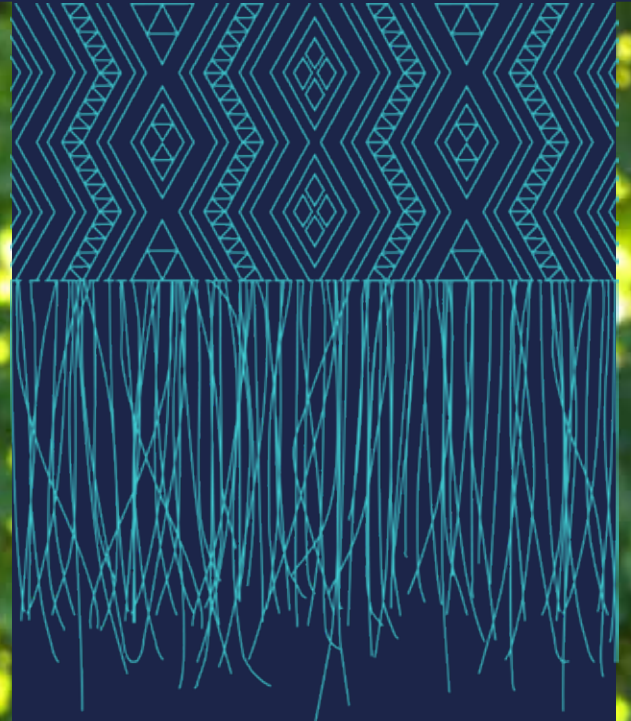


Te Whatu Ora

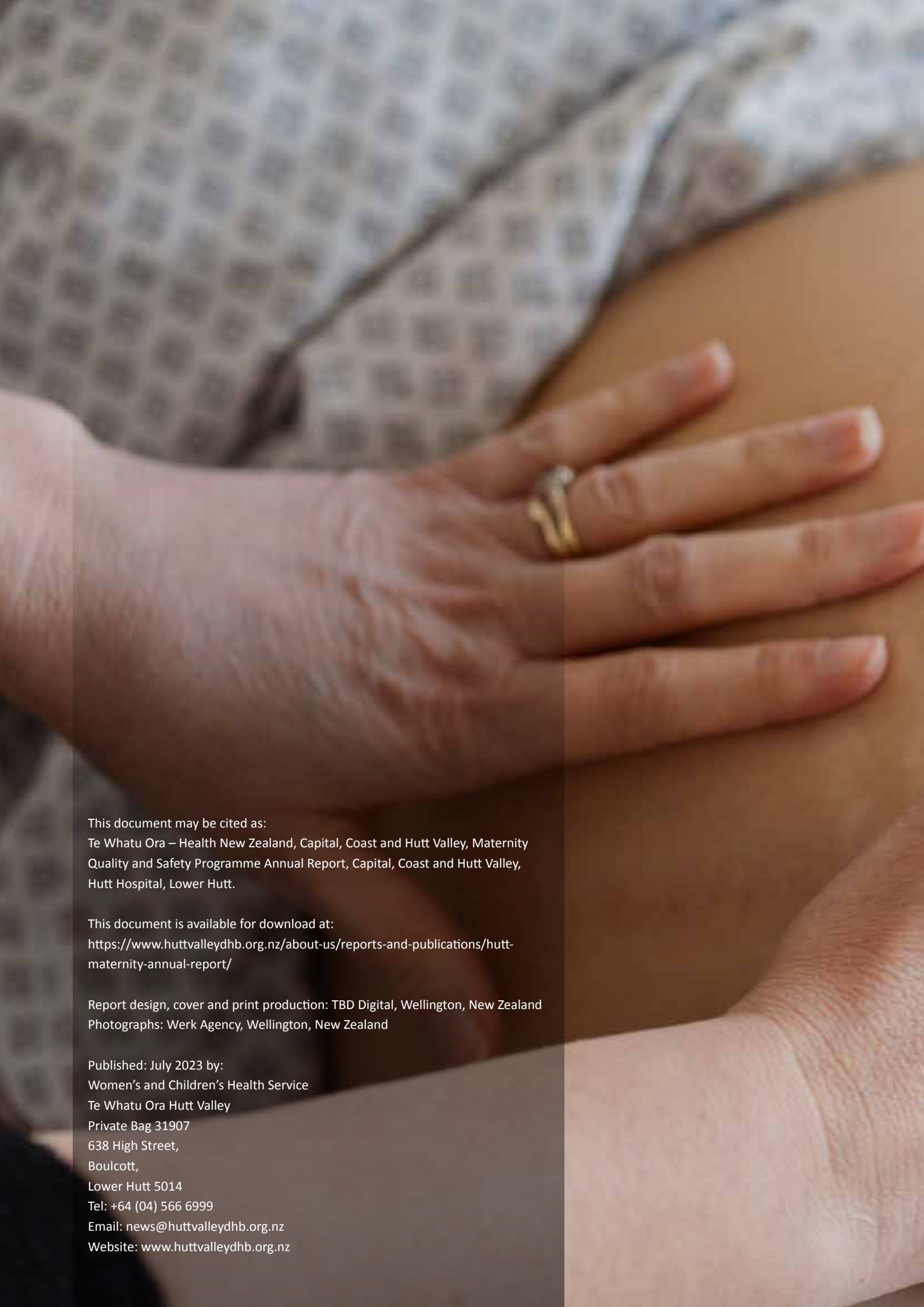
Health New Zealand

Capital, Coast and Hutt Valley



2022

**HUTT VALLEY
MATERNITY
QUALITY &
SAFETY
PROGRAMME
ANNUAL REPORT**



This document may be cited as:

Te Whatu Ora – Health New Zealand, Capital, Coast and Hutt Valley, Maternity Quality and Safety Programme Annual Report, Capital, Coast and Hutt Valley, Hutt Hospital, Lower Hutt.

This document is available for download at:

<https://www.huttvalleydhb.org.nz/about-us/reports-and-publications/hutt-maternity-annual-report/>

Report design, cover and print production: TBD Digital, Wellington, New Zealand

Photographs: Werk Agency, Wellington, New Zealand

Published: July 2023 by:

Women's and Children's Health Service

Te Whatu Ora Hutt Valley

Private Bag 31907

638 High Street,

Boulcott,

Lower Hutt 5014

Tel: +64 (04) 566 6999

Email: news@huttvalleydhb.org.nz

Website: www.huttvalleydhb.org.nz



ACKNOWLEDGEMENTS

Thank you to the many administration, midwifery, nursing and medical staff who have contributed to the content of this report.

Special thanks to the Maternity Quality & Safety Governance Group (MQSGG) including Shelley James, Carolyn Coles, Wendy Castle, Nicole Anderson, Elaine Newman, Heather LaDell, Victoria Parsons, Nikita Hunter, Davina Smith, Jeya Wilkes, Krystal Williams, Margaret Hope, Marleen Greenwood, Meera Sood and Sarah Mills. Thank you also to the equity leads, Victoria Roper, Vee Samoa and Frankie Karetai Wood-Bodley, all of whom have put in an extraordinary effort with the continuing challenges throughout the year.

It is with genuine appreciation that we thank our workforce, consumers, lead maternity carers (LMCs) and wider health care partners and communities.

Thank you also to all the whānau and staff who kindly let us use their images to illustrate our report.

REPRODUCTION OF MATERIAL

The Women's and Children's Health Service, Hutt Valley, permit the reproduction of material from within this document in any form and in any means electronic or mechanical, including photocopying, recording, or by information storage or retrieval system without prior notification, provided that Hutt Valley is acknowledged and cited as the source of that material and that any material used is not altered in any way.

FOREWORD

It gives us great pleasure to present the Maternity Quality and Safety Programme (MQSP) report for Te Whatu Ora, Hutt Valley 2022

The Maternity services at Hutt Hospital experienced challenges and had to prioritise service delivery during the first half of 2022 due to the shortage of staffing and sickness as an impact of COVID 19 pandemic, as was the case with many health service providers across the motu. Significant workforce vacancies across allied health, midwifery, junior and senior medical officers meant that maternity services continued to be severely stretched over this time.

An influx of midwives and doctors from overseas through the second half of the year saw an improvement in staffing levels. A renewed sense of energy was taking shape within the maternity setting with the focus shifting back on strengthening the quality improvement work being undertaken; along with the implementation of new initiatives through MQSP, as well as the Maternal and Neonatal Strategy plan (MNSP).

The MNSP moved into the implementation phase, focussing on four specific workstreams; culturally responsive care, improved access to primary birthing, enabling maternal and neonatal care and a connected system. Recruitment of three equity leads, were employed to support the plan and looked at exploring models of care for Māori, Pacific, and Disabled communities.

The Maternity Redesign work continued with gusto as the detailed plans for the Maternity Unit and Special Care Baby Unit were in their final stages of completion. It was a buzz for the community and staff with the opening of the new Maternity Assessment Unit and Early Pregnancy Clinic as well as having two refurbished rooms on the Maternity ward. The redesign work was then placed on hold as Te Whatu Ora worked through engineering seismic assessments in relation to the Heretaunga building, and it was hoped that the work would continue again in 2023.

In May 2022 details of the new health reforms were announced with the formation of Te Whatu Ora Health - New Zealand working alongside and in partnership with Te Aka Whai Ora - Māori Health Authority to improve services and achieve equitable health outcomes for Māori. This is a significant transformation to our health system as we know it, that will create a more equitable, accessible, cohesive and people-centred delivery of care to pēpi, wāhine and whānau/families.

Capital & Coast and Hutt Valley District Health Boards were disestablished under the new reforms and became one district from July 2022. This is an exciting opportunity for a district wide approach to improve the health and wellbeing of the region and all New Zealanders, and aligns well with the work being undertaken by the Maternity Quality Safety Programme.

Special thanks goes to Nicole Anderson (MQSP Coordinator) for compiling this report.

We hope you enjoy reading this year's report.



Carolyn Coles
Director of Midwifery



Meera Sood
*Clinical Head of Department
Clinical Leader of Obstetrics*



Shelley James
*Service Manager
Women's and Children's Health*

CONTENTS

Acknowledgements	4	Te whakapiki ngā pukenga hauora	24
Reproduction of Material	4	Improving Quality of Care	
Foreword	5	Communication with Consumers, LMCs and Hospital Staff	25
Kupu Whakataki	8	GAP Report	25
Introduction		Maternity Early Warning Score (MEWS)	26
Vision and Values	9	Te kounga me te haumaruru o te taurima wāhine hapū	28
Strategic Alignments	10	Maternity Quality and Safety	
Ō mātou hunga	11	Maternity Quality and Safety Programme	29
Our People		Hutt Valley DHB MQSP Governance Structure	31
The Hutt Valley Region	12	MQSP Achievements 2022	32
The Maternity Population	13	Voices of People and Whānau	43
All women birthing at Hutt Valley District 2022	14	National information and recommendations – PMMRC & NMMG	44
Maternity Facilities	15	What we are needing to focus on over the next 3 years	47
Maternity Ward Redevelopment	16	Ethnicity Reporting	48
Maternity Services	18	Adverse Events	49
Workforce	19		
Community Midwifery Team	22		
Training/Education	23		

APPENDICIES

APPENDIX 1: MQSP Action Plan	50	APPENDIX 3 & 4: Data Sources and References	54
--	----	---	----

APPENDIX 2: Abbreviations and Definitions	53
---	----

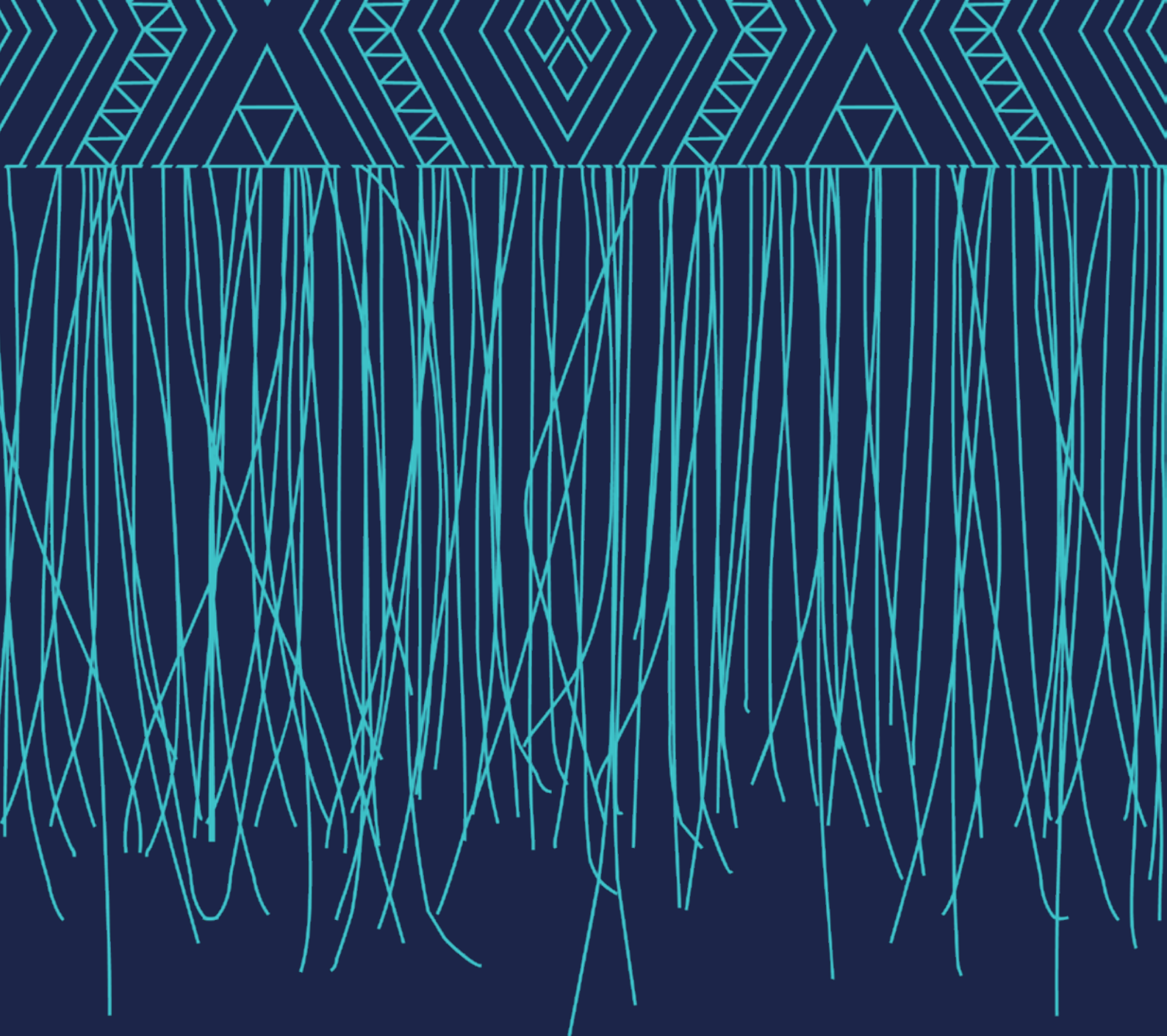
TABLES & FIGURES

Table 1: GAP Data 1 January to 31 December 2022	25	Figure 1: Births 2022	13
--	----	------------------------------	----

Table 2: New Zealand Maternity Clinical Indicators 2020, by DHB of residence, showing Hutt Valley ethnicities (2022) compared to the whole of New Zealand.	46	Figure 2: Care Providers	22
---	----	---------------------------------	----

Table 3: Ethnicity Data 2022	48	Figure 3: Smoking by Priority groups	47
-------------------------------------	----	---	----

Table 4: Reportable Events 2022	49
--	----



Kupu Whakataki

Introduction

TE WHATU ORA HUTT VALLEY DISTRICT

VISION AND VALUES

Hutt Valley is committed to meeting Te Whatu Ora's expectation and delivering our vision of keeping our community healthy and well.

