

The
New Zealand
Medical Journal
Te ara tika o te hauora hapori

Published by the Pasifika Medical Association Group

Vol 136 | No 1577 | 2023 June 16

Medical privilege in the law of evidence in Aotearoa New Zealand



How well do we support whānau with postpartum contraception? Comparison of two Auckland maternity hospitals

How far are we with Indigenising psychology training curriculum in Aotearoa New Zealand?

Attitudes towards the mixing of COVID-19 vaccinated and unvaccinated patients in multi-bed hospital rooms

The
New Zealand
Medical Journal

Te ara tika o te hauora hapori

Publication information

published by the Pasifika Medical Association Group



PASIFIKA
MEDICAL ASSOCIATION
GROUP

The *New Zealand Medical Journal (NZMJ)* is the principal scientific journal for the medical profession in New Zealand. The *Journal* has become a fundamental resource for providing research and written pieces from the health and medical industry.

The *NZMJ*'s first edition was published in 1887, marking the beginning of a rich 136-year history. It was a key asset of the New Zealand Medical Association (NZMA) up until July 2022.

It is owned by the Pasifika Medical Association Group (PMAG).

The PMAG was formed in 1996 by a group of Pasifika health professionals who identified a need for an association with the purpose of “providing opportunities to enable Pasifika peoples to reach their aspirations”.

ISSN (digital): 1175-8716

Editorial Board

Editor in Chief

Professor Frank Frizelle: Colorectal Surgeon | University of Otago, Christchurch

Sub Editors

Associate Professor David McBride: Preventative and Social Medicine | University of Otago, Dunedin

Dr Kiki Maoate: Paediatric Surgeon, Urologist | Associate Dean Pacific, University of Otago, Christchurch

Professor Roger Mulder: Psychiatrist | University of Otago, Christchurch

Professor Mark Weatherall: Geriatrician | University of Otago, Wellington

Associate Professor Cameron Lacey: Psychiatrist | Head of Department of the Māori Indigenous Research Innovation, University of Otago, Christchurch

Professor Suzanne Pitama: Psychologist | Dean and Head of Campus, University of Otago, Christchurch

Associate Professor Janak de Zoysa: Nephrologist | Assistant Dean Faculty of Medical and Health Sciences, Faculty of Medical and Health Sciences Administration, The University of Auckland, Auckland

NZMJ Production Editors

Stephanie Batt

Madeline McGovern

The
New Zealand
Medical Journal
Te ara tika o te hauora hapori

Publication information

published by the Pasifika Medical Association Group



PASIFIKA
MEDICAL ASSOCIATION
GROUP

Further information

ISSN (digital): 1175-8716
Publication frequency: bimonthly
Publication medium: digital only

To contribute to the *NZMJ*, first read:
journal.nzma.org.nz/journal/contribute

© PMA 2022

Other enquiries to

PMA Group
69 The Terrace
Wellington 6140
New Zealand

To subscribe to the *NZMJ*, email:

nzmj@pmagroup.co.nz

Subscribers to the *New Zealand Medical Journal* previously through the NZMA should now get in contact to subscribe via the above email if they wish to access the *Journal* for 2023.

Private subscription is available to institutions, to people who are not medical practitioners, and to medical practitioners who live outside New Zealand. Subscription rates are below.

All access to the *NZMJ* is by login and password, but IP access is available to some subscribers.

Read our conditions of access for subscribers for further information
journal.nzma.org.nz/legal/nzmj-conditions-of-access

If you are a member or a subscriber and have not yet received your login and password, or wish to receive email alerts, please email: nzmj@pmagroup.co.nz

Subscription rates for 2022

New Zealand subscription rates		Overseas subscription rates	
Individuals*	\$360	Individual	\$503
Institutions	\$680	Institutions	\$700
Individual article	\$45	Individual article	\$45

*NZ individual subscribers must not be doctors (access is via NZMA Membership)

New Zealand rates include GST. No GST is included in international rates.

Individual articles are available for purchase by emailing nzmj@pmagroup.co.nz.

Contents

Editorial

- 8 **Medical privilege in the law of evidence in Aotearoa New Zealand**
Ruth Campbell

Articles

- 12 **Inequities in the physical activity of disabled young people in Aotearoa New Zealand: a stakeholder SWOT analysis of the physical activity sector**
Oliver WA Wilson, Justin Richards, Melody Smith, Robert C Townsend
- 22 **Pacific patients' reasons for attending the emergency department of Counties Manukau for non-urgent conditions**
Catherine J Yang, Vanessa Selak, David Schaaf, Vili Nosa
- 35 **Attitudes towards the mixing of COVID-19 vaccinated and unvaccinated patients in multi-bed hospital rooms**
Sylvi Low, Sonya Aum, Luke Nie, Jacob Ward, Khanh Nguyen, Leilani Pereira, Jenny Mi, Jocelyn Soti, Ben Harford, Robert J Hancox, John D Dockerty
- 57 **How well do we support whānau with postpartum contraception? Comparison of two Auckland maternity hospitals**
Jordon Wimsett, Lynn Sadler, Charlotte Oyston, Emelia Legget, Sue Tutty, Helen Roberts
- 65 **Investigating the distribution of primary and secondary care referrals for public-funded bariatric surgery at Counties Manukau Health (CMH)**
Kate Bradley, Sarah Cowan, Richard Babor, Jon Morrow, Andrew MacCormack, Jamie-Lee Rahiri, Rinki Murphy

Viewpoint

- 76 **What is affirmative action in tertiary education? An overview of affirmative action policies in health professional programmes, drawing on experience from Aotearoa and overseas**
Sophia Barham, Jo Baxter, Peter Crampton

Clinical correspondence

- 84 **End-stage hiatal hernia with cardiac complications**
John Ahn, Gary Lau

Research letters

- 88 **Paternal depression among fathers in the Christchurch Health and Development Study**
Louise Rippin, Geraldine McLeod, Jacki Henderson, Joseph Boden
- 91 **How far are we with Indigenising psychology training curriculum in Aotearoa New Zealand?**
Waikaremoana Waitoki, Kyle Tan, Logan Hamley, Damian Scarf, Otilie Stolte, Joanna Chan

100 years ago in the NZMJ

- 96 **The Public Hospitals in New Zealand**
NZMJ, 1923

Proceedings

- 97 **Proceedings from the Te Whatu Ora – Waitematā, University of Auckland and AUT Collaborative Research Symposium 2023**

Summaries

Inequities in the physical activity of disabled young people in Aotearoa New Zealand: a stakeholder SWOT analysis of the physical activity sector

Oliver W A Wilson, Justin Richards, Melody Smith, Robert C Townsend

Inequities contribute to persistent disparities in the physical activity participation of disabled young people in Aotearoa New Zealand. The genuine investment of Sport NZ Ihi Aotearoa and the establishment of Whaikaha – Ministry for Disabled People were perceived as strengths. Awareness of physical opportunities among disabled young people was identified as a weakness. Greater cohesion/coordination among physical activity providers was viewed as an opportunity. Overlap/competition among physical activity providers could pose a threat.

Pacific patients' reasons for attending the emergency department of Counties Manukau for non-urgent conditions

Catherine J Yang, Vanessa Selak, David Schaaf, Vili Hapaki Nosa

A lot of money and time is being spent on educating people to stay out of Emergency Department unless it is a life threatening emergency. This is especially true for Pacific people, who appear to use Emergency Departments more than other ethnicities. In 2019, a survey was done of people who came to the Emergency Department at Counties Manukau Health with a medical condition that was considered by the Emergency Department nurse to be non-urgent, on why they had come to the Emergency Department. The most common reason for coming to the Emergency Department for Pacific people (as well as for other ethnicities) were that they were told to do so by a health professional, including their GPs. This is contrary to the belief that people are using Emergency Departments because they don't know that they should see their GPs, and further studies should be done to make sure that programmes to discourage people from using Emergency Departments do not have unintended consequences.

Attitudes towards the mixing of COVID-19 vaccinated and unvaccinated patients in multi-bed hospital rooms

Sylvi Low, Sonya Aum, Luke Nie, Jacob Ward, Khanh Nguyen, Leilani Pereira, Jenny Mi, Jocelyn Soti, Ben Harford, Robert J. Hancox, John D Dockerty

At the height of the attempts to contain the COVID-19 pandemic in 2022, most public places required people to have been vaccinated against COVID-19 before they could enter. This did not apply to hospitals where patients could spend days sharing rooms with other patients without knowing their vaccination status. We asked staff and patients in Dunedin Public Hospital about their views on this: most patients and staff would prefer to keep vaccinated and unvaccinated in separate rooms, but recognised that there are practical and ethical difficulties in doing this. There was a range of views about the actual risks involved in mixing vaccinated and unvaccinated patients and vaccine mandates have now been withdrawn, but these issues should be considered in the planning for future outbreaks and pandemics.

How well do we support whānau with postpartum contraception? Comparison of two Auckland maternity hospitals

Jordon Wimsett, Lynn Sadler, Charlotte Oyston, Emelia Legget, Sue Tutty, Helen Roberts

The provision of postpartum contraception is an important part of reproductive health. Best practice is to discuss contraceptive options both during and after pregnancy. We found only small numbers of people

recalled these conversations and less than half left hospital with a reliable method of contraception. We found differences in the contraceptive services between two large tertiary maternity services which suggests an opportunity for quality improvement around contraception provision.

Investigating the distribution of primary and secondary care referrals for public-funded bariatric surgery at Counties Manukau Health (CMH)

Sarah Terese Cowan, Kate Bradley, Richard Babor, Jon Morrow, Andrew D MacCormick, Jamie-Lee Rahiri, Rinki Murphy

This paper explores the patterns in referrals for public bariatric surgery in Counties Manukau DHB. Current evidence demonstrates that Māori and Pasifika are less likely to be referred and less likely to proceed to surgery. The inequity in bariatric surgery needs to be explored further and this paper is one step in this process.

