines are being met A repeat audit will take place this year
10.	Improve access to postnatal contraception throughout the region including improved accessibility of long acting reversible contraception for postnatal women.	Processes will be established for LARC insertion to take place in all Northland DHB facilities Annual education opportunities will be provided for midwives	Repeat training sessions have been held and these are available to all midwives, both employed and self-employed LARC's are accessible in primary units as well as the community hub and the secondary service in Whangarei

In Progress

	Initiative / Rationale	Approach	Outcome / current progress
11.	Improve the quality of maternity care available to Māori women and whānau.	Measures to enhance access to high quality culturally appropriate maternity care will be implemented as a MQSP priority during the 2019 year. Equity will be the focus	Kaupapa Māori antenatal education is taking place throughout Northland. A train the trainers approach sits alongside the delivery of these wananga Community consultation meetings were poorly attended by Māori women however a further hui is being considered for the Kaikohe area

	Initiative / Rationale	Approach	Outcome / current progress
			Maternity cultural education will be enhanced for all staff in addition to compulsory attendance at the Northland DHB Engaging with Māori course
12.	Review implementation of GDM guidelines and management processes in order to understand impact on pregnancy interventions and birth outcomes. Explore the possible correlation between GDM and an increased number of babies born between 37-38 weeks.	Review of: Compliance to policy Birth outcomes Gestation of babies at the time of birth Service integration Women's experience Consideration of further service development after audit and survey complete and information analysed	An audit against the national guideline has taken place A survey of women who have experienced the diabetes in pregnancy service has been prepared and is awaiting distribution There is increased participation by the antenatal midwife in Whangarei. She has her own caseload of pregnant women with GDM with oversight by the diabetes service during this transitional stage
13.	Implement consistent pathways for review of serious neonatal and maternal morbidity so that all adverse outcomes are reviewed in a timely and consistent manner.	This project will establish a streamlined process which is consistent throughout the maternity service including • identification of cases for review • Timeliness of review process • Multidisciplinary discussion • Women's perspective • identification of contributory factors and learning outcomes	Draft frameworks have been worked up and feedback has been provided by maternity and paediatric staff as well as the DHB Quality Improvement service. Modifications have been made as a result Input by the Auckland DHB paediatric service has been invited Review of each baby transferred to NICU takes place in a MDT setting at the M&M meetings Cases of severe maternal

	Initiative / Rationale	Approach	Outcome / current progress
			morbidity are also reviewed at M&M meetings as well as the DHB Reportable Events Committee if classified as SAC one or two

Not yet commenced

	Initiative / Rationale	Approach	Outcome / current progress
14.	Establish a service for pregnant women who are Rh negative to access anti-D prophylaxis in line with national recommendations.	A midwifery-led clinic will be established at Te Kotuku for Rh negative women to receive the recommended anti-D prophylaxis during pregnancy Consultation with rural LMCs throughout Northland will take place in order to assist in finding ways to ensure equitable access for all Rh negative women in the region to receive anti-D prophylaxis	Equitable access for all Rh negative women in Northland to receive Anti D prophylaxis during pregnancy
15.	Increase capacity within Te Kotuku to establish a transitional care model in order to avoid separation of mothers and babies.	Two rooms comprising four beds will be opened Project will be part of regional transitional care plan and will be a combined paediatric and maternity imitative	Physical environment will be completed by January 2020 Staffing and model of care will be developed. Project plan yet to commence

Consumer Engagement

Whangarei Insight Gathering Hui

A hui held in Whangarei to gather information on what matters most to Whānau during the entire childbirth experience revealed the paramount importance of personal family relationships. This was regarded by women as more significant than the role of health professionals and therefore serves as a salient reminder that Whānau - centred care must form the foundation of the provision of maternity care for Māori women.

Whānau Hui

Insight gathering

26 June 2018

Community Consultation

As part of the Northland DHB Maternity Quality Service Programme Annual Plan, a project to seek general feedback on maternity services throughout the region was undertaken. This took place from October 2018 to February 2019.

The format of the meetings comprised attendees being asked to identify what is currently working well, what is not working so well and suggestions for improvement going forward.

Feedback from the meetings was collated and is described below.