THE VISION, MISSION AND VALUES FROM OUR DISTRICT HUTT VALLEY

VISION

Whānau Ora ki te Awakairangi: Healthy people, healthy families and healthy communities are so interlinked that it is impossible to identify which one comes first and then leads to another.

MISSION

Working together for health and wellbeing.

Ō MĀTOU UARA – VALUES

Mahi Pai 'Can do': Mahi Tahi in 'Partnership': Mahi Tahi Te Atawhai Tonu 'Always caring' and Mahi Rangatira 'being our Best'.

DISTRICT RESPONSIBILITY

The district leadership have collective accountability for leading with integrity and transparency a progressive, high performing organisation, aimed at improving the health and independence of the community we serve and achieving equitable outcomes for all. The leadership team are responsible for achieving this aim, aligned with our Region, within the available resources, through a skilled, empowered, motivated and supported workforce in line with government and HNZ policy.

WOMEN'S AND CHILDREN'S HEALTH SERVICE PERSPECTIVE

The Women's and Children's Service Group is one of six within Capital, Coast and Hutt Valley district's provider services. Services and specialties within the group range from primary to tertiary level with service provision for the district, the central Region and wider Regions. The Group operates from four sites across the district including Wellington Regional, Hutt and Kenepuru hospitals as well as the Kāpiti Birthing unit and Health Centre.

- Our services include:
- Obstetrics and Gynaecology
- Maternity
- Neonatal Intensive and Special Care Units
- Child Health
- Child Development
- Genetics
- Violence Intervention Programme

STRATEGIC ALIGNMENTS

TE WHATU ORA

The Health System in Aotearoa is entering a period of transformation as we implement the Pae Ora/Healthy Futures vision of a reformed system where people live longer in good health, have improved quality of life, and there is equity between all groups.

We want to build a healthcare system that works collectively and cohesively around a shared set of values and a culture that enables everyone to bring their best to work and feel proud when they go home to their whānau, friends and community. The reforms are expected to achieve five system shifts. These are:

1. The health system will reinforce Te Tiriti principles and obligations
2. All people will be able to access a comprehensive range of support in their local communities to help them stay well
3. Everyone will have equal access to high quality emergency and specialist care when they need it
4. Digital services will provide more people the care they need in their homes and communities
5. Health and care workers will be valued and well-trained for the future health system.

TE TIRITI O WAITANGI AND MĀORI HEALTH OUTCOMES

Māori are the indigenous peoples of Aotearoa. We have particular responsibilities and accountabilities through this founding document of Aotearoa. We value Te Tiriti and have adopted the following four goals, developed by the Ministry of Health, each expressed in terms of mana and the principles of:

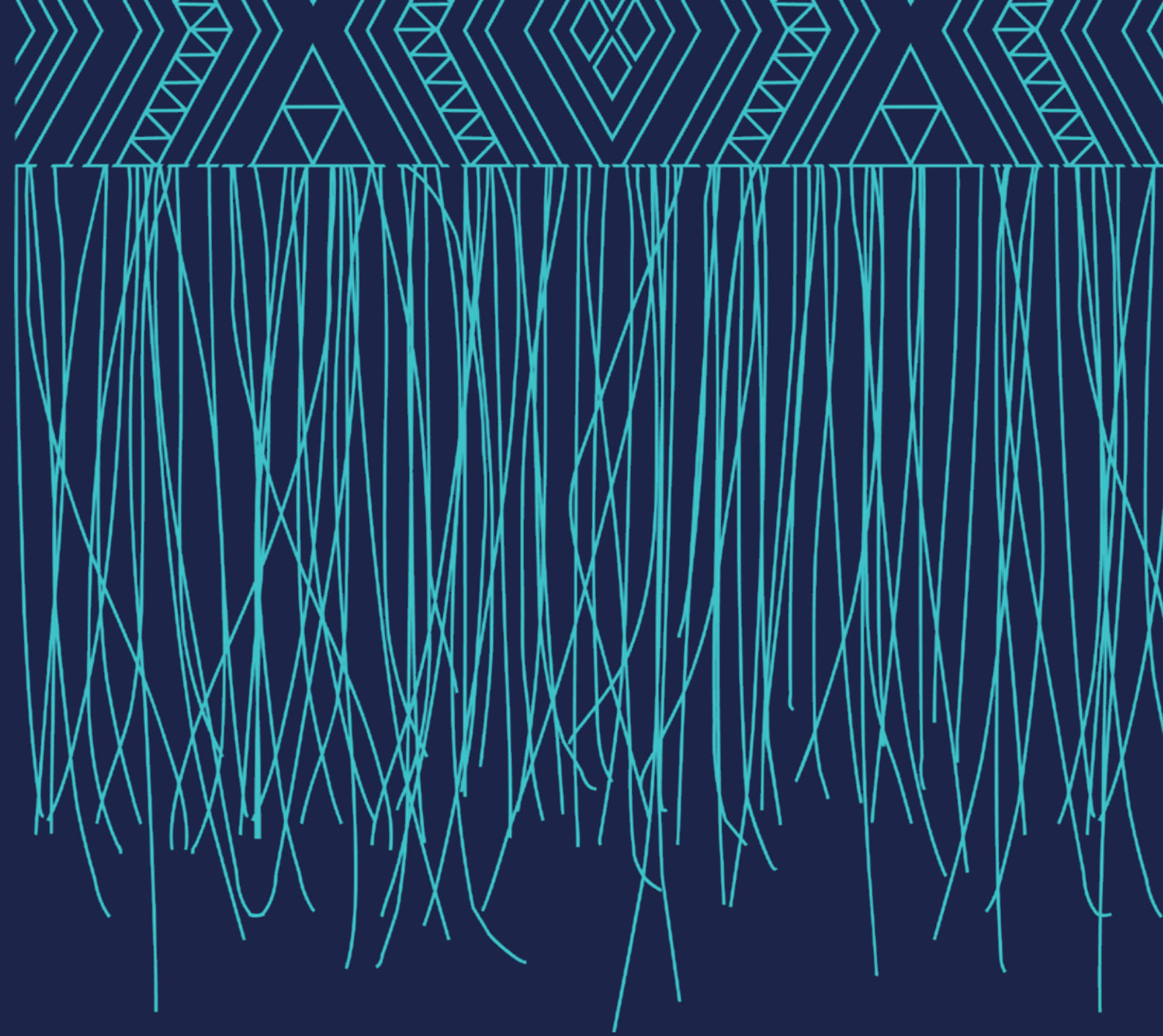
MANA WHAKAHAERE Effective and appropriate stewardship or kaitiakitanga over the health and disability system. This goes beyond the management of assets or resources.

MANA MOTUHAKE Enabling the right for Māori to be Māori (Māori self-determination); to exercise their authority over their lives, and to live on Māori terms and according to Māori philosophies, values and practices including tikanga Māori.

MANA TĀNGATA Achieving equity in health and disability outcomes for Māori across the life course and contributing to Māori wellness.

MANA MĀORI Enabling Ritenga Māori (Māori customary rituals) which are framed by Te Aō Māori (the Māori world), enacted through tikanga Māori (Māori philosophy & customary practices) and encapsulated within mātauranga Māori (Māori knowledge).

We will target, plan and drive our health services to create equity of health care for Māori to attain good health and well-being, while developing partnerships with the wider social sector to support whole of system change.



Ō mātou hunga
Our People

THE HUTT VALLEY REGION



TE AWAKAIRANGI



The name Te Awakairangi, originally given to the Hutt River, means esteemed or precious and is attributed to the first Polynesian explorer Kupe.

OUR POPULATION

The Hutt Valley region is situated in the Lower North Island close to the capital city Wellington.

The region extends from Wainuiomata to Upper Hutt, on the southern side of the Remutaka range.

In 2022 our population was estimated around 111 500 with 16% of our population identifying as Māori, 9% as Pacific and 13% as Asian. http://citypopulation.de/en/newzealand/northisland/wellington/1399__lower_hutt/. Source: Statistics New Zealand / Te Tari Tatau (web)

Hutt Valley has a relatively equal proportion of people in each section of the population, with a slightly higher proportion of people in the least deprived section.

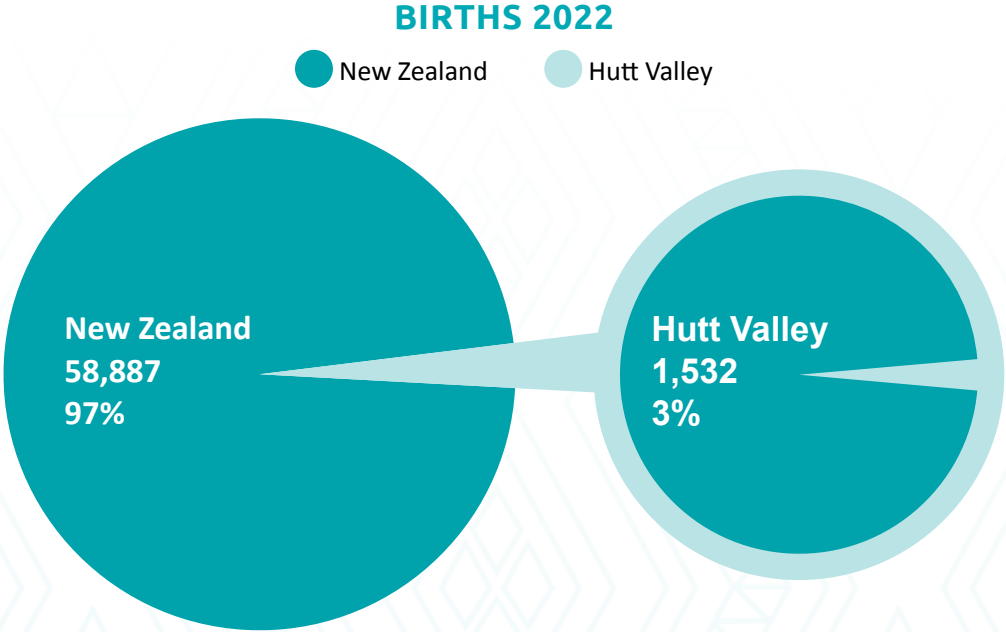
Greater numbers of Māori and Pacific families reside in the most deprived areas. Health disparities linked to deprivation are evidenced in poorer health outcomes and we acknowledge our responsibility to design and deliver maternity services that are accessible and responsive to our population's needs.

THE MATERNITY POPULATION

There were 58,887 people recorded as giving birth in New Zealand in 2022, according to Statistics New Zealand www.stats.govt.nz.

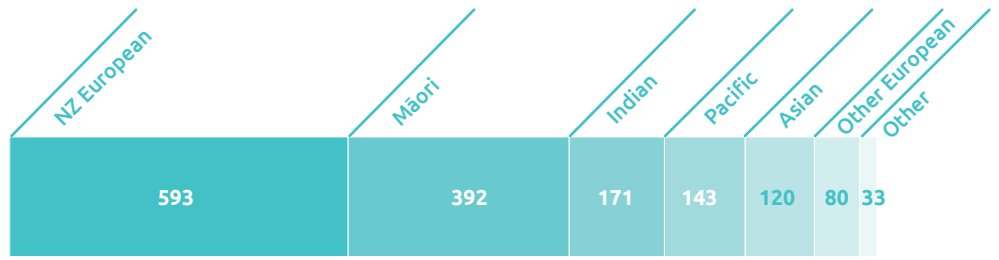
In 2022, Hutt Valley recorded 1532 births, these occurred either at Hutt Maternity, an unplanned birth at home, or birthed in transit, en route to hospital. Our birth rate is slightly lower than previous years and equates to 2.6% of the birthing population of New Zealand.

Figure 1: Births 2022



ALL WOMEN BIRTHING AT HUTT VALLEY DISTRICT 2022

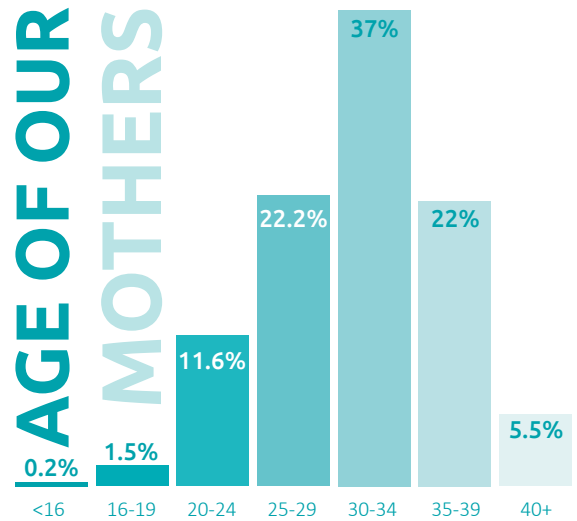
**ETHNICITY
LIVE BIRTHS**
1532



HUTT VALLEY DOMICILE BREAKDOWN

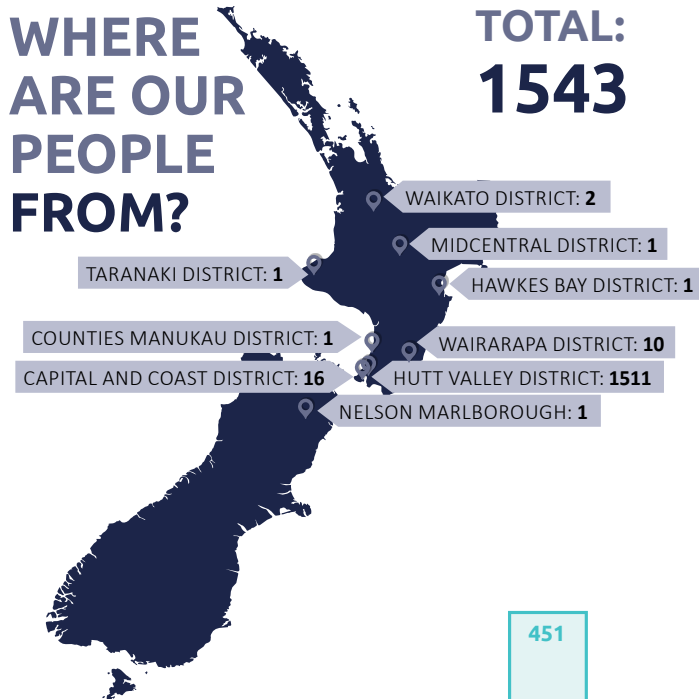
NAENAE	STOKES VALLEY	TAITA/ EPUNI	WESTERN HILLS	WAINUIOMATA	PETONE/ ALICETOWN	CENTRAL	EASTERN BAYS
131	133	145	114	248	76	213	16

AKATARAWA	MANGAROA	TE MARUA	PINEHAVEN	RIVERSTONE/ MOONSHINE	TOTARA PARK	TRENTHAM	U.H CENTRAL
34	12	56	62	12	28	121	110



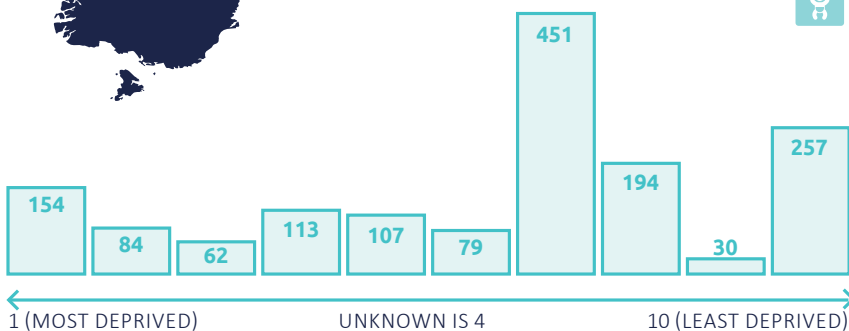
WHERE ARE OUR PEOPLE FROM?