What is affirmative action in tertiary education? An overview of affirmative action policies in health professional programmes, drawing on experience from Aotearoa and overseas

Sophia Heather Barham, Joanne Baxter, Peter Crampton

Both the universities of Auckland and Otago have had affirmative selection policies for entry into health professional programmes for a number of decades. These policies have been created and strengthened as a result of the leadership and advocacy of Māori leaders, academics and communities. The aims of this paper are to: 1) define affirmative action and outline the rationale for affirmative policies, 2) give examples of how affirmative action policies have been implemented in Aotearoa, and 3) give examples of legal challenges to affirmative action drawing on international experience.

Medical privilege in the law of evidence in Aotearoa New Zealand

Ruth Campbell

When can information obtained in the course of medical examination or treatment be admitted and used in criminal proceedings? How is the law working in practice? Is reform necessary or desirable? These are some of the questions Te Aka Matua o te Ture | Law Commission is seeking submissions on as it examines the law on medical privilege as part of its third (and final) statutory review of the *Evidence Act 2006*.

The *Act* sets out what evidence can be admitted and used in court proceedings. As the rules of evidence determine what information is presented in court to establish the facts of a case, they are of critical importance to securing just processes and outcomes and, ultimately, a fair, efficient and effective justice system. Since its enactment, the Commission has been tasked with carrying out an operational review of the *Act* every 5 years—identifying potential issues in practice and, where necessary or desirable, making recommendations for reform.

Medical privilege—purpose, origins and scope

Section 59 of the *Act* creates a privilege in criminal proceedings for communications made to, and information obtained by, medical practitioners and clinical psychologists in the course of the examination, treatment or care of a person in relation to drug dependency or other conditions or behaviour that may manifest in criminal conduct.

A privilege is an exception to the general legal rule that all relevant evidence should be available to a court. It arises in situations where another public interest outweighs the general public interest in ensuring a court has all the information it needs to arrive at a correct decision.¹

The public interest underlying medical privilege is the interest in maintaining confidentiality in healthcare practitioner-patient relationships. The original policy grounds for recognising medical privilege in statute were that:²

- Society has an interest in encouraging people to seek medical attention, and for them to communicate openly and honestly with healthcare professionals when they do so;
- Individuals generally prefer and expect that the information they do share will be kept private; and
- In cases involving drug dependency or other conditions that may manifest in criminal behaviour, compliance with the law is more likely to be achieved through medical treatment than through criminal prosecution.

Medical privilege in practice

The Commission's initial research and engagement with stakeholders has identified two potential issues with the operation of section 59 in practice, and we take these in turn, below.

Our preliminary view is that section 59 could benefit from reform—both to give greater effect to the policy justifications underlying the existence of a medical privilege, and to ensure that the *Act* reflects contemporary medical practice. We have not reached a firm conclusion on this, however, or on how reform could best be achieved. We are seeking submissions to inform our recommendations to the Government. Our *Issues Paper* sets out our analysis and options for reform in more detail and is open for consultation until 30 June 2023.

Exceptions to medical privilege

Section 59 is already narrowly defined, but section 59(1)(b) creates an exception to medical privilege in cases where a person is required, either by a court or another lawful authority, to submit themselves to a medical practitioner or clinical psychologist for “any examination, test, or for any other purpose”. This means that information obtained by a medical practitioner or clinical psychologist during a court-ordered assessment (for example, assessing a person's fitness to stand

trial) is not privileged.

The first issue we explore in our *Issues Paper* relates to uncertainty as to whether this exception applies to court-ordered *treatment*. It is not clear, for example, whether it applies to information obtained during a counselling programme that a person has been directed to attend as a condition of their parole, extended supervision order or a community-based sentence. A related issue is then whether, once information has been obtained through a court-ordered assessment, it can be repurposed and used for another, unrelated purpose—for example, to support criminal charges for unrelated offending.

We believe it is unlikely that the exception was originally intended to apply to court-ordered treatment. The first mention of such an exception can be found in the *Evidence Further Amendment Act 1895* and clearly states that privilege attaches to information obtained by a medical practitioner “*unless the sanity of the patient be the matter in dispute*”.³ This suggests that the initial intention of limiting medical privilege was to ensure that information required to reach a legal determination (for example, to reach a view on whether a person was fit to stand trial) remained available to the court.

We also question whether allowing the exception to apply to court-ordered treatment—or permitting information obtained through court-ordered assessment to be used for another, unrelated purpose—is consistent with the policy justifications for medical privilege. Such a broad carve-out from medical privilege could inhibit patients from engaging honestly and openly in assessment processes or treatment programmes. It could also have far-reaching consequences for information obtained during compulsory treatment under mental health legislation, which were unlikely to have been intended.

In our *Issues Paper*, we present two possible options for reform to clarify the circumstances in which the exception to medical privilege applies, and how information obtained can be used. The first is to remove the words “*for any other purpose*”. The second is to limit the exception so that it only applies where the information obtained will be used for the same purpose for which it has been ordered.

Professions covered by medical privilege

The second issue we explore in our *Issues Paper* relates to the status of disclosures made to health professionals other than medical practitioners

and clinical psychologists.

Section 59(5) states that the privilege extends to people “*acting in a professional capacity on behalf of*” a medical practitioner or clinical psychologist. There is some uncertainty as to who and what is covered by the wording “on behalf of”. The courts have held that this covers nurses acting at the direction of a medical practitioner or clinical psychologist working in a hospital,⁴ but not a counsellor working in a programme for sexual offenders to whom the defendant had been referred by a psychologist for further treatment.⁵

A further consideration is whether the approach under section 59(5) is consistent with contemporary healthcare provision. We note that an increased focus on multi-disciplinary team (MDT) working means patients will come into contact with a range of professionals working together to deliver comprehensive care and treatment. It may be less clear-cut when professionals are working “on behalf of” a medical practitioner or clinical psychologist, and when they are working autonomously. In a case from 2009, the court held that a person can only be said to be acting “on behalf of” a medical practitioner or clinical psychologist if the practitioner or psychologist has already initiated examination, treatment or care. It is unclear how often this will be the case in MDT working.⁶

We are also conscious of the increased use of remote healthcare and digital technologies in healthcare provision. Whether some individuals working in these areas are “acting on behalf of” a medical practitioner or clinical psychologist is not yet clear. A recent case involved an argument that a call-taker working for a mental health helpline was acting “on behalf of” a medical practitioner—but this issue was not determined by the Court of Appeal⁷ and, although the Supreme Court accepted that this was potentially an issue of “public importance”, leave to appeal was declined since it was not an appropriate case to consider the issue.

For these reasons, we present two possible options for reform. First, to amend section 59(5) to clarify what it means to “act on behalf of” a medical practitioner or clinical psychologist. Alternatively, the privilege could be extended to a broader range of healthcare professionals, beyond medical practitioners and clinical psychologists.⁸

Next steps

To ensure the Commission’s recommendations to the Government are fully informed, it is crucial that we hear from clinicians and other health-

care professionals with experience in this area, and those who may be affected by any reforms. If you are interested in making a submission to us, you can find out more at www.lawcom.govt.nz/our-projects/the-third-review-evidence-act or by contacting the review team at evidence@lawcom.govt.nz.

govt.nz. Submissions are open until 30 June 2023.

The feedback we receive through this process will inform our analysis and the recommendations for reform of the Act we make to the Government. We will deliver our final report to the Minister of Justice in February 2024.

COMPETING INTERESTS

Nil.

CORRESPONDING AUTHOR INFORMATION

Ruth Campbell: Senior Legal and Policy Adviser, Te Aka Matua o te Ture | Law Commission. The Law Commission is an independent Crown Entity responsible for reviewing New Zealand law and making recommendations to the Government to improve the law. We also advise the Minister of Justice and government agencies on how to make the law more accessible and easier to understand.
E: RCampbell@lawcom.govt.nz

REFERENCES

1. *C v Complaints Assessment Committee* [2006] NZSC 48.
2. Te Aka Matua o te Ture | Law Commission. *Evidence Law: Privilege*. Wellington, New Zealand; 1994. Preliminary Paper no. 23. Available from <https://www.lawcom.govt.nz/our-projects/evidence-law-privilege>.
3. Evidence Further Amendment Act 1895 s 9(2).
4. *R v Rapana* [1995] 2 NZLR (HC).
5. *R v Gulliver* 9 June 2005 CA51/05.
6. *R v Hodgson* HC Timaru CRI-2008-076-001397, 2009 Mar 30.
7. *D (CA54/208) v R* [2019] NZCA 1.
8. *D (SC26/2019) v R* [2019] NZSC 72.

Inequities in the physical activity of disabled young people in Aotearoa New Zealand: a stakeholder SWOT analysis of the physical activity sector

Oliver WA Wilson, Justin Richards, Melody Smith, Robert C Townsend

ABSTRACT

AIMS: Disabled people, particularly children and adolescents, tend to participate in less physical activity than their non-disabled peers on average. However, disabled children and youth (i.e., young people [YP]) are typically underrepresented in physical activity (PA) research, with little data available in Aotearoa New Zealand to guide policy makers to alter societal factors that contribute to disability inequities. The purpose of this study was to conduct a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis of the PA sector in Aotearoa New Zealand with respect to PA participation and promotion among disabled YP.

METHODS: Focus group discussions, underpinned by the SWOT framework, were facilitated with stakeholders (n=11) engaged in the Aotearoa New Zealand PA sector. Data were transcribed and analysed using content analysis. Desirable and accessible opportunities were essential enablers of PA in disabled YP.