What is working well	Not working well / suggestions
NZ College of Midwives 'Find Your Midwife' website was viewed as a very useful approach to engaging midwifery care.	Women in Dargaville need clear advice regarding which health professional to contact in certain situations ***Action*** *On the work plan for the coming year*
Midwife home visits up to six weeks were seen as a positive aspect of postnatal care.	A call for maintaining consistency in the DHB midwives working in Dargaville who provide antenatal and postnatal care ***Action*** *In place*
Unanimous appreciation for the normalcy of continuity of midwifery care by a known midwife in the Bay of Islands area.	Disappointment when midwives were unable to provide planned labour care in Whangarei Hospital
Midwives employed by the DHB in Dargaville were described as always responsive, flexible and accessible.	Inability of Dargaville women to have continuity of care throughout pregnancy, labour and postpartum
Appreciation of the availability of a home birth service in Dargaville from LMC midwives in Whangarei or the one midwife who resides in Dargaville.	Need for local women in Dargaville to undertake midwifery education in order to build a sustainable local workforce ***Action*** *Contact has been made with local secondary school* *One woman has enrolled in a health studies preparation course*
Recognition was made of the physical environment at Te Kotuku.	The requirement for women to travel to Whangarei from the Kaipara area to give birth was associated with anxiety

What is working well	Not working well / suggestions
Dargaville Hospital was described as welcoming and with a good atmosphere, providing women with positive experiences. Breastfeeding support was a feature of care.	Enhanced availability of postnatal physiotherapy advice and services. ***Action*** *Education provided for midwives in Bay of Islands.*
	The option of giving birth in Dargaville Hospital was requested by women. The need for this to be a sustainable service and to avoid repeat closure due to lack of staff was genuinely understood by those attending the meeting.
	Request for ultrasound and consultant clinics in Dargaville. ***Action*** *Maternity and radiology staff acknowledge this and are exploring ways to address this*
Views pertaining to breastfeeding support and education by midwives were positive. The inclusion of La Leche League and lactation consultants is valued. The value of lactation support services in Whangarei was noted by those who had been able to travel to access a clinic from Dargaville.	A request was made that lactation consultant clinics be made available in Dargaville on a regular basis so all women, irrespective of resources, can access a lactation service ***Action*** *Lactation clinics will commence in Dargaville in the coming months*
	Access to free dental services in pregnancy. ***Action*** *Vouchers for free dental care are available to women attending hapu wananga*
Availability of kaupapa Māori antenatal education was regarded in a positive light.	A perceived lack of respect for the whenua within hospital settings was highlighted, especially in regards to the storage of it. A freezer is not regarded as a culturally appropriate option for all Whānau ***Action*** *All Whānau are encouraged to take placenta home following birth*

What is working well	Not working well / suggestions
	A request for antenatal classes in Dargaville was put forward, while also acknowledging the recent advent of kaupapa Māori antenatal classes at Te Ha. Other suggestions for antenatal information included advice about reliable apps and on-line information. ***Action*** *Both general and kaupapa Māori antenatal classes have been established in Dargaville.*
Mental health services, once able to be accessed, were regarded in a positive light.	There was an expressed need for women to be given more information about postnatal depression and to be able to access local counselling support following a traumatic birth, a miscarriage or stillbirth.

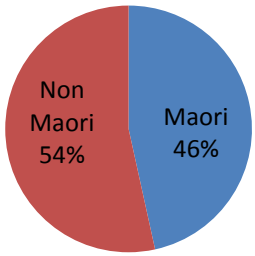
Term babies requiring more than four hours of respiratory support

Both maternity and paediatric staff in Northland acknowledge shared accountability for this clinical indicator outlier and have jointly addressed this in a number of ways over the years - without gaining insight into why this situation persists for Northland babies.

There has been an analysis of all babies needing more than four hours of respiratory support in 2018. Of the **58** babies:

- 27 (46 percent) were Māori (reflecting the Northland birthing population);

Babies needing more than 4hrs of respiratory support (2018)



- babies times of birth were evenly distributed throughout the 24 hour period suggesting the absence of a paediatric consultant on site does not
- influence the decision to commence respiratory support;
- 22 (38 percent) of the babies were born by caesarean section;of all babies born by caesarean section, 3 (14 percent) were elective caesareans;
- 15 (26 percent) of labours were induced;
- 35 (60 percent) were male babies;
- one baby weighed less than 2500 grams;
- age of mothers reflected the birthing population.

This clinical indicator will continue to be monitored at weekly trigger tool meetings and will be reported monthly. Additionally, coding data accuracy will be assured by clear documentation in the clinical record. This will be aided by the use of a stamp stating times respiratory support is commenced and discontinued.