**TOTAL:
1543**

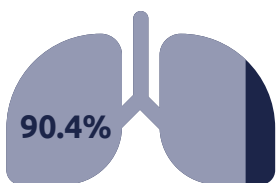
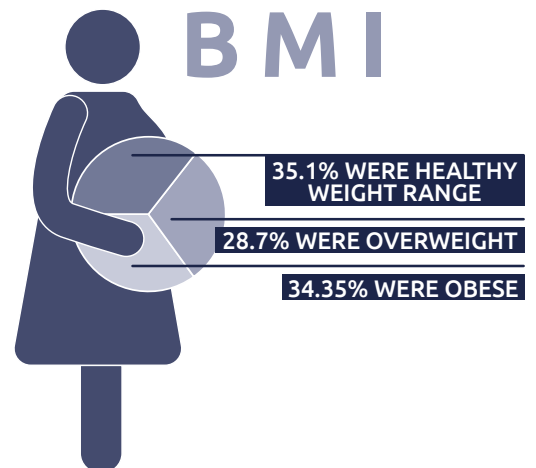


NUMBER OF HOME BIRTHS

95



BMI



SMOKING

90.4% OF PEOPLE BIRTHING AT HUTT WERE NOT SMOKING AT BOOKING WITH THEIR LMC

MATERNITY FACILITIES



At Hutt Valley District we provide both primary & secondary level maternity care. As a teaching hospital we support training for doctors, midwives and nurses. We regularly provide clinical placement opportunities for student midwives both from Otago Polytechnic and Victoria University.

Our facilities are located at Hutt Hospital and currently include

- Birthing Suite 8 rooms
- Maternity Ward 17 beds
- Maternity Assessment Unit (MAU)
- Early Pregnancy Clinics
- Community Midwifery Clinics
- Secondary care and Gestational Diabetes Clinic

Improvements to our facility and equipment continued in 2022 with the completion of two refurbished postnatal rooms. Planning is in place for further ward re development.

We were also able to open our updated Early Pregnancy Clinic and Maternity Assessment Unit rooms. This now allows for separation of these areas and a larger and more appropriate space for obstetric consultations.



MATERNITY WARD REDEVELOPMENT

Continuing from the proposals around the maternity redesign detailed in the Hutt Maternity Quality & Safety Programme Annual Report 2020/2021, and with support from the MOH, work progressed on the initial stages of upgrading two of the antenatal/postnatal rooms in the maternity ward.

Together, working with consumers, Māori and Pacific representatives and feedback from members of the Hutt Maternity Action Trust (HMAT) a comprehensive design was developed. The redevelopment team also worked closely with a colour consultant, flooring expert and joiner to bring this feedback to life.

Key themes from the consultation process were adopted to create design elements that achieve a warmer and less clinical environment. This includes the use of muted colours, softer lighting, increased storage areas, sunscreen roller blinds and textured

curtains to provide privacy for parents and whānau and an overall more homely feel.

We have also worked to design and arrange furniture for partners, so that both parents can focus on bonding with their new pēpē. This currently includes the use of foldaway beds however, we anticipate as work progresses we will be able to include double beds in some rooms.

In June 2022, the Hutt Valley District Health Board released results from the detailed seismic assessment (DSA) on the Heretaunga Block at Hutt hospital. With one element (the concrete façade) at 15% of the New Building Standard (NBS) at IL3 (hospital level building), the building is considered earthquake-prone (EQP).

At this point, any further work on the maternity ward re-development was paused until a solution to the EQP status of the Heretaunga Block was determined.



EARLY PREGNANCY ASSESSMENT CLINIC AND MATERNITY ASSESSMENT UNIT

At the commencement of 2022 work was already underway on the upgrading and separation of our Early Pregnancy Assessment Clinic (EPAC) and Maternity Assessment Unit (MAU) spaces.

As a result of the review undertaken in 2018 recommendations were made to ensure appropriate space was available for assessment of women/pregnant people experiencing pain & bleeding in early pregnancy or miscarriage.

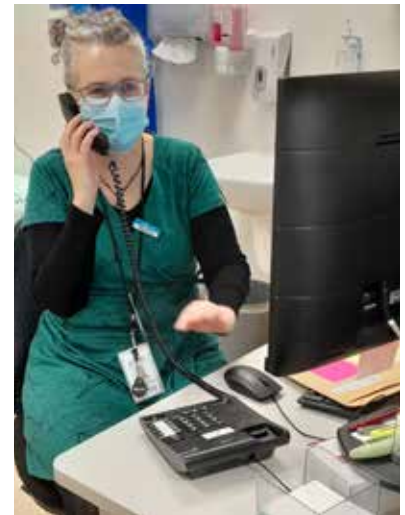
The re-design and expansion of the existing MAU area resulted in a purpose built waiting and consulting room area located outside the Radiology department, meaning that access was now directly into EPAC without first needing to enter through the MAU waiting area.

This has ensured the provision of appropriate care to grieving whānau/families in an area now designed to provide privacy.

The re-developed EPAC and MAU spaces were officially opened in July 2022.



Meg Waghorn, Chair Hutt Maternity Action Trust, Rhondda Knox, Group Manager Surgical Women's and Children's Service and Elaine Newman, Clinical Midwifery Manager at the opening of the MAU rooms.



Natasha Jelbert RN EPAC Nurse.





MATERNITY SERVICES

INFORMATION FOR OUR CONSUMERS

In 2022, Hutt Maternity introduced a booking letter sent to all families/whānau booked to birth at our facility.

Our booking letter comprehensively covers options for birth and postnatal stay at any of the Capital, Coast and Hutt Valley District maternity facilities, including the Keneperu Maternity Unit and Paraparaumu Maternity Unit.

The letter also provides handy links and QR codes to relevant websites so that our families/whānau

can access further information around place of birth options.

New parents can find further links to information on pregnancy, birth and parenting information via our Hutt Maternity website <https://www.huttmaternity.org.nz/> or pēpē ora websites. <https://www.wellington.pepeora.nz/>

Families/whānau are encouraged to discuss preference of birthing options, including home birth with their Lead Maternity Carer.

WORKFORCE

OBSTETRIC MEDICAL OFFICERS

As part of the finalisation of the Maternity review undertaken in 2018 the senior medical officer (SMO) workforce for Obstetrics and Gynaecology (O&G) continued with the near completion of their job sizing exercise in 2022.

It was proposed additional SMO O&G FTE to enable outpatient hysteroscopies and have dedicated Caesarean section lists rather than utilising the Obstetricians on call for Birthing Suite to undertake these.

An increase in RANZCOG training supervisors and senior house officers by 2.0 FTE helped support the increased acuity and work undertaken after-hours 7 days per week, in the maternity setting.

MIDWIFERY MANAGERS

Appointment of 2DHB Director of Midwifery and Associate Director of Midwifery roles

During 2021/2022 the Director of Midwifery roles for Capital & Coast and Hutt Valley DHBs were re-scoped into a 2DHB Director of Midwifery position and 2DHB Associate Director of Midwifery position.

In February 2022 we welcomed the appointment of Carolyn Coles as Director of Midwifery across both Capital & Coast and Hutt Valley DHBs. In

March 2022 Wendy Castle was appointed as the first 2DHB Associate Director of Midwifery.

With the change to Te Whatu Ora Capital, Coast and Hutt Valley district on 1 July 2022, these roles were already ideally positioned to transition to district wide responsibilities allowing for closer alignment of work programmes in the maternity service.

Change proposal being worked on to align senior midwifery titles and position descriptions throughout Capital, Coast and Hutt Valley

Historically the choice of titles for employed midwives has been governed by the broad range of Midwifery Employee Representation and Advisory Service (MERAS) and New Zealand Nurses Organisation (NZNO) approved titles and by local variations of these titles. At times the titles have grown in length to a point where they lose their meaning e.g. Associate Clinical Charge Midwife Manager.

As an outcome of the Midwifery Accord whose parties included MERAS, NZNO, Ministry of Health and DHBs it was agreed that there should be a national consistency in job titles.

In the MERAS MECA ratified from 1 February 2021 – 30 April 2023 several senior midwifery



Carolyn Coles, Director of Midwifery



Wendy Castle, Associate Director of Midwifery

titles were reviewed and the following principles followed:

1. All titles should include the word “midwife” to make it an explicit midwifery role
2. No title should be longer than three words, although some titles have a hyphenated descriptor such as Midwife Specialist – complex care, which will elongate the title when written in full.

Capital, Coast and Hutt Valley are now one district so the opportunity to align senior midwifery titles and their respective role descriptions is timely and allows for greater consistency. The role descriptions for the following roles have been reviewed and rewritten in collaboration with union partners.

- Charge Midwife Manager and Clinical Midwife Manager roles
- Associate Charge Midwife Manager and Associate Clinical Midwife Manager roles
- Midwifery Educator and Clinical Midwife Educator roles

No other changes are proposed to the incumbents’ terms and conditions.

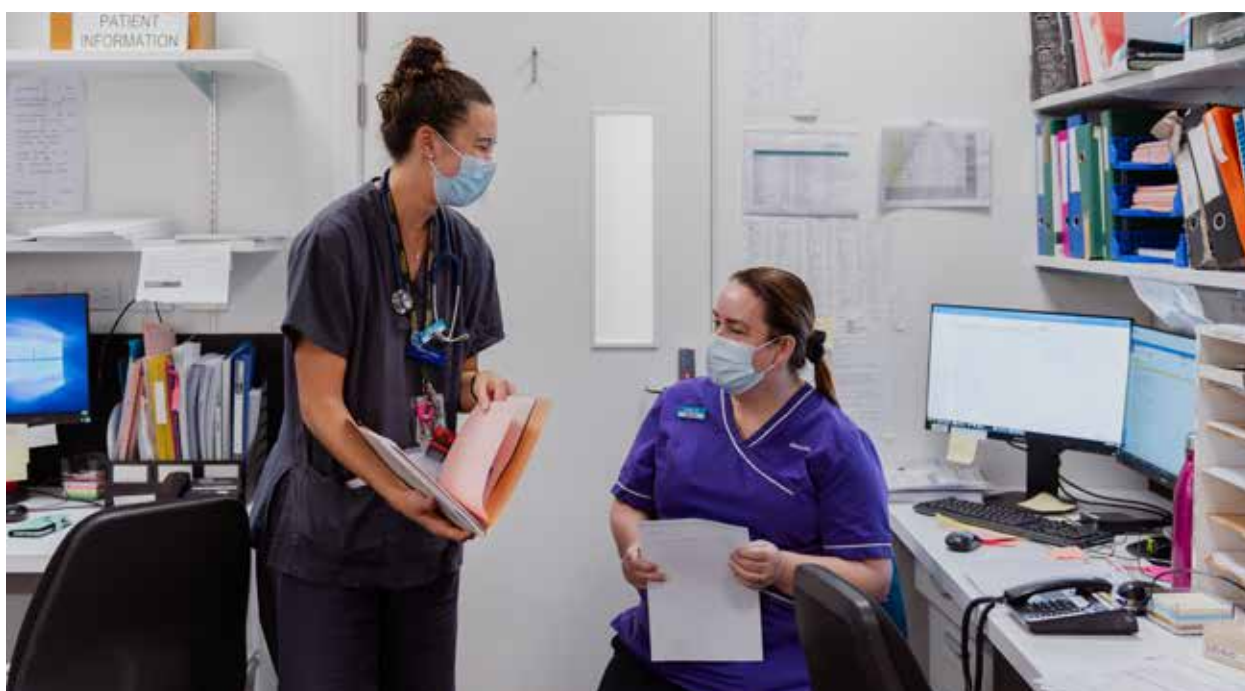
CONTINUING PROFESSIONAL DEVELOPMENT FUND

Continuing Professional Development (CPD) Fund for MERAS Midwives (Capital, Coast and Hutt Valley)

As an outcome of the Midwifery Employee and Advisory Services (MERAS) MECA each Te Whatu Ora district (previously DHB) was required to commit a sum of \$1,000 per MERAS member (midwife headcount) for each financial year (from 1 July to 30 June), to enable midwives to meet approved professional development requirements. Te Whatu Ora – Health New Zealand Capital, Coast and Hutt Valley developed an on-line application and approval process to support the continuing professional development opportunities of the midwife.

The criteria to access the CPD fund is outlined below:

- a) Memberships: All midwives (including those on Individual Employment Agreements) may access the CPD fund for reimbursement (on presentation of official invoice with GST number and receipt), the cost of membership





to the New Zealand College of Midwives (NZCOM), the professional association that is directly relevant to the employed midwife's duties, to a maximum of \$345 per annum (as per MECA). Where the employee also works for another organisation, or in private practice, the payment will be pro-rata.

b) Courses: All midwives (including those on Individual Employment Agreements) may request funding towards any courses/ programmes that are relevant to the individual's professional development within healthcare and must be related to the midwifery scope of practice, position profile or career development. This includes:

1. Tertiary education courses, papers and programmes (applications for post

graduate funding should in the first instance be made to Health Workforce New Zealand for funding administered by NZCOM)

2. External provider workshops or courses
 3. Conference registration
 4. Costs related to textbooks, travel and accommodation can be considered where these are within the individual midwife's funding allocation for that year.
- c) All midwives must declare if they have applied for funding from another source (regardless of outcome of the funding application at the time of this application). Funding from the CPD fund will not be granted for the successful applicant to repay another grant/trust fund.

COMMUNITY MIDWIFERY TEAM

In 2022, the Hutt Valley district continued to have a shortage of LMC Midwife availability, resulting in our Community Midwife Team caring for an increasing number of pregnant people.