RESULTS: Communication, transport, equipment costs, awareness of activities, and social support were identified as factors that influence PA participation. Schools also have a considerable influence on PA participation among disabled YP, while greater funding for and cohesion/collaboration among PA providers is key to continued growth in PA participation.

CONCLUSIONS: Communication, accessibility, funding, and collaborative/coordinated multi-level efforts were identified as areas in need of strengthening to provide equitable opportunities for disabled YP in Aotearoa New Zealand to participate in PA.

The 2022 Aotearoa New Zealand physical activity (PA) report card for children and youth (i.e., young people [YP]) highlights a range of disparities in PA participation between disabled and non-disabled YP¹ aligning with global evidence.² For example, there was a 5.1 percentage point difference between disabled and non-disabled YP meeting PA recommendations,¹ and international evidence suggests PA levels vary according to disability.³ Given the well-established benefits of PA,⁴ the fact that disabled YP have fewer opportunities to access and participate in regular PA compared to their non-disabled peers is a concerning but familiar story. For example, young people with impairments are typically excluded from PA by a series of often compounding psychological, social, material, and environmental barriers.^{5,6} These barriers range from navigating inaccessible facilities and high costs associated with participation, exclusionary attitudes, or a lack of information about available opportunities,⁷ illustrating the reach and impact of ableism in reducing the opportunities available for young people.⁸ The social model of disability⁹ stipulates that

people are disabled by society (e.g., economic, environmental, and cultural factors) rather than by their physical impairment(s). The model does not ignore individual experience or impairment but recognises that social structures have an overriding impact on whether an impairment is disabling or not. In doing so, the model provides a platform for attending to environmental change and generating social justice for disabled people. The model has been used widely internationally, including as a guiding framework underpinning Aotearoa New Zealand disability policy.¹⁰ Drawing from this foundation, addressing societal factors that contribute to PA inequities is important given PA participation is strongly linked with health and wellbeing outcomes, and access to PA is embedded in the United Nations Convention on the Rights of Persons with Disabilities (CRPD), of which Aotearoa New Zealand is a signatory to.¹¹

In Aotearoa New Zealand, it has been identified that children and youth are insufficiently active, and the 2022 Aotearoa New Zealand Physical Activity Report Card identifies a number of indicators in which disabled young people score lower than

their non-disabled counterparts, including overall PA, participation in organised sport, and PA and active play.¹ What is missing, however, is an understanding of why these disparities exist in the context of Aotearoa New Zealand, a context in which there is renewed government focus and intervention related to disability and inclusion in sport.¹¹

Thus, the aim of this study was to build on the data generated from the 2022 PA Report Card to provide contextual insight into the societal factors contouring disabled young peoples' PA participation. Relatedly, our purpose is to inform future policy changes that might increase opportunities for their PA participation. In so doing, we raise some critical questions on comparisons of PA participation among demographic groups that have differential access to PA opportunities.

Methods

A qualitative approach was used to generate an understanding of disabled young peoples' PA participation, as scored in the Active Healthy Kids Global Alliance Report Card indicators.^{1,12} These grades provided a reference point for two semi-structured focus group discussions, lasting on average 90 minutes. Participants were purposefully sampled using network sampling,¹³ enabling a range of views from within the disability PA sector to be represented. Once identified, participants were emailed information regarding the study along with an invitation to participate. Eleven participants took part in the focus group interviews, including people with lived experience of disability, experience of providing sport, active recreation and play opportunities for disabled people, policy makers, and individuals with general experience and immersion in the Aotearoa New Zealand disability PA sector. Discussions were held in accordance with recommendations for virtual qualitative health research¹⁴ using video-conferencing software (Microsoft Teams) that recorded and transcribed the data. Accuracy of the transcription was checked, and data were analysed using hierarchical content analysis incorporating both inductive and deductive elements. This method of analysis allowed for the inductive generation of initial themes through the *coding* of units of raw data related to disabled young peoples' PA participation. These data were progressively abstracted to a higher thematic level where themes were *clustered* around a common higher-order category. These categories were organised according

to a strengths, weaknesses, opportunities, and threats (SWOT) framework, representing the deductive element of the analysis.¹⁵ Together, this allowed for a general description of the mechanisms underpinning inequities in participation. For brevity, the results are presented thematically by report card indicator to avoid overlap between strengths, weaknesses, opportunities, and threats. This study was approved by the University of Waikato Human Research Ethics Committee (HREC(Health)2022#10).

Results

Descriptions of the indicators, which have been used to organise results, along with grades for YP overall and disabled YP, are reported elsewhere.¹ Several participants in the focus groups could provide multiple perspectives across the disability PA sector. Participant roles included active recreation organisation administrators (n=6), practitioners (e.g., coaches, community programme managers) (n=3) current/former disabled athletes (n=4), and disability/sport/PA researchers (n=5). Strengths, weaknesses, opportunities, and threats are reported below and summarised in Table 1. Though discussions were focused on PA participation in general, results are reported under the indicator headings established by the Active Healthy Kids Global Alliance Report Card.^{1,12}

Overall physical activity

Echoing previous PA research,¹⁶ the communication of PA opportunities to disabled YP was considered a primary factor influencing participation. For example, while it was agreed that communicating and raising awareness of existing opportunities to be active was important, a lack of cohesion between PA providers can result in a failure to disseminate information and engage with disabled YP:

"In the promotion of what's already happening, I think a more coordinated approach [is needed] so that any young disabled person can find information on ways that they want to be active. I think currently that the route to finding that information is pretty tricky unless you know someone who knows someone or if you're in part of an organisation or activity." (practitioner/researcher)

Second, the importance of PA professionals offering a variety of quality opportunities so that disabled YP have choices was identified:

“It’s about people sticking to what they’re really good at and not trying to spread themselves too thin. It’s about getting the right people with the right skill. But it really comes down to choice ... people do what they want to do if they’ve got the ability to do it.” (administrator/athlete)

As such, while an expansion of opportunities for PA is a potential strength, there is considerable overlap and competition between providers:

“It’s great that you guys are coming into this area, we’ll move out of what we’re doing’. By [an organisation] moving in and [another organisation] moving out we’ve moved the hole somewhere else, which we can’t afford to happen.” (administrator/athlete)

The growth of Parafeds (regional disability sport and recreation organisations) was identified as a strength, given their explicit objective to focus on providing sport and PA programmes for people with physical impairments. However, it was identified that Parafed memberships were declining. In terms of facilitating PA, participants recommended adopting participatory practices; that is, listening to members and identifying what YP want to engage in as part of their PA participation.

Negotiating access to PA was identified as a repeated threat to PA participation. For example, participants described limited access to reliable and affordable transportation and equipment as major logistical barriers for disabled YP. The provision of operational funding was identified as important to keep costs down for participants. At a programmatic level, one participant (administrator/practitioner) described that participation in ‘one-off’ events (for example, ‘have-a-go days’) can provide good initial exposure; however:

“If you wanted to do it so that they would participate regularly, the wheels literally and figuratively fell off.”

Furthermore, funding for both participation initiatives and educational programmes was commonly raised as a threat to continued progress, with one participant (athlete/researcher)

describing how many disability sport and recreation organisations are “operating on the smell of an oily rag”. Finally, at a micro level, it was recognised that inclusive attitudes were a major factor influencing access:

“Sometimes people think about physical access being the bigger one, but often it’s not, and will blame that. But it’s more the attitudinal one, but we gotta work out how to do both.” (administrator/athlete)

Policy responses, therefore, might consider how best to address the attitudinal barriers to participation in a systemic way, targeting those responsible for leading PA (e.g., coaches and instructors).¹⁰

In promoting PA, it is worth considering access as a multi-dimensional construct, comprising physical access, knowledge of appropriate opportunities, power (the ability to obtain and sustain access), and interpersonal attitudes.¹⁷ As Smith et al.¹⁸ suggest, PA participation is mediated by a series of interconnected interpersonal, environmental, and policy factors, comprising ‘access work’. Here, the data is suggestive of a complex mix of limited social support, a saturated and complex organisational landscape, and limited information dissemination that are important factors limiting opportunities for disabled youth to be physically active.

Organised sport and physical activity

It was generally recognised that ‘inclusion’ was embedded—at least rhetorically—as a guiding principle at numerous levels of the Aotearoa New Zealand sport sector:

“So many sports are just calling for disabled or impaired people or anybody to come to play their sport. So, the doors are open, I don’t think we need to sort of make the doors open anymore. And if there is a club that is led by a group that aren’t very inclusive, then you know, you bypass them, they’re missing out.” (athlete/practitioner)

Partnerships between Parafeds and national sports organisations was raised as a strength and an opportunity that could be further leveraged, particularly to build capacity within ‘mainstream’ sports. However, implementing mechanisms for coordination among those in the PA sector was described as a clear weakness, with sports organisations having to negotiate multiple and

incompatible expectations associated with their various initiatives focused on inclusion, participation, and high performance:

“[A] coordinated approach is a big one. So, with disability sport providers, having some cohesion across, I guess our Parafed network, disability sport organisations that exist, and national disability sport organisations.” (practitioner/researcher)

Active play

The development of informal unstructured play was identified as an opportunity that Sport New Zealand and Parafeds are beginning to pursue:

“The Parafeds have grown very well as the last 10 years, and so I think that they are in a very good place to support more and more but I don’t know how the membership numbers are. So I’m not sure if organised sport as such, in the way that we’ve traditionally done it, is meeting the modern needs of young people. I certainly feel like the informal unstructured play is something that we need to develop, and I know that Sport NZ is.” (administrator/athlete)

Active transportation

Though participants mentioned transportation needs to and from PA opportunities, active transport was not raised during the discussion as an area of focus.

Sedentary behaviours

Sedentary behaviours were only raised once as a function of a lack of inclusive practice:

“We see a lot of kids with disabilities staying on the sideline during PE.” (administrator)

Family and peers

Family (parents and siblings) and peers were consistently identified as crucial to the PA participation of disabled YP. The ability of Parafeds and other organisations to engage families in sporting activities, sometimes via ‘whānau days’ was identified as essential to initiating PA participation of disabled YP, and facilitating a transition from informal activities to regular participation in structured activities:

“The whānau days and the incorporation of family and siblings has just come back time and time again be a really really positive thing, but it’s also been important to not have them as a one off.” (administrator)

Caregivers outside of the family unit (e.g., paid caregivers) were also identified as important for facilitating PA participation. The importance of caregivers, family or otherwise, is highlighted by an athlete/administrator describing what it takes for them to participate:

“Obviously we’re talking young athletes as well or young people being able to attend events, and the fact it takes an hour and a half to get me out of bed and shower purely just to go and attend a sporting event and I’m potentially going to go in a bit more fatigued. So there’s all this kind of consideration around body management and understanding levels of care required too even before [people] even get to the event. I think that really needs to be recognised in this space.”(athlete/administrator)

School

Echoing previous research,^{1,19} schools were identified as an important setting to reach disabled YP and help them transition to other PA participation opportunities. However, variation in the quality of opportunities provided in school physical education was noted, primarily due to teachers’ lack of disability-specific knowledge:

“Most of the time we talk to the teachers either they don’t know how or they don’t have time and we can’t blame them.” (administrator)

Another participant (administrator/practitioner) described that this stems from limited formal training of teachers in adaptive sport and physical education (PE). Participants explained that successful continuing education of teachers is possible, but difficult, as PE is often not a priority compared with numeracy and literacy:

“The value of sport and PE in primary school, compared to say literacy and mathematics and science, appears to be a lot lower. The effort it takes to

actually deliver [inclusion] training, once in it's fine because they can see the real value, but you gotta have the right people within the school with the right ethos to be able to recognise the importance of it.” (administrator/athlete)

Aligning PA with the core curriculum, such as literacy and numeracy, was identified as a strategy to engage YP in PA. Finally, another weakness concerning school PA promotion was that disabled YP, particularly those with intellectual or visual impairments, were “already on the back foot developmentally” (administrator) upon being reached at school:

“I guess it's understanding that schools are really busy places and they don't necessarily want additional programmes offered or additional professional development or fear and particularly at the moment with COVID, they're barely hanging on.” (administrator)

Reaching YP early was identified as an opportunity to facilitate ongoing inclusion; however, often the responsibility for facilitating PA for disabled YP fell to community sports clubs:

“(T)here's a huge drop off as soon as they leave school. But if they are involved in their community club then when they leave school they can go to the club because they know it caters for them.” (administrator/practitioner)

Community and environment

In addition to sporting organisations, local councils were also acknowledged as important in facilitating physical access to leisure facilities:

“The disability sports, Parafeds, Halbergs, Special Olympics, Paralympics, play really critical role, but so do the Councils because they provide a lot of the opportunities in the community, especially with pools and gyms and that sort of thing.” (administrator/athlete)

Beyond organisations, Aotearoa New Zealand's natural environment was acknowledged as an asset due to the space available to be active. However, Aotearoa New Zealand's natural environment is also

a weakness due to the dispersal of the population over a relatively large geographical area where the local organisations and built environments may be lacking in less populated areas:

“Within some of our communities there might not be really quality opportunities at school. Within their rural, isolated community, there's nothing that they can be involved in outside of school. Then maybe the informal play space or park that's near them isn't accessible either, and so ... that wider system around the individual isn't providing any opportunities.” (practitioner/researcher)

Government

The relatively recent leadership role assumed by Sport New Zealand regarding promoting PA among disabled people was acknowledged as an important development. This change was timely and well received:

“Five to six years ago, people used to be (like) why should we include disabled tamariki [children] and rangatahi [youth]. Now they are talking about how can we do it better? We're doing it, but we actually want to do it much better.” (administrator/athlete)

Furthermore, at a broader policy level, the forthcoming (at the time of focus groups) and since launched Whaikaha – Ministry of Disabled People was also noted as a potentially promising development:

“It'll be interesting to see how much emphasis [Whaikaha – Ministry of Disabled People] have got on play, active recreation and sport because they've got big actions around education, health, community involvement ... It's how they can see that what [Sport NZ] is doing in the sector can actually add value to all the other aspects of a disabled person's life, just like [Sport NZ] do for able-bodied New Zealanders.” (administrator/athlete)

Sleep

Sleep was not raised as an issue by any of the participants in the discussion about inequities.

Physical literacy/physical fitness

Physical fitness components were not raised explicitly, though obesity among YP was identified as a potential threat to PA promotion. From a physical literacy perspective, helping YP to have fun and develop skills to confidently participate in PA was identified as an historic gap that is now being filled. Promisingly, a focus on physical literacy of disabled YP in schools was noted.

A note on comparisons

Though participants believed that both disabled and non-disabled YP should be compared as a means of directing policy and highlighting areas for development, they noted such comparisons are not straightforward. One concern revolved around inequitable variations in delivery and access across Aotearoa New Zealand:

“If there was equality of opportunity across NZ, if disabled kids in Otago got the same experience as disabled kids in Auckland and the Bay of Plenty (then we can compare), but at the moment there’s only a couple of hot spots.” (athlete/researcher)

Whether mere comparisons were valuable was also questioned:

“I think a point of comparison, I mean, it tells us there’s an inequity, but it doesn’t tell us why. I don’t know if it’s super helpful without the why.” (practitioner/researcher)

With respect to the ‘why,’ including disabled YP in discussions was recommended in future:

“If we’re wanting to find out the why’s, then actually talking to the people who it’s impacting directly would be really valuable.” (practitioner/researcher)

Other concerns included the absence of YP with a more diverse range of impairments (e.g., learning disabilities) in the comparisons, and whether the collected information is accurate:

“Do the parents of disabled tamariki and rangitahi actually get them involved in reporting information? Who knows?” (athlete/administrator)

Discussion

The social model of disability offers a useful framework to guide the discussion of our findings, as it is evident that there are multiple societal levels of influence on PA, and particularly in the case of disability, influences on PA interact and compound across levels.¹⁰ By looking for commonalities across the various indicators presented in our results, we aim to identify the key determinants contributing to inequities in PA participation for YP in Aotearoa New Zealand and provide key insights for policy-makers and practitioners in the disability PA sector to alter societal factors that arguably generate disability inequities.

It was evident from discussions that disabled YP want to participate in PA, provided they can participate in activities that are accessible and of interest to them. A variety of factors were identified as important for enabling this for disabled YP. A starting point is providing disabled YP with a variety of activities to choose from. PA opportunities for disabled YP tend to be more limited and dispersed over a larger geographical area than their abled-bodied peers (i.e., the density of opportunities is lower), and this relative scarcity makes all such opportunities all the more important. Awareness of the opportunities that exist, on the part of both disabled YP and PA providers, is another important factor. Disabled YP’s awareness is important due to the aforementioned scarcity of opportunities. With respect to PA providers, desirable PA opportunities for disabled YP cannot be created without engaging and listening to disabled YP to understand their preferences. A variety of antecedents were identified as key to awareness, which can be distilled down to clear, engaging, and cohesive communication between disabled YP and PA providers, as well as between different PA providers to share knowledge and ensure gaps are filled rather than created. The latter speaks to the importance of coordination across the sector and minimising competition for resources amongst PA providers for disabled people. Indeed, while progressive discourses of inclusion and equity permeate recent social policy¹⁰ and the day-to-day work of practitioners within the sector, the extent to which it can impact on participation in sport and PA is mediated by a lack of coordinated approaches from organisations responsible for disability sport provision.¹¹

Beyond awareness, accessibility is another important factor impacting the participation of

Table 1: Summary of strengths, weaknesses, opportunities, and threats.

Strengths	<p>Recent growth/expansion of physical activity participation opportunities</p> <p>Partnerships between Parafeds and national sporting organisations</p> <p>NZ's natural environment and available space</p> <p>Sport New Zealand leadership and forthcoming Whaikaha – Ministry of Disabled People</p>
Weaknesses	<p>Communication/awareness of physical activity opportunities</p> <p>Coordination in the PA sector</p> <p>Variation in school teacher education and physical activity opportunities within schools</p> <p>Physical education not a priority within school curriculum</p> <p>Dispersal of NZ's population over large geographic area</p>
Opportunities	<p>Cohesion/coordination among physical activity providers</p> <p>Listening to participants, in particular young people</p> <p>Fostering inclusive attitudes</p> <p>Promoting informal and unstructured play</p>
Threats	<p>Overlap/competition among physical activity providers</p> <p>Transportation and equipment not affordable and/or reliable</p> <p>Funding sources may not be sustainable</p>

disabled YP. Cost, transportation, exclusionary attitudes, lack of knowledge, and absence of social support can all constrain accessibility. Although a large proportion of funding secured by providers in the disability PA sector contributes to subsidising the cost of equipment and providing appropriate transport options, these expenses remain a barrier to equitable participation. Transportation issues are compounded by the scarcity of PA opportunities for disabled YP, which clearly indicates the need to improve the distribution of such opportunities across Aotearoa New Zealand, as well as increase the number of opportunities. Disabled people in Aotearoa New Zealand suffer disproportionately from the burden of the transport system and experience inequitable barriers to independent and/or spontaneous transport.²⁰ Larger travel distances to reach scarcer facilities make participation even more resource intensive. Further research into active school travel and independent mobility of disabled YP is warranted.²¹ This may include investigating how to implement practical enablers across the

transport system and reducing ableist presumptions about preferences and abilities.^{22,23}

Social support from parents, siblings, peers, and other caregivers was identified as vital to the participation of disabled YP in PA. Making activities a family affair is one strategy employed to get disabled YP, along with their family involved. Aligned with social support is support from teachers for YP to participate in PA in schools alongside their peers. There appears to be room for improvement in reaching and supporting disabled YP early in a way that is underpinned by the social model of disability to avoid creating or perpetuating disability inequities. There is also space for growth in relation to equipping teachers with the skills and resources to include disabled YP, and prioritising physical literacy alongside numeracy and literacy. Schools are particularly important, as many of the barriers constraining participation outside of school (awareness, transport, equipment, support, etc.) are either non-existent or relatively straightforward to mitigate. Much of the discussion regarding schools focused on teacher capabilities, which is important.