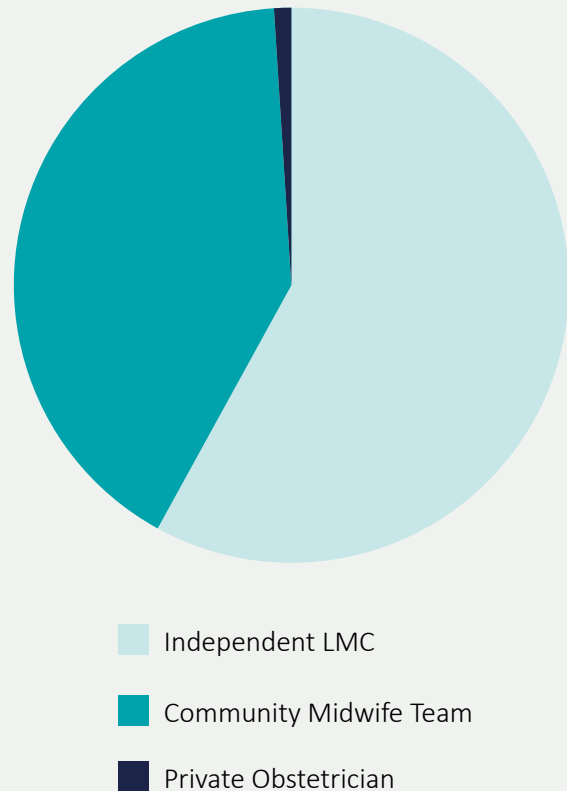
A private obstetric practice comprising of two Consultant obstetricians also commenced taking on clients during the period covered by this report.

Of the 1532 live births at Hutt Hospital in 2022, 58% of people were under the care of an LMC Midwife, 41% under the care of the hospital Community Midwifery Team and 1% under private obstetric care.

The Hutt Valley district Community Midwife Team have expanded the Hapū Ora model of care to offer clinics in Pukeatua daycare centre Wainuiomata, Waiwhetu marae, Koraunui marae in Stokes Valley, Orongomai marae in Upper Hutt and Timberlea.

They also offer clinics in the community at Pomare community house, Pacific Health Services Naenae and Lagans pharmacy in Upper Hutt, as well as having clinic rooms available here at Hutt Hospital.

Figure 2: Care Providers



SOME OF OUR COMMUNITY TEAM MIDWIVES



Angela



Julie



Sharon

TRAINING/EDUCATION

2022 started as a year to get back on track from the interference of COVID in our education programme. However when the first Omicron wave hit in February, we were again back to cancelling education for external attendees, and staff education travel.

PRACTICAL OBSTETRIC MULTI-PROFESSIONAL TRAINING – (PROMPT)

Due to rotation of staff and the repercussions of the Covid-19 pandemic in 2020, our PROMPT teaching team at Hutt Maternity, consisting of midwifery educator, coaches and obstetric training supervisors were all unfamiliar with the updated PROMPT Obstetric training.

After three attempts for the team to attend a two day training course in Auckland were cancelled, it was with great celebration that a team of five midwives, obstetricians and anaesthetists attended PROMPT Train the Trainer in June/July 2022, and started planning to get our PROMPT training back up and running in 2022-23.

FETAL SURVEILLANCE EDUCATION PROGRAMME – (FSEP)

We have been fortunate that our Fetal Surveillance Training has been able to continue uninterrupted through the past few years due to lucky timing of our planned dates. We ran two days in late 2021 and a single day in 2022, a total of 120 places, which ensures that all staff can attend the mandatory training every two years, as required.

Hutt Maternity continues to have good uptake of both the face-to-face training amongst permanent and casual midwifery and obstetric staff, and our LMC midwives, and many complete the eLearning refresher in interim years. In 2022 we provided

places for five Te Whatu Ora staff from other areas, in exchange for availability of places for our staff in other districts or facilities in this district.

HE ARA POUTAMA

Following on from the success of the district-wide cultural education funded by MQSP and provided by Hukatai Consultants in late 2021, we were able to engage their services again in 2022 to provide three sessions (named He Ara Poutama) building on the previous six hour day to develop understanding of Te Tiriti negotiations, Māori history and te reo. This was complemented by a Pacific cultural day and sessions on disability and neurodiversity, to build our understanding of issues of health equity from various angles.

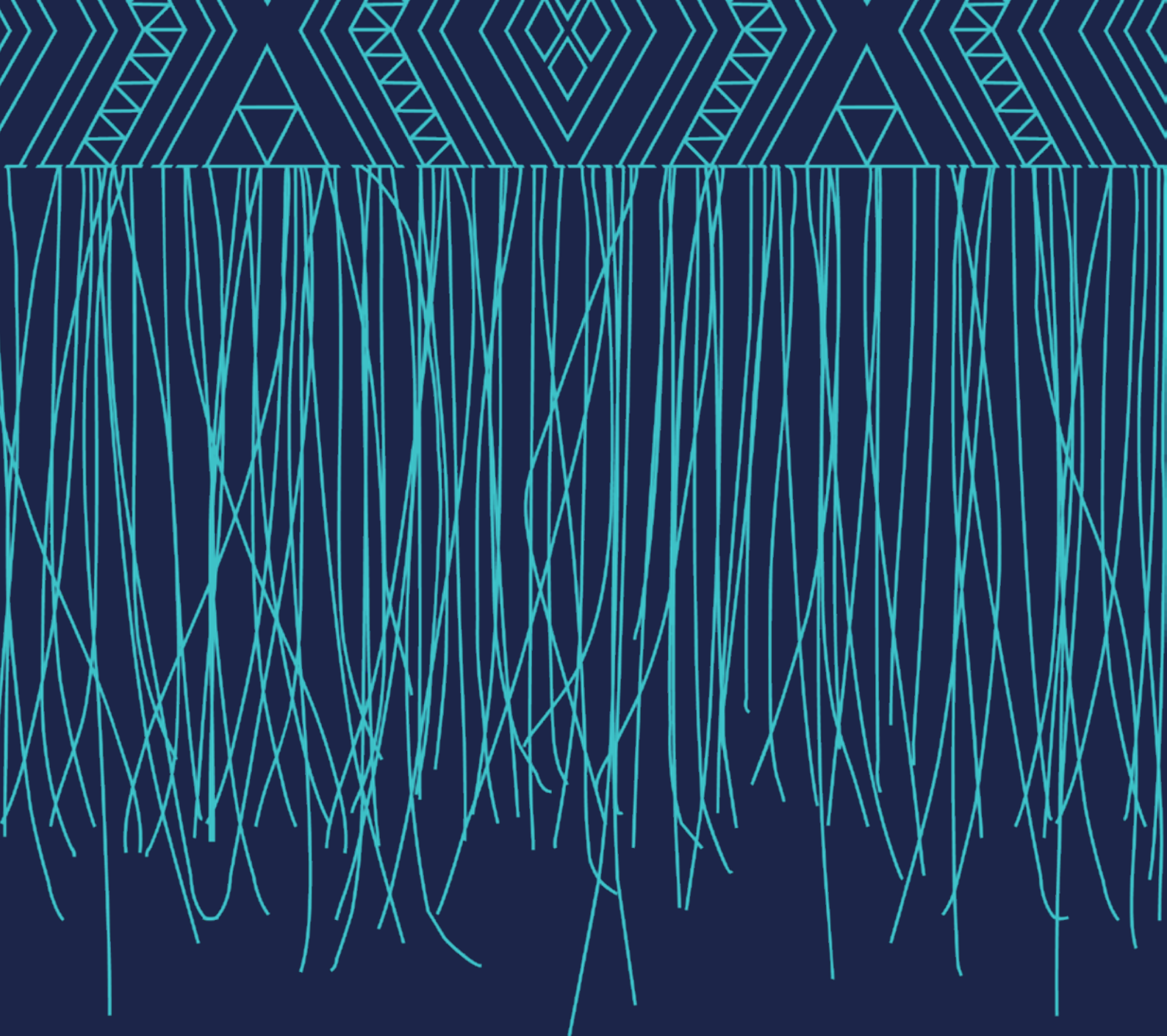
TE ARATIATIA – CULTURAL COMPETENCY

Attendance of the Te Aratiatia education by staff continued in 2022. Staff participants included Midwives, Nurses, Doctors and Managers. Denis Grennell expertly facilitated the teaching sessions, taking place over zoom.

The sessions covered:

- Western epistemology and Mātauranga Māori
- Ngā Āria o Te Ao Māori- Māori World View
- Comparing the Texts of Te Tiriti
- Hikoia ngā Tapuwae o ngā Tūpuna – A historical Treaty timeline
- Identity and Culture

This provided opportunity to gain insight into barriers/reservations that exist for Māori within Health Services. The team was able to develop a fuller understanding of Te Aō Māori, define how to give effect to Te Tiriti commitments within the maternity space and reflect on ways to improve outcomes for Māori.



Te whakapiki ngā
pukenga hauora

Improving Quality
of Care

COMMUNICATION WITH CONSUMERS, LMCS AND HOSPITAL STAFF

Hutt Maternity maintains strong communication lines with consumers via the Hutt Maternity website.

This website contains information on pregnancy, giving birth and caring for pēpē. A Covid-19 information page is available so that families have a source for the most up to date information available regarding Covid-19 restrictions, and helpful links and advice around Covid-19 in pregnancy.

Hutt Maternity uploads current policies and guidelines on this website so that consumers can access this information.

<https://www.huttmaternity.org.nz/>

The recommencement in 2022 of the LMC interface meetings offers a conduit for information

and feedback between LMCs and Midwifery Managers.

Monthly meetings provide a regular forum for LMCs to communicate with each other as well as Managers. Concerns can be voiced and addressed in a safe environment. Meetings are offered both in person and via zoom.

Regular staff newsletters are circulated on a fortnightly basis to hospital employed staff and LMCs. New policies and guidelines are disseminated to staff in a number of formats, including updates via the newsletters and electronic links.

Printed copies of all new and revised policies and guidelines are available both on the ward and in the MAU for staff to read and familiarise themselves with the content.

GAP REPORT

GAP is a programme designed by the Perinatal Institute to improve detection of small for gestational age (SGA) babies. It has been linked to increased SGA detection, and a decrease in stillbirth in the UK (Hugh et al, 2021). <https://www.perinatal.org.uk/GAP/NZ>

For each pregnancy a customised growth chart (GROW) is generated which takes into account ethnicity, age, BMI, number of previous births, birth weights of previous babies and calculates a “term optimal weight” (TOW) for this current pregnancy. The chart calculates and plots 5th, 10th, 90th and 95th centiles allowing for detection of small for gestational age, large for gestational age and slowing of growth based on estimated fetal weights from ultrasound scanning.

Table 1: GAP Data 1 January to 31 December 2022

DESCRIPTION	NUMBER	PERCENTAGE	NATIONAL GAP USER AVERAGE
Number of completed records: (The pregnancy had a GROW chart which was linked to a customised birth weight centile when the baby was born)	1598	100%	
Number of babies born SGA:(< 10 th customised birthweight centile)	242	15.7%	14.0%
Number of babies born <3 rd centile (severely SGA)	61	3.9%	4.7%
Antenatal detection of SGA for babies with weight < 10 th centile		43.9%	42.8%
Antenatal detection of SGA babies with weight < 3 rd centile		61.7%	63.4%

MATERNITY EARLY WARNING SCORE (MEWS)

The Maternal Morbidity Working Group (MMWG) developed a nationally consistent standardised approach to recognising and responding to the acute deterioration of pregnant or recently pregnant inpatient women/pregnant people. The MMWG worked in collaboration with key stakeholders to develop a system that is fit for purpose and operates effectively in the Aotearoa, New Zealand maternity setting. The MMWG recommended DHBs adopt and implement the MEWS vital sign chart for all pregnant or recently pregnant (within 42 days) inpatient people.

In association with the Health Quality & Safety Commission (HQSC), DHB were encouraged to implement the MEWS vital signs chart and early warning score. We know that abnormal vital signs in pregnant people differ from non-pregnant adults and the Adult Early Warning Score (EWS) is not appropriate in pregnancy.

The aim of the MEWS is to reduce:

- Harm through using a consistent process across the country
- Duplication of effort across multiple DHBs
- The number of pregnant and recently pregnant people admitted to intensive care units (ICUs) and high dependency units (HDUs)
- The length of stay of pregnant and recently pregnant people in ICUs, HDUs and the maternity service

Hutt Valley DHB introduced MEWS in 2020. MEWS use is recommended in all wards for pregnant or recently pregnant inpatient care and a MEWS score is required to be calculated prior to transfer to wards from acute areas e.g. ED or Operating Theatre.

We continue to complete ongoing audits of MEWS completion, escalations and ICU admissions. This audit information is included in the MQSP quarterly reporting to Te Whatu Ora.

NEWBORN OBSERVATION CHART/ EARLY WARNING SCORE (NOC/NEWS)

In Aotearoa, New Zealand Early Warning Scores (EWS) for Adults, Paediatrics (PEWS: Paediatric Early Warning Score) and Maternity (MEWS: Maternity Early Warning Score) are being introduced. Early warning systems for newborn infants have been developed in many countries, with the recognition that there are often subtle and non-specific clinical signs that can progress to rapid deterioration in the newborn (ref – Mortensen, Henrik & Ulriksen et al 2017).

The Newborn Observation Chart (NOC) is a vital signs chart, which will standardise the initial assessment and care of all newborns in New Zealand. The Newborn Early Warning Score (NEWS) was developed to assist with the early recognition of clinical deterioration of infants who are at risk, with the aim of improving outcomes for these infants and to help detect and reduce the severity of Neonatal Encephalopathy (NE).

Newborns with recognised risk factors are at a higher risk of neonatal complications (such as hypoglycaemia) and will require more frequent and more extensive assessment and observation. The NOC/NEWS chart provides nationally consistent risk identification and suggested frequency of assessment for these babies.

In association with the ACC NE Taskforce, Hutt Valley DHB implemented NOC/NEWS charts into the postnatal ward in 2021. Completion of a NOC/NEWS chart is required for every newborn and a score calculated to determine if escalation for further paediatric medical review is required.

As per the ACC requirement, Hutt Valley DHB completed 6 months of auditing NOC/NEWS use and escalations in February 2022.

How to recognise and treat neonatal encephalopathy without delay

Every year in Aotearoa/New Zealand, around 67 babies are diagnosed with neonatal encephalopathy (newborn brain injury). If not treated within the right timeframe, neonatal encephalopathy may result in permanent lifelong brain injury. The best treatment is body cooling as soon as possible.



Here's what you can do as a health practitioner, and remember to keep whānau involved at all stages:

1

Recognise

2

Communicate

3

Cool

Consider neonatal encephalopathy:

- baby requiring resuscitation at birth
- low Apgar score at birth
- hyperalert or lethargic, weak or absent suck.

NEWS (newborn early warning score):

- cord gases/lactate.

Timely referral is crucial.

- Discuss your concerns immediately with a colleague.
- Escalate by consulting with the neonatal team.
- Arrange early transfer for ongoing neonatal care.

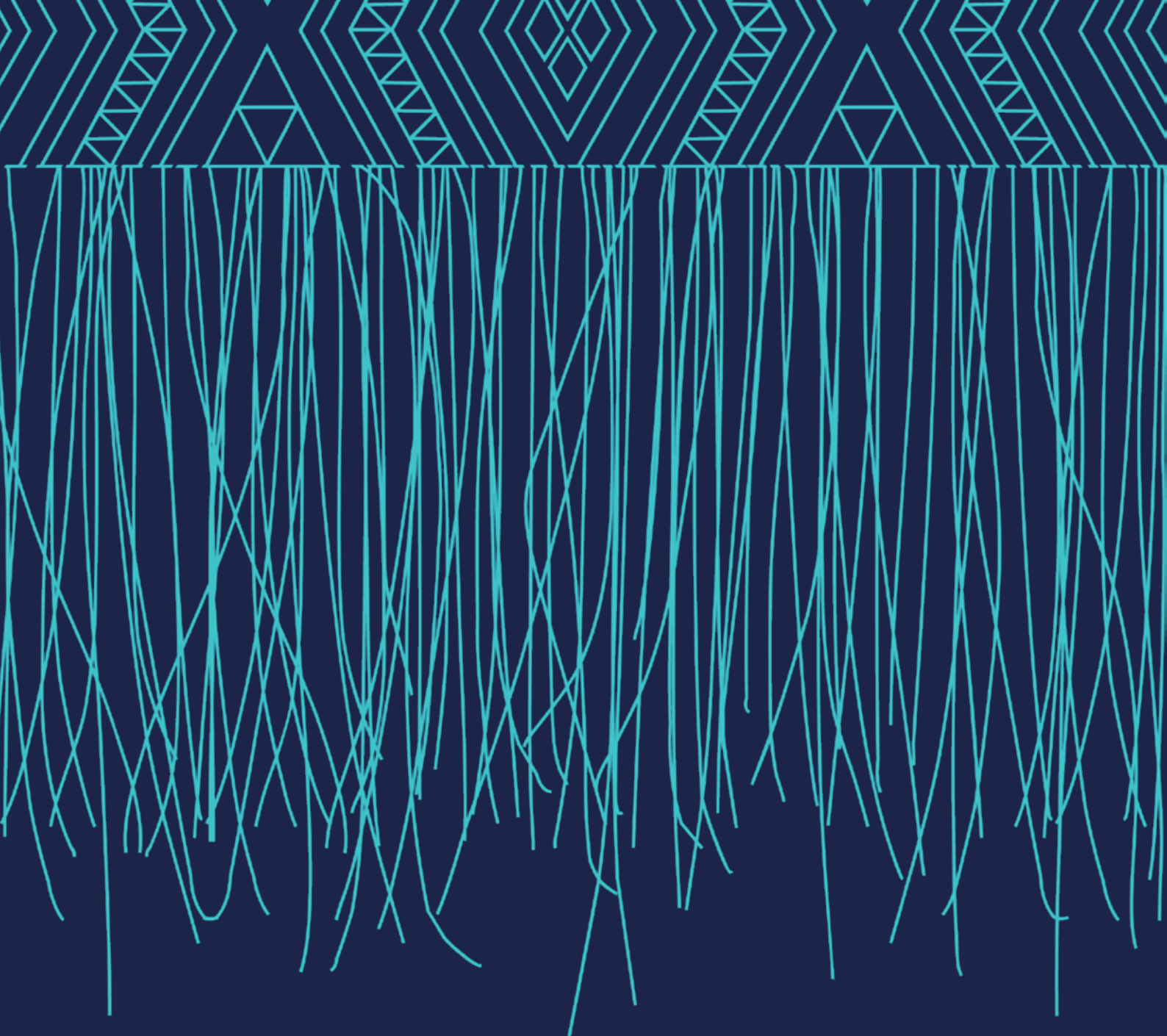
Provide option to whānau for placental histology

DON'T DELAY

Cooling to reduce brain damage ideally needs to start within six hours of birth.

COOL EARLY.





Te kounga me te
haumaru o te taurima
wāhine hapū

Maternity Quality
and Safety

MATERNITY QUALITY AND SAFETY PROGRAMME

The Hutt Valley Maternity Quality and Safety Programme continues to actively review and improve the quality and safety of maternity services for women, pregnant people, babies and their whānau in the Hutt Valley.

The Maternity Quality and Safety Programme is a national programme that establishes and builds upon national and local maternity quality improvement activities. It seeks to ensure the highest possible safety and best possible outcomes for all pregnant people and babies.

This report is underpinned by the New Zealand Maternity Standards (New Zealand Ministry of Health, 2011), which are overseen by the National Maternity Monitoring Group (NMMG).

STANDARD ONE: Maternity services provide safe, high quality services that are nationally consistent and achieve optimal health outcomes for all pregnant people and babies.

STANDARD TWO: Maternity services ensure a person centred approach that acknowledges pregnancy and childbirth as a normal life stage.

STANDARD THREE: All pregnant people 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 pregnant people.

The role of the Maternity Quality & Safety Programme is to:

- Assess and report on our performance over the previous year, including implementation of recommendations from the National Maternity Monitoring Group (NMMG) and the Perinatal and Maternal Mortality Review Committee (PMMRC).
- Provide information about the quality improvement work underway in the Hutt Valley area for pregnant people and their whānau living and birthing in our district as well as the maternity workforce.
- Provide the Ministry of Health with the contractually required information as set out in Section 2 of the Maternity Quality Safety Programme (MQSP) Crown Funding Agreement Variation.
- Demonstrate Hutt Maternity's self-audit against the New Zealand Maternity Standards.
- Provide feedback to the NMMG on their recommendations.
- Benchmark against New Zealand Maternity Clinical Indicators. Provide a monthly update of performance to the MQSPGG and Hutt Valley Executive Leadership.
- Maintain Hutt Maternity's progress towards meeting the objectives of the MQSP 3 year roadmap developed in 2021.

- Describe the work planned to improve the quality and safety of maternity services delivered in the 2022 period.

In 2022 the MQSP programme continued with its commitment to strengthen the collaborative multidisciplinary team approach to service provision, including the voice of consumers and an equity based approach at all levels of service planning.

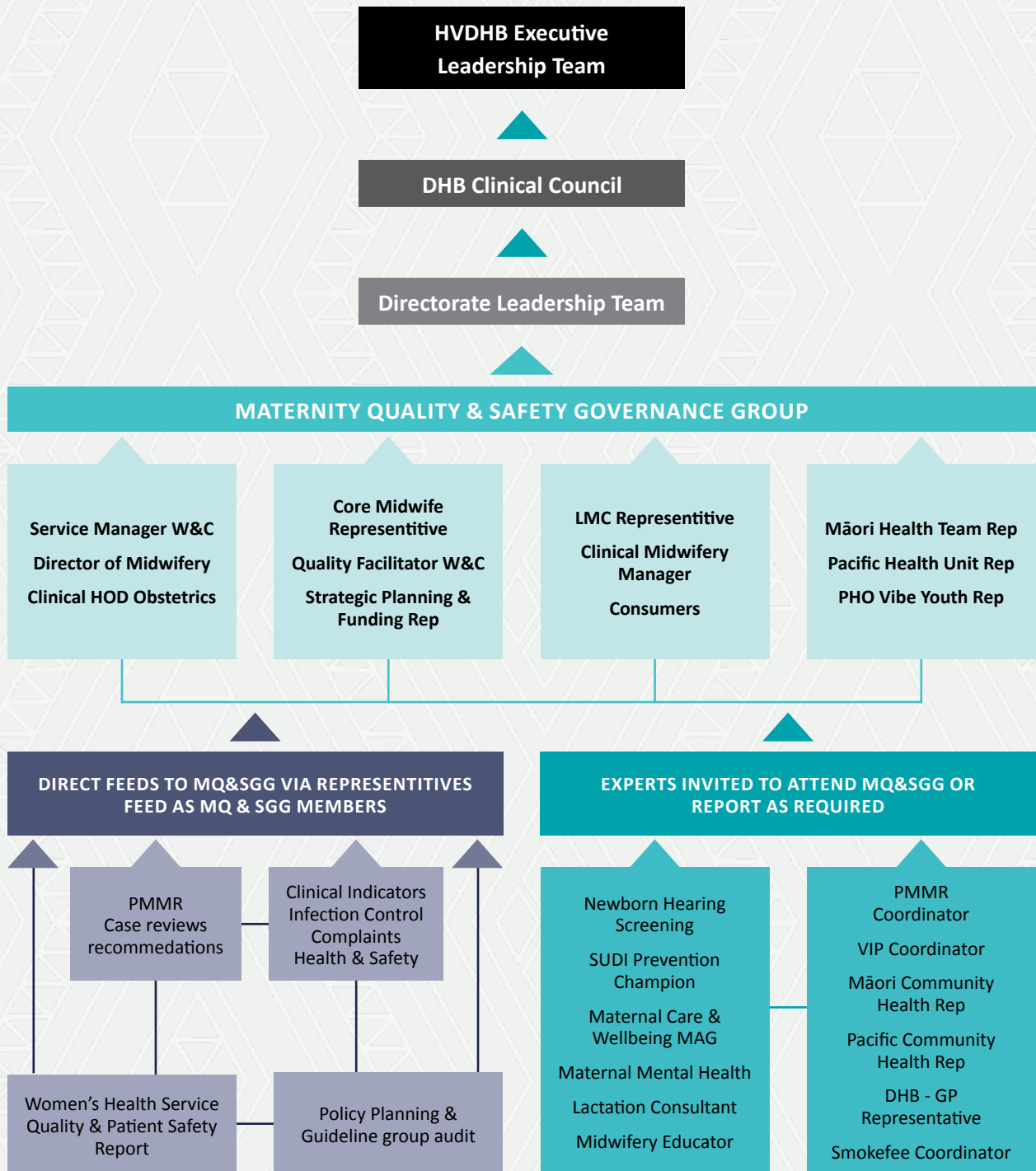
Planning commenced on combining the Maternity Quality & Safety Programme Governance Group (MQSPGG) as a district wide body providing governance and oversight of the MQSP programme across the Capital, Coast and Hutt Valley district.

MQSPGG membership includes representation across a wide cross-section of maternity and allied service providers and other key stakeholders. This governance group ensures that systems are in place to enable clinicians and managers to share responsibility and accountability for patient safety, to minimise risks to pregnant people and babies and to continuously monitor and improve the quality of clinical care provided.



HUTT VALLEY DHB MQSP GOVERNANCE STRUCTURE

MATERNITY QUALITY AND SAFETY PROGRAMME STRUCTURE 2022




MQSP ACHIEVEMENTS 2022

MATERNITY WELLBEING PACKS

In January 2022, MQSP introduced “Maternity Wellbeing packs” on the maternity ward. These packs contain a variety of toiletry and personal items designed to be given to women/pregnant people who arrive on the ward in emergency situations without being able to bring their own personal items with them.

In these circumstances, women/pregnant people and their whānau are often experiencing great anxiety. By supplying these few items, we aim to provide them some dignity and strive to relieve some of the stress involved where we can.

With grateful thanks to Tui Balms and other suppliers for the kind donations of their products.



Maternity Wellbeing Packs

*Whakataka te hau ki te uru
Whakataka te hau ki te tonga
Kia mākinakina ki uta
Kia mātaratara ki tai
E hī ake ana te atakura
He tio, he huka, he hau hū
Tīhei mauri ora!*

Translation:

*Cease the winds from the west, cease the winds from the south
Let the breeze blow over the land, let the breeze blow over the ocean
Let the red tipped dawn come with a sharpened air.
A touch of frost, a promise of a glorious day*

I will love the light for it shows me the way, yet I will endure the darkness for it shows me the stars — Og Mandino



TE WAI BEREAVEMENT PROCESS

In 2022 Capital, Coast introduced Te Wai trolleys in their maternity unit. Te Wai is to honour the Māori traditional practice of using water when someone passes away. Te Wai represents the significance of water as the source of life and spirituality. In this context, Te Wai signifies the ebbs and flows of one's life mimicking the natural flow of water and the ocean, linking people and the environment together as one. In the end, we become part of the ever-flowing waters of life.

Introducing Te Wai supports this particular tikanga practice, making it accessible for when a bereavement has occurred. The Te Wai trolleys are available for use when, or if, whānau wish. Having water to wash over your hands or to cleanse yourself when leaving a space with a tūpāpaku (deceased person) in it, is normal practice in Te Ao Māori.

The rationale behind this is to remove the tapu (sacred) of one area where there is a tūpāpaku, and safely enter into the next area that is noa (not sacred).

Hutt Valley maternity ward also intends to introduce purpose built trolleys to facilitate this tikanga practice. In 2022, a working group was formed to design and commission two trolleys for this use.

Hutt Maternity has been donated two beautiful glass water bowls for the trolleys with thanks to Chaplain Kathryn Van Woerkom for organising this kind donation.

The working group has approached a local Hutt Valley artist to produce carvings for the top of the trolley to hold the water bowls. It is expected that the trolleys will be in use in 2023.

SEPSIS BUNDLES

Obstetric sepsis is the second most common cause of direct maternal death in New Zealand, only behind amniotic fluid embolism. Non-obstetric sepsis is a leading cause of indirect maternal death. Sepsis is also a very common cause of severe acute maternal morbidity leading to admission to an intensive care unit or high-dependency unit.

The Maternal Morbidity Working Group (MMWG) has produced national sepsis guidance, including the 'sepsis 6+2 tool'.

In their Second Annual Report the MMWG recommended that all DHBs establish septic bundle kits to address human factors in the early diagnosis and treatment of sepsis.

The MMWG recommends DHBs:

- a. Establish septic bundle kits to address human factor components, such as stress in high-acuity settings, within the next 18 months. The kit should include all requirements of the sepsis 6 + 2
- b. Consider establishing clinical pathways across primary and secondary/tertiary care to enable earlier recognition and treatment, while waiting for nationally consistent guidelines to be developed.

Rationale: Care bundles and clinical pathways (e.g. Map of medicine pathways) are pre-established processes that reduce the need for individual decision-making and clinical judgement in complex environments. They help to reduce human error and speed up care and treatment in time-critical situations e.g. The diagnosis of sepsis in pregnancy.

<https://www.hqsc.govt.nz/assets/Our-work/Mortality-review-committee/PMMRC/Publications-resources/MMWGAnnualReport2018.pdf>

Hutt Valley established sepsis bundles together with a localised sepsis pathway in 2022. The bundles contain all equipment and medication required for the early diagnosis and treatment of suspected maternal sepsis within the first hour. Bundles are located in the Maternity Assessment Unit, Birthing Suite and the Maternity ward. The Sepsis pathway is widely circulated across the hospital and available on the intranet.

Maternal Sepsis

Know the sepsis 6+2 to save lives

KNOW THE SIGNS

For women who are pregnant or have recently been pregnant, consider sepsis if any of these signs are present



Temperature
 $\geq 38^{\circ}\text{C}$ or $< 36^{\circ}\text{C}$

Shivering, fever, or very cold



Altered mental
state or behaviour

Confusion or disorientation



Respiratory rate
 ≥ 25 breaths/min

Short of breath



Heart rate
 ≥ 100 beats/min

High heart rate



Systolic blood
pressure
 < 90 mmHg

Clammy or sweaty skin



New onset
of pain

Extreme pain or discomfort

KNOW WHAT TO DO

Start maternal sepsis pathway and maternity vital signs chart (MEWS)

Contact the DHB Obstetric Registrar (on-call), or consider

- In hospital - call 777 obstetric emergency
- In the community - call 111 emergency ambulance transfer

TAKE 3

- Take appropriate cultures
- Measure lactate
- Measure urine output

GIVE 3

- Give IV antibiotics
- Give a fluid challenge
- Give high-flow oxygen

CONSIDER 2

- Assess fetal state and consider delivery or evacuation of retained products of conception
- Consider thromboprophylaxis

ACUPUNCTURE CLINICS

Historically Hutt Valley has provided a “free” acupuncture in pregnancy clinic in conjunction with the New Zealand School of Acupuncture and Traditional Chinese Medicine (NZSATCM) for pregnancy related conditions, malposition and pre-labour treatments.