However, a school-wide response that encompasses enabling policies and environments, alongside increasing teacher capabilities, and the capabilities of those who may volunteer to facilitate PA participation (i.e., as coaches, managers, etc.) warrants consideration. It is also worth noting that it is assumed that participant comments regarding schools concern mainstream schools, as there was no mention of specialist schools that offer specialist teaching to students with high needs.¹⁰

The strategic priorities and allocation of resources from Government will play a central role in the formulation, implementation, and evaluation of policies that provide equitable opportunities for disabled YP to participate in PA as readily as their non-disabled peers. Evidence suggests a gap can exist between the government and behavioural indicators for disabled YP, and it is possible the impacts of policy take time to impact behavior in a significant and sustained manner.² Recent developments, such as the creation of the Disability Strategy by the government agency responsible for PA promotion in Aotearoa New Zealand (Sport New Zealand) and the forthcoming Whaikaha – Ministry of Disabled People represent considerable progress and opportunity, and time should be allowed before evaluating the impact that these policies have on behavior. The demand for Sport New Zealand's recent contestable funding demonstrates the constraint that continued investment in the sector will ultimately place on growing opportunities for disabled YP to participate in PA. With respect to strategic direction, it appears that there is a desire on the part of some within the sector for greater collaboration and cohesion among PA providers.

Though participants included Māori, in future the engagement of tāngata whenua would ensure that Tāngata Whaikaha and explicit perspectives of Māori are elevated. Along similar lines, engagement of those less involved in the PA activ-

ity sector would no doubt produce invaluable perspectives as to how PA could be better promoted for disabled YP. Beyond engaging tāngata whenua, participants identified several limitations in the development of the report card, including: the exclusion of YP with certain disabilities, a lack of insight into why inequities exist, and complications conducting national comparisons when there are known regional variations in PA opportunities for disabled YP. Regarding comparisons, disabled YP participate in less PA, which is concerning given PA participation is relatively low among YP in general. Further research is needed to understand the magnitude of inequities in PA participation based on the nature of YPs' disability. Other limitations include a paucity of discussion about several indicators and how they are influenced by societal factors, such as supporting whānau, caregivers, and peers to facilitate the development of physical literacy. Further, in keeping with the social model of disability, future researchers may want to consider further exploring the importance of the community and the environment, particularly in relation to weaknesses identified by participants regarding accessibility and transportation. Also, exclusionary attitudes towards disability and disabled people, and recognition of the role individuals can play in description of sustaining ableist systems always warrants further investigation. Though difficult, each of these limitations could be addressed with continuing discussions and further resourcing to collect the necessary data.

In summary, communication, particularly including the voices of disabled YP, accessibility, funding, improved/targeted data collection, and collaborative/coordinated multi-level efforts were identified as areas in need of strengthening to provide equitable opportunities for disabled YP in Aotearoa New Zealand to participate in PA as readily as their non-disabled peers.

COMPETING INTERESTS

Nil.

ACKNOWLEDGEMENTS

We acknowledge the contributions of the 2022 Aotearoa New Zealand Physical Activity Report Card for Children and Youth Team who collectively provided the overall grades for comparison (Lana Chisholm, Scott Duncan, Erica Hinckson, Erika Ikeda, Geoff Kira, Ralph Maddison, Sandy Mandic and Kim Meredith-Jones). We also acknowledge the contributions of the participants in the focus group discussions who provided valuable expert insight into the current situation for disability physical activity in Aotearoa New Zealand. No financial or material support of any kind was received for the work described in this article.

AUTHOR INFORMATION

Oliver WA Wilson: Te Hau Kori, Te Wāhanga Tātai Hauora Faculty of Health, Victoria University of Wellington, New Zealand.

Justin Richards: Te Hau Kori, Te Wāhanga Tātai Hauora Faculty of Health, Victoria University of Wellington, New Zealand; Sport New Zealand Ihi Aotearoa, Wellington, New Zealand.

Melody Smith: School of Nursing, The University of Auckland, New Zealand.

Robert C Townsend: Te Huataki Waiora School of Health, University of Waikato, New Zealand.

CORRESPONDING AUTHOR

Oliver WA Wilson: Faculty of Health, Victoria University of Wellington, New Zealand. E: oliver.wilson@vuw.ac.nz

REFERENCES

1. Wilson OWA, Ikeda E, Hinckson E, Mandic S, Richards J, Duncan S et al. Results from Aotearoa New Zealand's 2022 Report Card on Physical Activity for Children and Youth: A call to address inequities in health-promoting activities. *J Exerc Sci Fit.* 2023 Jan;21(1):58-66. doi: 10.1016/j.jesf.2022.10.009.
2. Sit C, Aubert S, Carty C, Silva DAS, López-Gil JF, Asunta P et al. Promoting Physical Activity Among Children and Adolescents With Disabilities: The Translation of Policy to Practice Internationally. *J Phys Act Health.* 2022 Oct 22;19(11):758-768. doi: 10.1123/jpah.2022-0351.
3. de Hollander EL, Proper KI. Physical activity levels of adults with various physical disabilities. *Prev Med Rep.* 2018 Apr;10:370-376. doi: 10.1016/j.pmedr.2018.04.017.
4. Bull FC, Al-Ansari SS, Biddle S, Borodulin K, Buman MP, Cardon G et al. World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *Br J Sports Med.* 2020 Dec;54(24):1451-1462. doi: 10.1136/bjsports-2020-102955.
5. Rimmer JH, Riley B, Wang E, Rauworth A, Jurkowski J. Physical activity participation among persons with disabilities: barriers and facilitators. *Am J Prev Med.* 2004 Jun;26(5):419-25. doi: 10.1016/j.amepre.2004.02.002.
6. Smith B, Sparkes AC. Disability, sport, and physical activity. In: Watson N, Roulstone A, Thomas C, editors. *Routledge Handbook of Disability Studies.* 2nd ed. London: Routledge; 2019. p. 391-403.
7. Jaarsma EA, Smith B. Promoting physical activity for disabled people who are ready to become physically active: A systematic review. *Psychol Sport Exerc.* 2018 Jul;37:205-223. doi: 10.1016/j.psychsport.2017.08.010.
8. Carroll P, Witten K, Calder-Dawe O, Smith M, Kearns R, Asiasiga L et al. Enabling participation for disabled young people: study protocol. *BMC Public Health.* 2018 Jun 8;18(1):712. doi: 10.1186/s12889-018-5652-x.
9. Oliver M, editor. *Social work with disabled people.* London: The Macmillan Press; 1983.
10. Guidance for policy makers [Internet] Office for Disability Issues Te Tari Mō Ngā Take Hauātanga; c2019 [cited 2023 Mar 9]. Available from: <https://www.odi.govt.nz/guidance-and-resources/guidance-for-policy-makes/>.
11. McBean C, Townsend RC, Petrie K. An historical analysis of disability sport policy in Aotearoa New Zealand. *Int J Sport Policy Politics.* 2022;14(3):419-434. doi: 10.1080/19406940.2022.2052147.
12. Aubert S, Barnes JD, Demchenko I, Hawthorne M, Abdeta C, Abi Nader P et al. Global Matrix 4.0 Physical Activity Report Card Grades for Children and Adolescents: Results and Analyses from 57 countries. *J Phys Act Health.* 2022 Oct 22;19(11):700-728. doi: 10.1123/jpah.2022-0456.
13. Sparkes AC, Smith B. *Qualitative Research Methods in Sport, Exercise and Health: From process to product.* 1st ed. London: Routledge; 2013.
14. Pocock T, Smith M, Wiles J. Recommendations for Virtual Qualitative Health Research During a Pandemic. *Qual Health Res.* 2021 Nov;31(13):2403-2413. doi: 10.1177/10497323211036891.
15. Helms MM, Nixon J. Exploring SWOT analysis – where are we now? A review of academic research from the last decade. *J Strategy Manag.* 2010 Aug 10;3(3):215-251. doi: 10.1108/17554251011064837.
16. Smith B, Wightman L. Promoting physical activity to disabled people: messengers, messages, guidelines and communication formats. *Disabil Rehabil.* 2021 Dec;43(24):3427-3431. doi:

- 10.1080/09638288.2019.1679896.
17. Nind M, Seale J. Concepts of access for people with learning difficulties: towards a shared understanding. *Disability & Society*. 2009 Apr;24(3):273-287. doi: 10.1080/09687590902789446.
 18. Smith M, Wilson OWA, Ikeda E, Hinckson E, Mandic S, Richards J et al. 2022 Aotearoa New Zealand Physical Activity Report Card for Children and Youth [Internet]. The University of Auckland; 2022 [cited 2022 May 5]. Available from: https://auckland.figshare.com/articles/report/2022_Aotearoa_New_Zealand_Physical_Activity_Report_Card_for_Children_and_Youth/20294457
 19. Mizdrak A, Shaw C, Lynch B, Richards J. The potential of school-based physical education to increase physical activity in Aotearoa New Zealand children and young people: a modelling study. *N Z Med J*. 2021 Mar 12;134(1531):23-35.
 20. Bozovic T, Hinckson E, Stewart T, Smith M. How street quality influences the walking experience: an inquiry into the perceptions of adults with diverse ages and disabilities. *J Urban*. 2021 Dec:1-26. doi: 10.1080/17549175.2021.2005121.
 21. Ross T, Buliung R. A systematic review of disability's treatment in the active school travel and children's independent mobility literatures. *Transp Rev*. 2018;38(3):349-371. doi: 10.1080/01441647.2017.1340358.
 22. Smith M, Calder-Dawe O, Carroll P, Kayes N, Robin Kearns, En-Yi L et al. Mobility barriers and enablers and their implications for the wellbeing of disabled children and young people in Aotearoa New Zealand: A cross-sectional qualitative study. *Wellbeing, Space and Society*. 2021;2:100028. doi: 10.1016/j.wss.2021.100028.
 23. Calder-Dawe O, Witten K, Carroll P. Being the body in question: Young people's accounts of everyday ableism, visibility and disability. *Disabil Soc*. 2020;35(1):132-155. doi: 10.1080/09687599.2019.1621742.

Pacific patients' reasons for attending the emergency department of Counties Manukau for non-urgent conditions

Catherine J Yang, Vanessa Selak, David Schaaf, Vili Nosa

ABSTRACT

AIM: To determine Pacific patients' reasons for Emergency Department (ED) use for non-urgent conditions by Pacific people at Counties Manukau Health.

METHODS: Patients who self-presented to Counties Manukau ED with a non-urgent condition in June 2019 were surveyed. Responses to open-ended questions were analysed using a general inductive approach, in discussion with key stakeholders.

RESULTS: Of 353 participants with ethnicity reported, 139 (39%) were Pacific, 66 (19%) Māori and 148 (42%) were non-Māori non-Pacific, nMnP. A total of 58 (42%) of Pacific participants had been to their general practitioner prior to presenting to the ED; this proportion was similar for Māori (19 [30%]) and nMnP (59 [40%]) ($p=0.215$). The most common reasons for ED attendance among Pacific (as well as other) participants were 1) advice by a health professional (41%, 95% CI 33–50%), 2) usual care unavailable (28%, 20–36%), 3) symptoms not improving (21%, 14–28%), and 4) symptoms too severe to be managed elsewhere (19%, 12–26%).

CONCLUSIONS: Multiple reasons underlie non-urgent use of EDs by Pacific and other ethnic groups. These reasons need to be considered simultaneously in the design, implementation, and evaluation of multi-dimensional initiatives that discourage non-urgent use of EDs to ensure that such initiatives are effective, equitable, and unintended consequences are avoided.

Presentations to Emergency Departments (EDs) in New Zealand^{1,2} and internationally³ are increasing at an unprecedented rate. While most ED presentations are for urgent conditions, a substantial proportion is for conditions regarded as non-urgent. The proportion of ED presentations that are non-urgent is rising in New Zealand and across the world.^{4,5} Non-urgent ED presentations are considered by some to be unnecessary, costly, avoidable, and better managed in a primary care setting.⁶

Māori and Pacific people experience substantial health inequities⁷ and are high users of EDs. In 2019/2020, 20.6% of Pacific and 21.7% of Māori reported having been to the ED in the past 12 months compared with 14.9% overall.⁸ High ED use by Pacific people in New Zealand has been highlighted in previous literature.^{9,10} At Counties Manukau (CM) Health, Pacific patients are the highest ED users, comprising 21% of the catchment population but 34% of all ED presentations.¹¹ The Pacific Health team of CM Health sought to determine the key reasons for Pacific patients' high use of the ED for non-urgent conditions, from the perspective of Pacific patients themselves.

Method

The CM Health Pacific Health Team undertook a cross-sectional survey of patients who self-presented with a non-urgent condition to CM ED. CM ED operates 24 hours a day, throughout the year, inside Middlemore Hospital. On arrival to the CM ED (as with all other New Zealand EDs), all patients' urgency of diagnosis and treatment is classified according to the Australasian Triage Scale (ATS). This scale has categories ranging from one (most urgent) to five (least urgent). Recruitment for the survey was opportunistic. Members of the Pacific Health Team approached potential participants while the participants were waiting to be seen in the ED. The survey was conducted from Tuesday, 18 June to Saturday, 22 June 2019 during two time periods: office hours (11 am to 2 pm) and after hours (5 pm to 10 pm).

Survey inclusion criteria were: 1) the patient had self-presented to the ED without a referral letter or previous arrangement to be seen directly by an inpatient specialist team, 2) the patient was present in the waiting room during the survey period, 3) the patient was categorised as ATS 4 or

5 (i.e., non-urgent), 4) the patient agreed to participate in the survey, and 5) the patient provided their ethnicity in the survey.

The survey (see Appendix 1) was a structured questionnaire in English with a combination of closed- and open-ended questions that was read out to participants, with the interviewers translating the survey questions to Samoan or Tongan if needed. The questionnaire was based on one used in a previous survey of CM ED patients with ATS 3–5.¹² Interviews were conducted in a private room or in an area that was curtained off. Participants' responses were recorded on paper by the interviewers in English. If the patient could not answer the survey questions, the survey could be completed by an accompanying person on their behalf. Alternatively, the accompanying person could translate for the patient.

The study was registered with the CM Health Research Office (CM Health #1292). Ethics approval for Catherine Yang to analyse the anonymised data (stored securely on the CM Health server) for her dissertation was obtained from the Auckland Health Research Ethics Committee (#3341).

Analysis

Participants were classified as Māori, Pacific and non-Māori non-Pacific (nMnP) based on total response output. While the survey was able to capture multiple ethnicities, no participant ethnicity was classified to more than one ethnic group, meaning that ethnic groups were mutually exclusive. Quantitative data (socio-demographic characteristics, general practitioner [GP] access) were presented as numbers and proportions by ethnic group. Chi-squared tests were used to determine whether proportions were statistically significantly different (two-sided p-value of <0.05) between ethnic groups.

Pacific participants' answers to the following three free-text questions, on why they went to the ED for non-urgent conditions, were analysed, using the general inductive approach:¹³

1. Can you tell us how you ended up in ED today and did not go to your GP/Family doctor?
2. Is there a reason why you didn't contact your GP or make an appointment to see them? (If the participants had not tried to contact their GP or GP nurse that day)
3. Why didn't you go to an after-hours clinic?

No pre-specified prompts were supplied for

these (or any other) questions. Questions 1 and 3 don't infer a requirement to provide a specified number of reasons. Question 2 infers a single reason ("is there a reason"), though data captured was not restricted to a single reason. Categories were created and finalised after validation with CM Health Pacific Health Team interviewers. All participants' responses (irrespective of ethnicity) were then classified to all relevant categories (i.e., one participant's response could be classified into more than one category). Wald (normal approximation) 95% confidence intervals (CIs) were used to determine whether proportions were statistically significantly different between ethnic groups.

Chi-squared tests were performed by, and CIs were obtained from, the Open Source Epidemiologic Statistics for Public Health online calculator.¹⁴

Results

A total of 357 participants completed the survey, of whom 353 reported their ethnicity. Among the participants with ethnicity reported, 139 (39%) were Pacific, 66 (19%) Māori and 148 (42%) were non-Māori non-Pacific, nMnP. Two participants identified with more than one ethnicity. In both cases, the two ethnicities they identified with were neither Māori nor Pacific, so these participants were both classified as nMnP. No Pacific participant identified with more than one Pacific ethnicity. More than half (58%) of Pacific participants identified with Samoan ethnicity, followed by Tongan (24%), Cook Island (12%), Niuean (4%), and other Pacific ethnicities (3%).

There were no significant differences in gender, employment or residency status by ethnic group. (Table 1). Mean age increased from 28.6 years for Pacific (SD 27.4), to 34.8 years for Māori (SD 24.1) and 42.4 years for nMnP participants (SD 29.5).

Nearly all Pacific participants (n=135, 98%), as well as Māori (95%) and nMnP (97%) stated they had a usual GP. Only 7.5% of Pacific (and a similar proportion of Māori, 8.8% and nMnP, 12.3%, p=0.500) developed symptoms on the same day as their presentation to the ED. A large proportion (n=59, 42%) of Pacific participants had been to their GP before presenting to the ED. This was not statistically significantly different for Māori (n=19, 30%) or nMnP (n=59, 40%) (p=0.215).

A total of nine categories represented the reasons 329 participants (93%) had attended the ED for non-urgent conditions (Table 2). Responses for

the remaining 24 participants could not be classified because their response related to their presenting complaint rather than health service access (n=21) or their response was too brief to be able to be interpreted (n=3).

Among the responses that were able to be classified, the most frequently reported reason for attending the ED for a non-urgent condition among Pacific participants was that they were advised to do so (41%, 95% CI 33–50%). This was also the most frequently reported reason for ED attendance by Māori (30%, 18–42%) and nMnP (35%, 27–43%), and 95% confidence intervals for the proportion reporting this reason (as with other reasons) by ethnic group overlapped (Figure 1).