After a change of management of the NZSATCM, the existing acupuncture clinic was discontinued. The provision of acupuncture services has been a loss for our birthing population, in particular those that cannot afford private acupuncture treatment.

This led to an approach to the 2DHB Chief Executive by personal email from Hutt Valley Consumer’s that endorsed the benefits of acupuncture in pregnancy and the use of acupuncture to avoid medical intervention. Response from the Chief Medical Officer at Hutt Valley approved use of alternative treatments if carried out by appropriately trained Health professionals.

There are a number of studies published in this area with varying results. Both local and international studies do verify that providing pre-birth acupuncture has a positive effect on assisting women to have a spontaneous vaginal birth. (Betts & Lennox, 2004). (Harper et al, 2009). (Lokugamage et al, 2020).

MQSP proposed to re-establish a clinic providing acupuncture in pregnancy and pre-birth treatments free of charge, to determine if this would increase rates of spontaneous labour and decrease the induction of labour rate.

In August 2022, working in conjunction with an enthusiastic and passionate acupuncturist, Leonie Kueh, we re-opened an acupuncture in pregnancy clinic located within Hutt Hospital weekly each Friday.

This has continued to be a popular option for women/pregnant people, with weekly clinics fully booked.



Free acupuncture in pregnancy clinic at Hutt Hospital



Acupuncture can help with

- nausea
- morning sickness
- rib pain
- back pain
- pelvic pain
- anxiety
- depression
- mess
- position of baby
- high blood pressure
- labour preparation
- induction of labour

Book your appointment
call **0800 488 628** and select Option 6

The in-pregnancy clinic is held at Suite 2, Outpatients Clinic, Ground Floor, Heretaunga Block. Check in first at Main Outpatients by the main High Street entrance. Open Friday from 9am to 3.35pm

Te Whatu Ora
Health New Zealand
Capital, Coast and Hutt Valley

PERINATAL ANXIETY & DEPRESSION AOTEAROA (PADA)

MQSP was able to support two Hutt Valley Midwives to attend Waioira Whaea, Māori Mental Health Hui hosted by PADA and held at Rotorua in October 2022. This was a 2-day Hui of 100+ attendees from throughout Aotearoa.

There were a wide range of speakers sharing expertise around Te Ao Māori and the special relationships between hapū māmā and their Midwives.

The Midwives attending from Hutt Valley gave a presentation to the MQSP Governance Group around their experience and learnings from the Hui.

As members of the Hutt Valley Community Midwife Team, the attendees have been able to incorporate their learnings into their practice and continue to look for future opportunities to incorporate tikanga in their model of care.



Midwives Paula Pila, Diana Valentine and Jenni Crowley outside the Tangatarua marae in Rotorua.

JOAN DONLEY MIDWIFERY RESEARCH FORUM

As part of the Crown Funding Agreement between Hutt Valley and MOH, MQSP was able to support Nicole Anderson (MQSP Coordinator) to attend the 10th Biennial Joan Donley Midwifery research forum in November 2022.

The forum provides the opportunity for midwives, researchers and others to share thoughts, experiences and knowledge based on current research, audit data and postgraduate studies on topics relating to midwifery practice.

Researchers presented many excellent studies covering a range of topics that are grouped below into these main themes:

- Clinical practice
- Effects of the pandemic
- Workforce growth and sustainability
- Indigenous research including growing and supporting a Māori and Pacific midwifery workforce
- Te Ao Māori
- Midwifery relationships and inclusive care.

HEALTH QUALITY & SAFETY COMMISSION (HQSC) IMPROVING TOGETHER: ADVISOR PROGRAMME.

A quality improvement education programme 2022-2023

Professional development was supported by MQSP with the MQSP Coordinator's participation in the HQSC Improving Together: Advisor Programme.

The aim of the Advisor Programme is to develop and expand the quality improvement skills and knowledge required to become an effective facilitator of change. This is achieved by building on prior quality improvement skills and knowledge and extending them to enable participants to lead quality improvement activities in their organisations.

Participants were required to identify a quality improvement project in their organisation prior to commencement of the programme and the HQSC faculty supported participants to lead the project using recognised quality improvement methodologies.

CENTRAL REGION MQSP HUI

Improved collaboration between MQSP Coordinators in the central Region is facilitated by organisation of central Region Hui.

Mid-Central hosted the initial Hui and the majority of MQSP Coordinators in the central Region were able to attend. This provided opportunities for improved networking and projects for wider collaboration were identified.

Ongoing Hui will be hosted at regular intervals and hosting responsibilities shared by the districts within the central Region.

DISTRICT WIDE MQSP WORK PLAN

With the change from 2DHB to Te Whatu Ora Capital, Coast and Hutt Valley district in July 2022, planning commenced on aligning the MQSP projects more closely across the district.

Initial collaboration began on developing a combined district wide MQSP work plan together with a combined MQSP Governance Group with representation across Capital, Coast and Hutt Valley.

PREGNANCY CARE, POLICY, PRACTICE & GUIDELINE GROUP

The Pregnancy Care Policy, Practice and Guideline Group (PPGG) at Hutt Valley has a key role in the development and update of those policies, procedures and guidelines pertaining to pregnancy care, be they from obstetrics & gynaecology or midwifery guidelines, on a regular basis, resulting in quality improvement.

The Group consists of a multi-disciplinary membership including representatives from Midwifery, Obstetrics, LMCs, Consumers, Quality Improvement Advisors and Māori Health.

A robust process is in place to ensure the Groups responsibilities are upheld. These are:

- To provide comprehensive oversight of the policy process and prioritisation of policies, practices and guidelines
- To ensure policies, practices and guidelines that are developed are evidence-based and person-centred
- Acknowledge our roles in maintaining women / pregnant people, children and their supports / whānau as the focus of all improvements and services we deliver
- To ensure an equity lens is applied through all of the policies, practices and guidelines content and processes
- To ensure hauora Māori principles are applied through all of the policies, practices and guidelines content and processes

- To provide effective dialogue between clinicians and management teams to ensure policies, practices and guidelines are developed in alignment with DHB principles
- To provide timely review and updates of audits
- Individual members on the group are responsible for communicating with their representative groups

Where national guidelines exist, Hutt Valley PPPG have adopted these with adaptation to local systems where appropriate.

With the health system change to Te Whatu Ora Health New Zealand, this is likely to lead to an increased number of nationally developed guidelines. Planning has commenced on developing a district wide Policy and Guideline Group to cover the Capital, Coast and Hutt Valley district.

MQSP LINKAGES WITH THE MATERNITY AND NEONATAL STRATEGY PLAN – (MNS PLAN) IMPLEMENTATION PHASE

The MNS Plan moved from the planning stage to the implementation phase in 2022. There were three equity leads recruited to lead work exploring improved models of care for Māori communities, Pacific communities and the Disabled community.

COMMUNITY MIDWIFE TEAM CONSULTATION:

Two design Hui were held with the representatives from the Community Midwife Team, Managers, MQSP, MNS Plan leaders and equity leads to explore new methods of providing community based models of care.

MATERNITY WHAKAWHANAUNGATANGA:

During the CMT Hui, it was identified that improved networking between Hutt Valley CMT and community care providers would enhance continuity of care. A whakawhanaungatanga was organised to provide the opportunity for care providers throughout the Hutt Valley community to meet and share knowledge and resources.

The whakawhanaungatanga was well attended with representatives present from LMCs, CMT, Catalyst Pacific communications, Hapū Māmā and Safe Sleep, Naku Enei Tamariki (NET- Māori, Pacific

and Pakeha branches), Te Whatu Ora Māori Health, Te Whatu Ora Maternal Health Coordinators, MQSP, Pacific Health Service Hutt Valley, Plunket, Parents Centre, Greenstone Doors and Hapū Wānanga.

Feedback from this day was very positive enabling strengthened relationships between maternity services and community care providers.

PACIFIC CULTURAL EDUCATION WORKSHOPS:

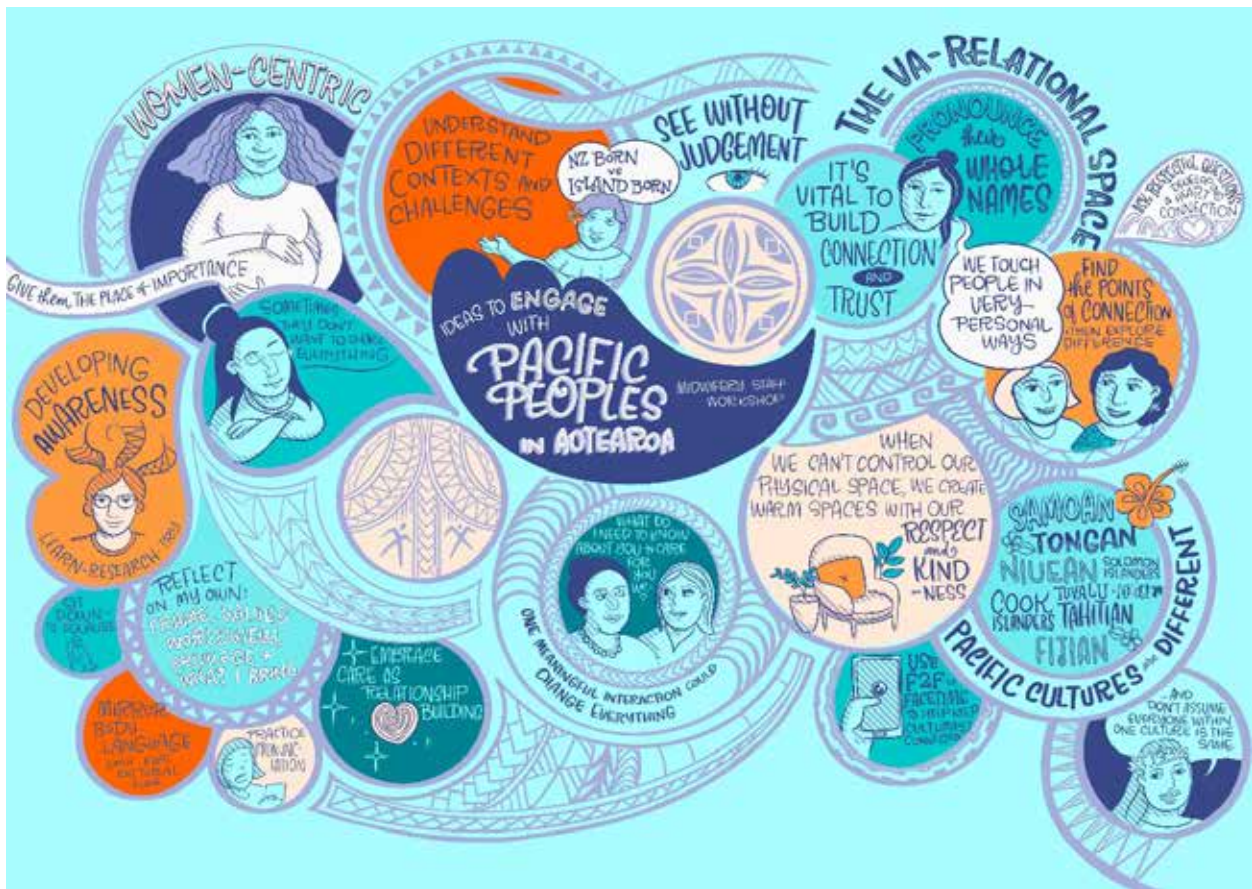
Midwives from CMT in Capital Coast and Hutt Valley, together with Managers, MQSP and care

providers in the Pacific community were invited to attend cultural education workshops.

Workshop presentations included 101 Cultural Education by Cherie Chu-Fuluifaga, First 1,000 days, a one hour session on Pacific nutrition, including use of kava in pregnancy and how to approach Pacific clients for better understanding of their culture and their requirements.

An immediate positive outcome out of this workshop was an increase in referrals to NET Pacific.

The illustration below was commissioned as a visual representation of the learnings from the workshop. Further workshops to build on knowledge gained are planned.



PĒPE ORA

One of the objectives of the MNS Plan was to expand Pēpe Ora information to encompass available services across both the Capital, Coast & Hutt Valley District and the Wairarapa District.

The website content is based around the four pillars of Te Whare Tapa Whā:

- Taha wairua (spiritual health)
- Taha tinana (physical health)
- Taha hinengaro (mental health)
- Taha whānau (family health)

The recruitment of a Maternal Health Coordinator position at Hutt Valley provides a link between maternity services at Hutt Hospital and the community.

Promotion of the website to the community was organised by communication across MNS Plan to Pharmacies, GP Practices and LMC's.

<https://www.wellington.pepeora.nz/>

PROMOTING PRIMARY BIRTH

The MNS Plan included a strategy to increase promotion and resourcing for homebirth. In 2022, this was expanded as a district wide initiative across Capital, Coast and Hutt Valley to deliver a package of support for homebirth, and reduce some of the inequities that currently exist for women/pregnant people choosing to birth at home.

Included were:

- amended booking letters sent to women/pregnant people in the district, to highlight homebirth as an option of place of birth choice for pregnant people and their whānau
- providing funded birth consumables packs for midwives, to enable reliable access of birth supplies
- loan of hospital funded birth pools (including inflation/fill kit, pool liners, and cover) to support the use of water in labour and birth

- loan of transcutaneous electrical nerve stimulation (TENS) machines to increase access to non-pharmaceutical pain relief options suitable for home
- loan of pulse oximetry machines, to allow homebirths to be offered monitoring in the first 24 hours to identify cardiac conditions in neonates – an option only currently afforded to those who birth in hospital
- education aimed at LMCs to increase knowledge and communication strategies to facilitate primary birthing at home.

During late 2022, these strategies came to fruition, following the purchase of homebirth consumables and loan equipment, which include birth pools, TENS machines and pulse oximetry machines.

These are accessed by the community through LMCs, who plan place of birth, pain relief and labour or birth in water during antenatal appointments in the third trimester of pregnancy.

Where a homebirth is planned, birth kits are ordered, and loan equipment requested through a loan agreement between the Te Whatu Ora - Capital, Coast and Hutt Valley and the LMC midwife. LMC midwives maintain responsibility for the equipment, which reduced some identified barriers and potential inequities of access due to the requirement of transport, loan fees and costs associated with bonds on hireage.

While women/people under the care of the Community Midwife Team are unable to choose homebirth facilitated by employed midwives, a Lead Maternity Carer who is able to provide this service can be identified.

Follow-up is expected during 2023 to review community feedback of the service, and usage of the equipment. Wider promotion through the Pēpe Ora website and consumer information is also expected.



OPTIMISING BIRTH INITIATIVE

CAESAREAN SECTION AUDIT FOR ANALYSIS OF CAESAREAN SECTION (CS) RATES AT HUTT VALLEY.

Since 2015 the World Health Organisation (WHO) has proposed the use of the Robson 10 classification (also known as the 10-group classification) as a worldwide standard for assessing monitoring and comparing CS rates both within healthcare facilities and between them.