Discussion

This cross-sectional, opportunistic survey of patients who self-presented to CM ED in June 2019 with non-urgent conditions found that 58 (42%) of Pacific (and similar proportions of Māori [30%] and nMnP [40%], $p=0.215$) participants had been to their GP prior to presenting to the ED. The most common reasons for ED attendance with a non-urgent condition among Pacific (as well as for Māori and nMnP) participants was advice by a health professional (41%, 95% CI 33–50%), (2) usual care unavailable (28%, 20–36%), (3) symptoms not improving (21%, 14–28%), and (4) symptoms too severe to be managed elsewhere (19%, 12–26%).

This study indicates that healthcare providers are a frequent driver of Pacific people's non-urgent use of the ED, that most Pacific people are aware of the need to seek alternative healthcare providers, that there are barriers to Pacific people using usual care for unplanned healthcare concerns and that findings were similar for Māori and nMnP CM ED patients. The findings of this study are largely consistent with previously published literature on the reasons for Pacific peoples' use of EDs for non-urgent conditions, including studies from New Zealand^{10,12,15} and the United States of America.^{16,17}

New Zealand EDs are insufficiently funded to provide large volumes of non-urgent care,^{18–20} have not been adequately resourced to keep up with increasing volumes of urgent, as well as non-urgent, presentations,^{21–23} and have been subject to ongoing competing priorities for health service investment.²⁴ Even with the New Zealand health system reform and consolidation of district health boards into a single entity, it is unlikely that there

will be sufficient funding to adequately expand EDs to keep up with ever-increasing demand. Further, it is unlikely to be feasible to train and retain enough healthcare workers to keep up with the increasing number of patients under the current model of care.²⁵ There are also arguments against EDs accommodating all of this increased demand in the first place,⁶ particularly when a substantial proportion of the demand is for non-urgent conditions, which Manatū Hauora – Ministry of Health says should be assessed and treated in primary care.²⁶ The rising number of presentations and the limitations in ED expansion have led to an unsustainable situation for both patients and staff over the past few years, with consequently overcrowded EDs, unacceptable waiting times and burnt out staff.²⁷

Strategies to address this mismatch between ED capacity and demand have attempted to redirect people presenting to EDs with non-urgent conditions to alternative providers. Three main types of strategies have been implemented: 1) providing alternative acute care options to which GPs and ambulances can direct patients (such as Canterbury's Community-Based Acute Care Service²⁸ and Hawke's Bay's Hospital at Home initiative²⁹), 2) educating the public about the need to keep the ED free for genuine emergencies,^{30–32} and 3) redirecting patients presenting with non-urgent conditions at the front door. An example of the latter approach is Emergency Q™, an app in use at CM Health as well as other providers across New Zealand.³³ This app gives patients real-time data on waiting times at their nearest ED alongside other after-hours clinics in the area to encourage people to use other services. In some areas, there is the ability for the ED to issue vouchers through the app for free consultations at after-hours clinics and taxi chits to get to those clinics.¹¹

The patient-directed initiatives appear to have been developed with a number of implicit underlying assumptions. These are that patients have limited awareness of alternative healthcare providers and have presented to the ED without seeking alternative care first. These initiatives also appear to assume that cost and transport are significant factors in patients presenting to EDs. In order to be effective at appropriately and equitably reducing the demand on EDs, the underlying assumptions of the initiatives—both explicit and implicit—need to be concordant with the underlying reasons driving patient presentation to the ED with conditions that may have been better managed elsewhere.

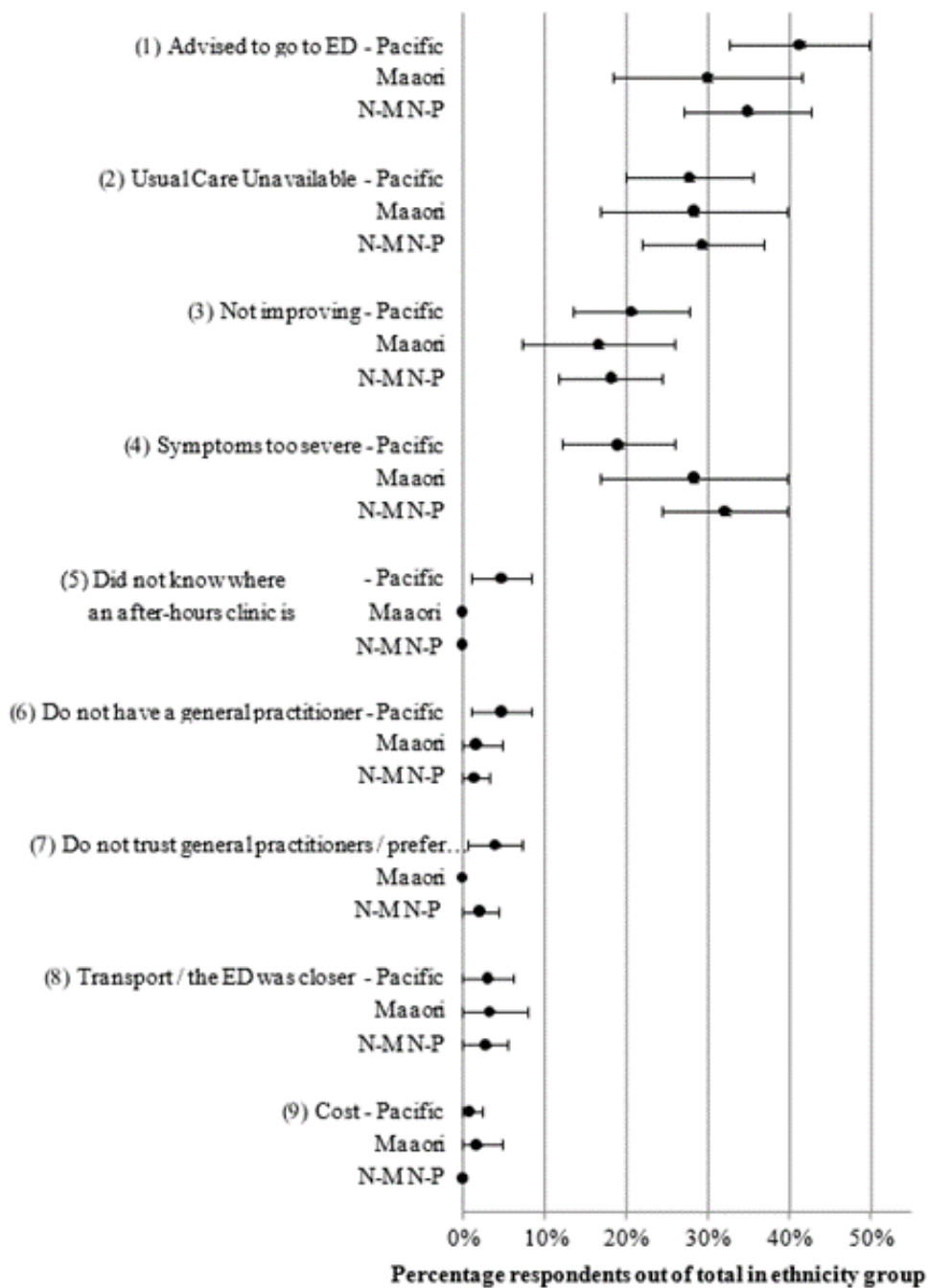
Table 1: Socio-demographic characteristics by ethnic group.

Characteristic	Pacific	New Zealand Māori	Non-Māori non-Pacific	P-value (Chi-square test)
	n=139	n=66	n=148	
	n (% of those with available data by column/ethnic group)			
Gender				
Female	70 (50%)	27 (41%)	76 (51%)	0.340
Male	69 (50%)	39 (59%)	72 (49%)	
Missing	0	0	0	
Age group				
0–14 years	51 (42%)	22 (35%)	31 (22%)	0.000
15–65 years	48 (39%)	36 (58%)	67 (48%)	
>65 years	23 (19%)	4 (6%)	42 (30%)	
Missing	17	4	8	
Employed				
Yes	30 (22%)	17 (26%)	48 (32%)	0.057
No	109 (78%)	48 (74%)	100 (68%)	
Missing	0	1	0	
Residency				
Yes	138 (99%)	66 (100%)	142 (96%)	0.340
No	1 (1%)	0 (0%)	6 (4%)	
Missing	0	0	0	

Table 2: Reasons for going to the ED by ethnic group.

Reasons (more than one could be assigned to each individual)	Pacific	New Zealand Māori	Non-Māori non-Pacific	Total
	N=126	N=60	N=143	
	n, % of those with available data by column/ethnic group (95% CI)			
(1) Advised to go to ED	52, 41% (33% to 50%)	18, 30% (18% to 42%)	50, 35% (27% to 43%)	120
(2) Usual care unavailable	35, 28% (20% to 36%)	17, 28% (17% to 40%)	42, 29% (22% to 37%)	94
(3) Not improving	26, 21% (14% to 28%)	10, 17% (7% to 26%)	26, 18% (12% to 25%)	62
(4) Symptoms too severe	24, 19% (12% to 26%)	17, 28% (17% to 40%)	46, 32% (25%, 40%)	87
(5) Did not know where an after-hours clinic is	6, 5% (1% to 8%)	0	0	6
(6) Do not have a GP	6, 5% (1% to 8%)	1, 2% (0% to 5%)	2, 1% (0% to 3%)	9
(7) Do not trust GPs/prefer the ED	5, 4% (1% to 7%]	0	3, 2% (0% to 4%)	8
(8) Transport/the ED was closer	4, 3% (0% to 6%)	2, 3% (0% to 8%)	4, 3% (0% to 6%)	10
(9) Cost	1, 1% (0% to 2%)	1, 2% (0% to 5%)	0	2

Figure 1: Reasons for going to the ED by ethnic group, % and 95% CI.