The system classifies all birthing people into one of ten categories, which are mutually exclusive and together account for all births in the facility. The categories are based on characteristics that are routinely collected in the maternity service (parity, single or multiple pregnancies, previous CS, onset of labour, gestational age and fetal presentation).

Currently Hutt Valley uses “standard primiparae” for reporting of clinical indicators for spontaneous vaginal birth and CS rates, however this is a small amount of our birthing population. Robson 10 allows for the classification and reporting of all births in the facility.

As part of the Optimising Birth Initiative developed in collaboration with Capital & Coast, in 2022 Hutt Valley conducted a CS audit of all CS between 1 July 2021 and 30 October 2021 classifying all

audited births into the Robson 10 classifications. This allows us to determine the optimal area/s to focus resources and provides a measure of progress.

The audit identified that similar to Capital & Coast, people at Hutt Valley having their first baby whether presenting in spontaneous labour or being induced (Robson Groups 1 and 2a) were over represented in CS rates. It was proposed to continue with further analysis into the data and a working party was formed to undertake this.

As one initiative in the Optimising Birth project, Hutt Valley introduced free acupuncture treatment for pre-birth and IOL acupuncture to increase spontaneous labour rates.

Further initiatives proposed include:

- Optimising the birthing environment with provision of primary birthing spaces in the maternity ward refurbishment
- Use of misoprostol for induction of labour, replacing routine use of mechanical balloon catheter or prostin gel induction methods
- Analysis of vaginal birth after caesarean section (VBAC) rates compared to return elective caesarean section rates and introduction of measures to improve VBAC rates.

VOICES OF PEOPLE AND WHĀNAU

MATERNITY QUALITY AND SAFETY

TE MANAAKITANGA Ō TE WHARE TANGATA

Hutt Maternity service welcomes feedback from pregnant people and whānau and provides a variety of methods for this. One of the ways consumers can provide positive feedback either to individuals or staff in general is to complete a Tumeke card.

Once received these cards are given to the staff member receiving the compliment.

I WANT YOU TO KNOW I APPRECIATED IT WHEN YOU

“Helped us patiently with our breastfeeding journey. Thanks for being kind and caring.”

“Amazing services, always kind towards me and my partner. Thank you for everything we appreciate you.”

“We have had the most wonderful care and support to start our journey as parents. We cannot thank you enough for all your care and passion, we will be singing your praises to everyone.”

“You were always kind patient and knowledgeable. You explained things to us, answered our questions and showed us useful tips. But most importantly we liked you being there because you are lovely and a good person. Thank you so much.”

“Supported me with everything. I don’t have all the words to say because you are truly amazing. I am so so thankful that you helped me in every single way. Thank you. I am eternally grateful.”

“Helped me with getting my breastfeeding to a point I am confident I can do it alone. You have made me so comfortable. Thank you.”

“Were all absolutely amazing to us before, during and after the delivery of our baby. Being first time parents we felt supported and were provided excellent information. Everyone has been so friendly and excited for us. Thank you very much to the Hutt maternity team.”

“Took your time with me and made me feel comfortable and safe. Lots of things were new to me as a second time mum but you never made me feel silly for not knowing. Thank you for everything”

“From the moment I met you, you treated us with such kindness that we looked forward to seeing you again, We loved being able to laugh and talk to you. Thank you for making our stay the best ever.”

“Took every moment to make sure I was okay, healthy and if I need anything. You have made my journey with SCBU an amazing time and I will forever remember you. Thank you.”

“Made my partner and I comfortable and reassured her throughout the early stages of her labour. You were awesome. Thank you so much”

NATIONAL INFORMATION AND RECOMMENDATIONS – PMMRC & NMMG

In the 14th annual report of the Perinatal and Maternal Mortality Review Committee (PMMRC) published in 2020 no new recommendations were included.

The Committee highlighted that “while there has been significant work towards implementing recommendations, further priority must be given to them because a number of preventable deaths continue to occur”.

“Importantly, we must all continue to support the work of our colleagues and organisations in owning these responsibilities. Together, we can make the greatest and most valuable impact towards changing the outcomes of women and their babies, families and whanau”.

The PMMRC therefore urged those working within the health system, health organisations and health practitioners, to prioritise and implement the previous recommendations from the PMMRC’s reports to ensure quality and equitable maternal and perinatal care is provided.

Fourteenth Annual Report of the Perinatal and Maternal Mortality Review Committee.

The National Maternity Monitoring Group (NMMG) was established in 2012 as an advisory group to the Director-General of Health, and is funded as part of the Maternity Quality Initiative.

The NMMG provides oversight and review of national maternity standards, analysis and reporting and provides advice to the Ministry of Health (the Ministry) and district health boards (DHBs) on priorities for improvement in maternity services.

The NMMG was created as part of the Maternity Quality Initiative, which is made up of:

- a national Maternity Quality and Safety Programme, including maternity standards and clinical indicators
- revised Maternity Referral Guidelines, which set out processes for transfer of care, including in an emergency
- standardised, electronic maternity information management to improve communication and sharing of health information among health practitioners
- improved maternity information systems and analysis so that there is better reporting and monitoring of maternity services.

National Maternity Monitoring Group Annual Report 2019

MATERNITY CLINICAL INDICATORS

Clinical indicators give an opportunity for DHBs and local maternity stakeholders to identify areas for further investigation and potential service improvement.

The New Zealand Maternity Clinical Indicators show key outcomes for each DHB region, and secondary and tertiary maternity facilities.

Clinical indicators are monitored by comparing data for a defined subgroup of women who are considered to be ‘low risk’. This group is referred to as the ‘standard primiparae’ (SP) group.

The ‘standard primiparae’ represents a woman expected to have an uncomplicated pregnancy. Intervention and complication rates for such women should be low and consistent across all hospitals nationally. Standard primiparae represent approximately 15% of all births but this proportion varies across DHBs.

The table and commentary is based on the clinical indicator results by DHB of residence. The data is available here: <https://tewhatuora.shinyapps.io/maternity-clinical-indicator-trends/>

Hutt Hospital has developed an internal data report based on the above system that enables us to look at our data from the previous year in order to react more responsively, instigating audits and changes in clinical practice. The following page shows results for Hutt Valley as a whole and by each ethnic group, for the year 2022 compared to rates for all of New Zealand in 2020 (last published data from New Zealand Ministry of Health, 2022).

A 'standard primiparae' is defined as 'a woman aged between 20 and 34 years at the time of birth, having her first baby at term (37 to 41⁺⁶ weeks gestation) where the outcome of the birth is a singleton baby, the presentation is cephalic and there have been no recorded obstetric complications that are indications for specific obstetric intervention'.



Table 2: New Zealand Maternity Clinical Indicators 2020, by DHB of residence, showing Hutt Valley ethnicities (2022) compared to the whole of New Zealand.

Clinical indicators: Hutt Valley rate compared to the New Zealand rate*		New Zealand Rate (%) 2020	Hutt Valley Rate (%) 2022	Hutt Valley rates stratified by ethnicity groups				
				Māori Rate (%)	Pacific Rate (%)	Indian Rate (%)	Asian (excl Indian) Rate (%)	European /Other Rate (%)
2	SP who have a spontaneous vaginal birth	62.1	57.2	21.5	10.8	8.7	5.0	54
3	SP who undergo an instrumental vaginal birth	19.2	18.5	15.5	2.2	22.2	4.4	55.5
4	SP who undergo caesarean section	17.6	22.2	24	9.3	20.4	5.5	40.8
5	SP who undergo induction of labour	9.2	9.1	31.8	0.0	31.8	0.0	36.4
6	SP with an intact lower genital tract (no 1st- to 4th-degree tear or episiotomy)	26.7	14.8	35.8	14.3	3.5	0.0	46.4
7	SP undergoing episiotomy and no 3rd- or 4th-degree perineal tear	26.1	33.9	15.7	7.8	18.8	6.2	51.5
8	SP sustaining a 3rd- or 4th-degree perineal tear and no episiotomy	4.3	7.4	21.4	7.2	14.2	7.2	50
9	SP undergoing episiotomy and sustaining a 3rd- or 4th-degree perineal tear	2.1	3.7	0.0	0.0	28.5	0.0	71.5
10	Women having a general anaesthetic for caesarean section	7.8	6.1	29.8	13.5	8.1	8.1	40.5
11	Women requiring a blood transfusion with caesarean section	3.4	1.3	12.5	0.0	12.5	37.5	37.5
12	Women requiring a blood transfusion with vaginal birth	2.4	2.2	33.3	14.2	9.5	9.5	33.3
17	Preterm birth	7.9	7.2	47.8	9.5	7.9	6.9	27.9
18	Small babies at term (37–42 weeks' gestation)	3.0	1.6	40.9	4.5	22.8	9.0	22.8
19	Small babies at term born at 40–42 weeks' gestation	29.6	0.0	0.0	0.0	0.0	0.0	0.0

* We have not reported on indicators 1, 16 and 20 in this report as we do not have current data for these.

WHAT WE ARE NEEDING TO FOCUS ON OVER THE NEXT 3 YEARS

Registrations with LMC in the first trimester.

Standard primiparae who have a spontaneous vaginal birth. Although our rates have increased from 2020/2021 they remain below the national average.

Standard primiparae who undergo an instrumental birth. Our rates of instrumental birth for SP have decreased to below the national average.

Standard primiparae undergoing episiotomy and/or sustaining a 3rd or 4th degree perineal tear. Our rates remain higher than the national average, with a particular focus needed on rates of 3rd and 4th degree perineal tears for wāhine Māori and Indian ethnicities.

Women requiring a blood transfusion with vaginal birth. Our rates for this are now below the national average.

Preterm birth. Our rates of preterm birth have reduced to below the national average; however

remain higher for wāhine Māori over other ethnicities.

Small babies at term (37-42 weeks gestation). Rates are below the national average but higher for wāhine Māori and Indian ethnicities.

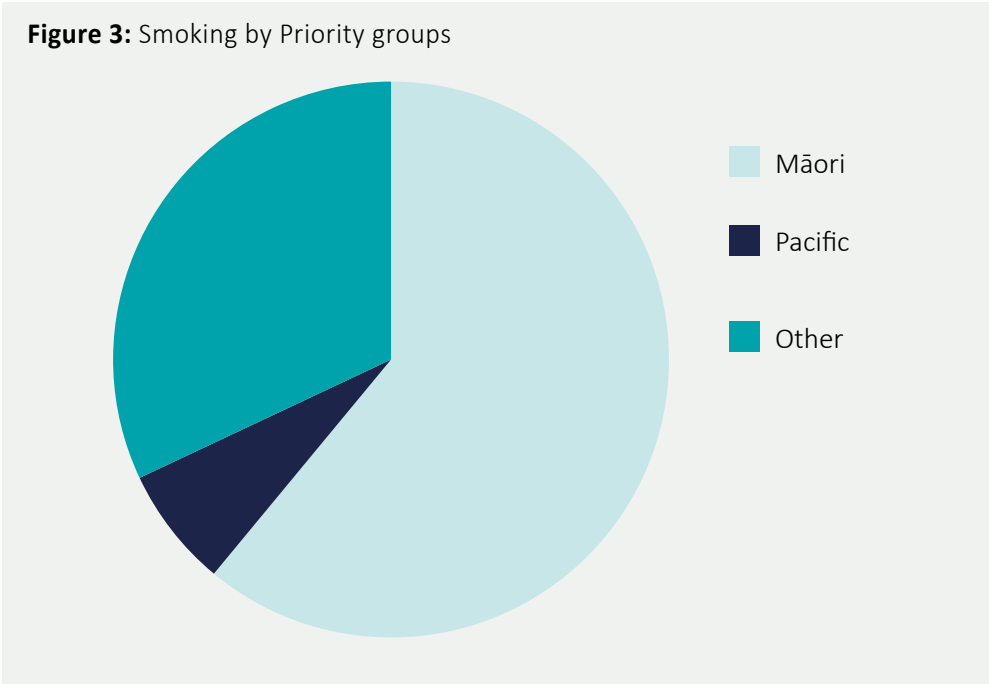
Classification of birthing data into Robson 10 categories and continuing analysis of initiative’s to decrease caesarean section rates.

MATERNAL TOBACCO USE AT BOOKING WITH OUR HOSPITAL FACILITY.

Hutt Valley Districts data collection for maternal tobacco use demonstrates that those of booked to birth at Hutt Hospital in 2022 – 9.6% were current smokers.

As shown below 61% of those smoking were of Māori ethnicity, 7% Pacific and 32% all other ethnicities.

Figure 3: Smoking by Priority groups



ETHNICITY REPORTING

Table 3: Ethnicity Data 2022

Ethnicity	Ethnicity Level 2	2022
Māori	NZ Māori	392
Māori Total		392
Pacific	Cook Island Māori	13
	Fijian	13
	Niuean	5
	Other Pacific Island	1
	Samoan	81
	Tokelauan	6
	Tongan	24
Pacific Total		143
NZ European	NZ European	593
NZ European Total		593
Indian	Indian	171
Indian Total		171
Asian	Asian not further defined	1
	Chinese	27
	Other Asian	36
	Southeast Asian	56
Asian Total		120
Other	African	8
	Latin American/Hispanic	10
	Middle Eastern	12
	Not Stated	1
	Other Ethnicity	2
Other Total		33
Other European	European not further defined	1
	Other European	79
Other European Total		80
GRAND TOTAL		1,532

ADVERSE EVENTS

Adverse events are any ‘event with negative or unfavourable reactions or results that are unintended, unexpected or unplanned’. Adverse events or near misses are reported in an effort to increase patient safety by examining the situation in which the event took place.

A total of 139 reportable events were generated across maternity services during 2022 with both categories for Maternal/Childbirth, and Staffing being the highest.

In addition to the event reporting system, Hutt Maternity also maintains a weekly Trigger Review Group. Trigger Forms are completed when an unexpected outcome occurs during an inpatient event. All completed trigger forms are reviewed by the Trigger Review Group who consist of senior clinicians and plans are formulated which could include nil further action required, systems review, case review or referral on to the Serious Events Review Committee (SERC).

Events referred on to SERC are events which come under the Severity Assessment Code (SAC) rating in the National Adverse Events reporting Policy 2017. SAC 1 and SAC 2 events are those where the patient has incurred permanent or severe but temporary loss of function, or where death has occurred as a result of the event.

A group of Senior Leaders (the Quality and Patient Safety Committee) endorse the review findings and monitor the outcomes of recommendations.

Table 4: Reportable Events

Birth Suite	75
Clinical Care/Service/Coordination	13
Good Catch	1
Infection Control	2
Maternal/Childbirth	35
Staff and Others Health and Safety	10
Staffing	14
MAU	14
Clinical Care/Service/Coordination	3
Facilities/Building/Property	2
Maternal/Childbirth	5
Medication	1
Staff and Others Health and Safety	2
Staffing	1
Post Natal Ward	50
Clinical Care/Service/Coordination	5
Facilities/Building/Property	2
Good Catch	3
ID, Documentation or Consent	1
Infection Control	1
Maternal/Childbirth	25
Medication	4
Patient Falls	3
Safety/Security/Privacy	2
Staff and Others Health and Safety	3
Vascular Access and Parenteral Infusion	1
Grand Total	139

APPENDIX 1 - MQSP ACTION PLAN 2022

This action plan has identified the priority areas for focus in Quality Improvement at Hutt Maternity. A progress report is presented each month to the Maternity Quality & Safety Governance Group and also the Hutt Valley Directorate Leadership Team .

Domain	Initiative	Rationale	Action: December 2022	Expected Outcome	Measure	Timeframe
Consumer engagement and models of care	P1 Embracing Diversity Campaign 3 DHB	Regional campaign to display photographs illustrating 'Diversity' in the Hutt birthing population.	Recruitment commenced	Range of photographs on display	May have to reduce scope due to slow uptake	By end of 2023
	P2 Rainbow Co-design 2DHB	Establish a Group to develop project initiatives across both DHBs to improve the experience for the rainbow community	Initial planning commenced	Group to identify and manage projects	Projects implemented with specific Rainbow community requirements	Impacts of Covid-19 and other commitments delay to 2023
	P3 Primary Birth – Acupuncture clinic	Re-establish free acupuncture provision for the Hutt birthing population	Trial of acupuncture clinic commenced	Re-establish free acupuncture in pregnancy clinic at HVDHB	Audit clinic data to measure improvement of IOL& C/S rates	Audit completed by Q4 2023 Business plan to continue Clinic
	P4 Increase early Registration for Māori & Pacific. Explore models of care for <20 year olds	Explore avenues to increase early registration specifically for Māori, Pacific and Youth. Improve community engagement	Data collection required Proposal for District wide implementation Insight work required Insight work required	Increase in rates of LMC registration in 1st trimester for Māori, Pacific and Youth.	Monitor gestation at registration data collected by HVDHB by ethnicity Improved community engagement with Youth	Data monitoring system in discussion 2023 Electronic data collection with maternity system implementation of Badgernet
	P5 Explore Models of care for Indian Women	PMMRC recommendation to co-design models of care to meet the needs of Indian women	Proposal for District wide implementation	That Indian consumers are engaged with care provision	Monitor outcomes by ethnicity to address issues	Initiate by end of Q3 2023

Domain	Initiative	Rationale	Action: December 2022	Expected Outcome	Measure	Timeframe
Reporting/Data development	P6 Caesarean section Audit	HVDHB identified as outlier for caesarean section rates.	Audit completed Categorised into Robson 10	Proposals for methods of reducing avoidable caesarean sections	Service to look at audit information in line with Robson 10 project	2022-2023
	MOH Quarterly reporting	Ongoing – trends reported to MQSGG	Q2 2022 report submitted			Ongoing
Cultural Competency	MQSP Annual report	Ongoing	2020/21 report submitted March 2022			
	Ongoing Education provision & implementation into practice	MMWG – use of HEAT tool to assess services for the impact of health equity PMMRC – Cultural Competency Education provision.	MHT and PHU representation on MQSGG Hukatai consultants engaged to provide education	More input on MQSGG From Māori & Pacific perspective Staff access to ongoing Māori and Pacific cultural education	Implement ongoing CC training opportunities. Service implements measures to address inequities.	Ongoing Regular CC training provision in 2022
Clinical Pathways / Forms / Audits & Reporting	Policy Procedure & Guideline Group: Document Control	Out of date policies identified as risk for serious adverse events. Establishment of PPG group for oversight of robust evidence based policies & guidelines	MQSP working with Document Control.	All policies & guidelines up to date	Regular monitoring of out of date guidelines & plan for updates	Ongoing – with move to District Wide Document Control and alignment of policies
	MEWS	NMMG Recommendation Implemented December 2020.	Monitoring Auditing			Ongoing
Clinical Pathways / Forms / Audits & Reporting	NOC/NEWS	HQSC/ ACC National Project	Audit completed February 2022	Use of NEWS to be well established on ward	Audit submitted to ACC	Establishment of NEWS working Group by ACC
	Pathway for Placental Implantation abnormalities	No separate policy at HVDHB – to be discussed at PPG.	Capital, Coast developed guideline	Adaptation of guideline to District Wide with local pathways	To be discussed at PPG	Alignment in 2023
	Cortico-steroid administration < 34 weeks gestation	PMMRC recommendation	Audit completed	Analyse steroid administration to determine if equitable	Recommendations to Policy changes submitted to PPG	Ongoing

APPENDIX 2 – Abbreviations and definitions

Abbreviations

2 DHB	Capital & Coast, and Hutt Valley DHBs
ACC	Accident Compensation Corporation
ACMM	Associate Clinical Midwifery Manager
BF	Breast Feeding
BFHI	Baby Friendly Hospital Initiative
BMI	Body Mass Index
CC	Cultural Competency
CCDHB	Capital and Coast District Health Board
CMM	Clinical Midwifery Manager
CMT	Community Midwifery Team
CTG	Cardiotocograph
CPAS	Child Protection Alert System
CS	Caesarean Section
DHB	District Health Board
DNA	Did not attend
ED	Emergency Department
FSEP	Fetal Surveillance Education Programme
FTE	Full Time Equivalent
GAP	Growth Assessment Protocol
GP	General Practitioner
GROW	Gestational related optimal weight
HEAT	Health Equity Assessment Tool
HDU / ICU	High Dependency Unit / Intensive Care Unit
HCG	Human Chorionic Gonadotropin
HDC	Health and Disability Commission
HIE	Hypoxic Ischaemic Encephalopathy
HELLP	Haemolysis, Elevated liver enzymes, Low platelet count
HQSC	Health Quality and Safety Commission
HVDHB	Hutt Valley District Health Board
IOL	Induction of labour
LARC	Long-acting reversible contraception

LMC	Lead Maternity Carer
MAU	Maternity Assessment Unit
MDT	Multi-Disciplinary Team
MEWS	Maternity Early Warning Score
MOH	Ministry of Health
MQSP	Maternity Quality & Safety Programme
MQSPGG	MQSP Governance Group
NE	Neonatal Encephalopathy
NMMG	National Maternity Monitoring Group
NOC/NEWS	Newborn Observation Chart/Newborn Early Warning Score
NZ	New Zealand
PBU	Primary Birthing Unit
PCEA	Patient Controlled Epidural Anaesthesia
PCOA	Patient Controlled Oral Analgesia
PMMRC	<i>Perinatal and Maternity Mortality Review Committee</i>
PMT	Primary Midwife team
PPE	Personal Protective Equipment
PROMPT	Practical Obstetric Multi-Professional Training
RANZCOG	Royal Australian and New Zealand College of Obstetrics & Gynaecology
RM	Registered Midwife
RMO	Registered Medical Officer
SCBU	Special Care Baby Unit
SGA	Small for Gestational Age
SMMHS	Specialist Maternal Mental Health Service
SMO	Senior Medical Officer
SP	Standard Primiparae
SUDI	Sudden Unexplained Death in Infancy
VIP	Violence Intervention Programme

Definitions

Badgernet	An electronic maternity system which follows the whole course of a person's care in pregnancy
Body Mass Index	A measure of weight adjusted for height
Dashboard	A modern analytics tool to monitor healthcare KPIs in a dynamic and interactive way
Deprivation	A lack of the types of diet, clothing, housing and environmental education, working and social conditions, activities and facilities which are customary in a society
Domicile	A person's usual residential address
Ethnicity	The ethnic group or groups that people identify with or feel they belong to
Jadelle	A hormone releasing sub-cutaneous implant
Jaydess	A hormone releasing intra-uterine device
Kairaranga	Traditional weaver
Karakia	A prayer
Kaupapa	Topic, policy, matter for discussion, plan, purpose, scheme, proposal, agenda, subject, programme, theme, issue, initiative.
Mirena	A hormone releasing intra-uterine device
Misoprostol	A synthetic prostaglandin medication used to induce labour
Morbidity	The consequences and complications (other than death) that result from a disease
Multi-disciplinary Team	A multidisciplinary team involves a range of health professionals working together to deliver comprehensive health care
Nulliparous	Has not given birth previously
Pākehā	New Zealander of European descent
Parity	The number of previous pregnancies that were carried to 20 weeks
Pēpi/Pēpē	A baby or infant
Robson 10	A classification system by which all perinatal events and outcomes can be compared
Tamariki	Children
Te Ao Māori	Māori worldview
Te Whatu Ora	Change in New Zealand health system responsibilities from individual DHBs to Te Whatu Ora Health New Zealand
Tertiary	Specialised consultative health care, usually for inpatients and on referral from a primary or secondary health professional
Waha kura	A woven flax bassinet for infants up to 5-6 months of age
Wānanga	Teaching and research that maintains, advances, and disseminates knowledge and develops intellectual independence
Whānau	Extended family, family group, a familiar term of address to a number of people

APPENDIX 3 – DATA SOURCES

The information in this report has been sourced from the following database systems:

- Hutt Valley Business Intelligence and Analytics Unit
- Hutt Valley patient management system
- HVDHB Maternity Clinical Indicators (MOH)
- MOH Report on Maternity web tool
- MOH Qlik Sense Hub

APPENDIX 4 – REFERENCES

Health Quality & Safety Commission New Zealand, 2017. National Adverse Events Reporting Policy 2017. [Online]. Available at:

<https://www.hqsc.govt.nz/resources/resource-library/national-adverse-events-reporting-policy-2017/>

Hutt Maternity Annual Report 2020/2021

<https://www.huttvalleydhb.org.nz/about-us/reports-and-publications/hutt-maternity-annual-report/>

Hutt Maternity Website

<https://www.huttmaternity.org.nz/>

Hutt Valley District Health Board, Annual Report 2020-2021.

<https://www.huttvalleydhb.org.nz/about-us/reports-and-publications/annual-report/>

Ministry of Health. 2011. New Zealand Maternity Standards: A set of standards to guide the planning, funding and monitoring of maternity services by the Ministry of Health and District Health Boards. [Online]. Available at:

<https://www.health.govt.nz/system/files/documents/publications/nz-maternity-stds-sept2011.pdf>

Ministry of Health, 2022. New Zealand Maternity Clinical Indicators: background document. [Online]. Available at:

<https://www.health.govt.nz/publication/new-zealand-maternity-clinical-indicators-2018>

Ministry of Health, 2022. New Zealand Maternity Clinical Indicators. [Online]. Available at:

<https://www.health.govt.nz/nz-health-statistics/health-statistics-and-data-sets/new-zealand-maternity-clinical-indicators-series>

Ministry of Health, 2022. Report on Maternity web tool. [Online]. Available at:
<https://www.health.govt.nz/publication/report-maternity-web-tool>

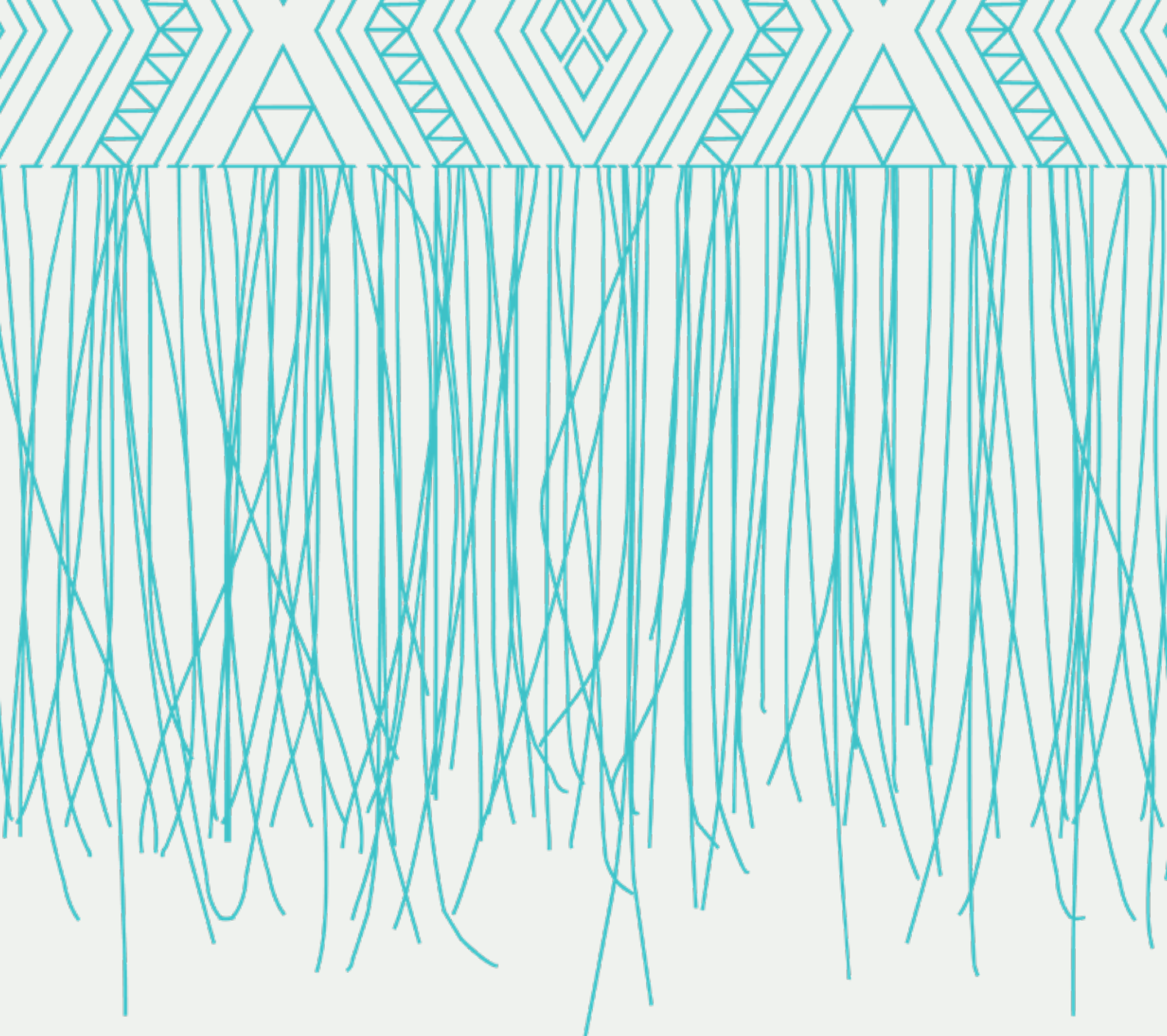
Pēpe Ora
<https://www.wellington.pepeora.nz/>

Perinatal & Maternal Mortality Review Committee, 2019. Fourteenth Annual Report of the Perinatal and Maternal Mortality Review Committee: Reporting mortality and morbidity 2020. [Online]. Available at:
<https://www.hqsc.govt.nz/resources/resource-library/fourteenth-annual-report-of-the-perinatal-and-maternal-mortality-review-committee-te-purongo-a-tau-tekau-ma-wha-o-te-komiti-arotake-mate-pepi-mate-whaea-hoki/>

Statistics New Zealand
<https://www.stats.govt.nz/>

Te Tāhū Hauora Health Quality & Safety Commission
<https://www.hqsc.govt.nz/>

World Health Organisation, 2017. Robson Classification: Implementation manual. [Online]. Available at:
<https://www.who.int/publications/i/item/9789241513197>



Te Whatu Ora

Health New Zealand

Capital, Coast and Hutt Valley