Note. N-M N-P: Non-Maaori Non-Pacific

Our study, as well as other studies that have investigated the reasons for non-urgent ED use among Pacific,^{10,12,15–17} as well as general^{34,35} populations, suggest that some of these assumptions are not correct. Without concordance between the assumptions and the true drivers, initiatives to keep EDs free may have a negative impact on equity. Potential unintended consequences might include a) turning away patients with truly ED-level health needs, b) redirected patients not seeking further care so that their condition deteriorates until critical, and c) patients are reluctant to seek healthcare in the future because they felt unwelcome during this encounter. These risks are likely to be magnified in populations that have been underserved and marginalised already by the current healthcare system, such as Māori and Pacific in New Zealand.

The findings of our research are consistent with those of a cross-sectional two-part survey that was conducted over a 2-week period in late November 2012 and mid-July 2013. This survey was set in 11 Accident and Medical clinics (A&Ms) and six EDs in the Auckland region, as part of an evaluation of an A&M initiative in which patient co-payments for medical visits to participating A&Ms, some of which had opening hours extended, were subsidised.³⁶ A total of 540 A&M (25% Pacific) and 447 ED (22% Pacific) patients were surveyed by university researchers. While they found patient choice between A&Ms and EDs was influenced by a range of factors, including “convenience, proximity to care, confidence (particularly in ED), access to transport, and cost (particularly for quintile 5 patients),” they noted the importance of “interface between services is an important contributory factor”.³⁶ They further noted that:

“A key factor is referral and advice by a health professional to a particular care provider. GPs often advise people to attend ED as a safe option. Many if not most referrals are appropriate, however some ED staff respondents highlighted GP referral as a common reason for what they saw as inappropriate ED attendance.”³⁶

To our knowledge, this is the largest Pacific-led study that has directly asked Pacific patients themselves why they presented to the ED for non-urgent conditions. The study used both quantitative and qualitative methods. In addition, the study focused on the perspective of patients by asking them directly, using open questions, on

why they had used the ED, with no limit on the number of categories into which they could be classified. The study had a specific focus on the perspective of Pacific patients through its design, implementation and interpretation by the Pacific Health Team of CM Health and oversight of this analysis by a senior Pacific health researcher (Vili Nosa).

The limitations of the study are that the survey was conducted for operational service delivery improvements, and not intended for research, which may limit the generalisability of findings to other populations. There was potential for selection bias. Data were not available on how many patients were approached or declined to participate, and how they may have been different from those that did participate. Staff involved in the survey did observe that many patients who declined to participate were unable to do so because they were in pain. Responses may have been subject to social desirability bias, as data were collected in the ED, which can be a highly stressful environment, by members of the Pacific Health Team, who may have been perceived as having authority over participant care. Social desirability bias may have been compounded for Pacific participants as interviewers were also members of the Pacific community. In addition, there was the potential for misinterpretation of data for participants (information bias) where this was provided by an accompanying person on their behalf, as well as where translation was required, which was not undertaken by official interpreters. Unfortunately, no data were available to determine the extent to which data were provided indirectly (either by an accompanying person and/or via translation), though it was observed by staff that administered the survey that most adults completed the survey themselves. It should be noted that in the case of children, completion of the survey by their caregiver or parent is appropriate here because it is them (not the child themselves) who would have made the decision to attend ED. Finally, data collection coincided with the onset of winter when health services tend to experience peak demand due to seasonal increases in influenza-like illness. Findings of this cross-sectional study may therefore not necessarily reflect the performance of the health system during non-peak periods.

Despite the limitations noted above, this research is significant, because when considered with previously published literature, it identifies a potential discrepancy between the assumptions

made behind current ED turnaround initiatives to redirect patients away from the ED and actual need. Multiple drivers underlie non-urgent use of EDs by Pacific and other ethnic groups. These drivers need to be considered in the design, implementation, and evaluation of initiatives that discourage non-urgent use of EDs to ensure that such initiatives are effective, equitable, and unintended consequences are avoided.

More broadly, this research highlights gaps between our primary and secondary health services and underlying systems issues. These

systems issues must be addressed in order to meet health system legislative responsibilities, which mandate equitable outcomes for all New Zealanders, including Pacific peoples.³⁷ Urgent health systems change is needed, including strengthening connections between primary and secondary care (possibly through including primary care in our EDs and increasing the size of our primary care workforce), in order to address the ongoing, substantial and unjust health inequities experienced by Pacific peoples.⁷

COMPETING INTERESTS

Catherine Yang was employed as Acting Manager of Hospital Funding at Counties Manukau Health at the time this research was conducted. Catherine Yang undertook this research under the supervision of Vanessa Selak and Vili Nosa, in partial fulfilment of public health medicine specialist training requirements. Vanessa Selak and Vili Nosa have no competing interests to declare.

ACKNOWLEDGEMENTS

We thank the patients and families for participating in this research and Counties Manukau staff (in particular Dr Vanessa Thornton, Doana Fatuleai and the Pacific Health team) for undertaking the survey. We acknowledge Elizabeth Powell, late General Manager of Pacific Health at Counties Manukau, for her oversight of this data collection and for her lifetime contribution of advocacy and advancement of Pacific Health in Aotearoa New Zealand. We thank Health Workforce New Zealand and the New Zealand College of Public Health Medicine for their payment of a stipend to Catherine Yang to undertake this research.

AUTHOR INFORMATION

Catherine J Yang: Public Health Registrar, School of Population Health, Faculty of Medical and Health Sciences, The University of Auckland, Auckland, New Zealand.

Vanessa Selak: Senior Lecturer, Epidemiology and Biostatistics, School of Population Health, Faculty of Medical and Health Sciences, The University of Auckland, Auckland, New Zealand.

David Schaaf: Principal Advisor Pacific, Te Aho o Te Kahu Cancer Control Agency, Wellington, New Zealand.

Vili Nosa: Associate Professor, Pacific Health, School of Population Health, Faculty of Medical and Health Sciences, The University of Auckland, Auckland, New Zealand.

CORRESPONDING AUTHOR

Vanessa Selak: Epidemiology and Biostatistics, School of Population Health, Faculty of Medical and Health Sciences, The University of Auckland, Auckland 1142, New Zealand. Ph: +64 9 923 6509
E: v.selak@auckland.ac.nz

REFERENCES

1. Association of Salaried Medical Specialists. Hospitals on the Edge. Association of Salaried Medical Specialists [Internet]. 2019 Nov 16 [cited 2021 Jan 19]. Available from: <https://asms.org.nz/wp-content/uploads/2022/05/Hospitals-on-the-Edge.pdf>.
2. Emergency department use 2014–2015 [Internet]. Manatū Hauora – Ministry of Health; c2016 [cited 2021 Jan 19]. Available from: <https://www.health.govt.nz/publication/emergency-department-use-2014-15>.
3. Di Somma S, Paladino L, Vaughan L, Lalle I, Magrini L, Magnanti M. Overcrowding in emergency department: an international issue. *Intern Emerg Med*. 2015 Mar;10(2):171-5. doi: 10.1007/s11739-014-1154-8.
4. Poku BA, Hemingway P. Reducing repeat paediatric emergency department attendance for non-urgent care: a systematic review of the effectiveness of interventions. *Emerg Med J*. 2019 Jul;36(7):435-442. doi: 10.1136/emermed-2018-207536.
5. Van den Heede K, Van de Voorde C. Interventions to reduce emergency department utilisation: A review of reviews. *Health Policy*. 2016 Dec;120(12):1137-1349. doi: 10.1016/j.healthpol.2016.10.002.
6. Durand AC, Gentile S, Devictor B, Palazzolo S, Vignally P, Gerbeaux P et al. ED patients: how nonurgent are they? Systematic review of the emergency medicine literature. *Am J Emerg Med*. 2011 Mar;29(3):333-45. doi: 10.1016/j.ajem.2010.01.003.
7. Health and Disability System Review – Final Report [Internet]. Manatū Hauora – Ministry of Health; c2020 [cited 2021 Jan 19]. Available from: <https://www.health.govt.nz/publication/health-and-disability-system-review-final-report>.
8. New Zealand Health Survey [Internet]. Manatū Hauora – Ministry of Health; c2022 [cited 2020 Jan 8]. Available from: <https://www.health.govt.nz/nz-health-statistics/national-collections-and-surveys/surveys/new-zealand-health-survey>.
9. Grumbach K, Keane D, Bindman A. Primary care and public emergency department overcrowding. *Am J Public Health* 1993 Mar;83(3):372-8. doi: 10.2105/ajph.83.3.372.
10. Sopoaga F, Parkin L, Gray A. A Pacific population's access to and use of health services in Dunedin. *N Z Med J*. 2012 Oct 26;125(1364):27-36.
11. Hospital Advisory Committee (HAC) Meeting 28 August 2019 [Internet]. Te Whatu Ora Health New Zealand Counties Manukau; c2019 [cited 2022 Nov 17]. Available from: https://countiesmanukau.health.nz/assets/About-CMH/Board-and-committees/HAC/20190819_HAC_Combined_Papers_Public.pdf.
12. Thornton V, Fogarty A, Jones P, Ragaban N, Simpson C. Why do patients self-present to Middlemore Hospital Emergency Department? *N Z Med J*. 2014 May 23;127(1394):19-30.

13. Thomas DR. A General Inductive Approach for Analyzing Qualitative Evaluation Data. *Am J Eval.* 2006;27(2):237-246. doi: 10.1177/1098214005283748.
14. OpenEpi Menu [Internet]. Open Source Epidemiologic Statistics for Public Health, c2013 [cited 2021 Jan 19]. Available from: https://www.openepi.com/Menu/OE_Menu.htm.
15. Blaker L. Identifying the health needs of seasonal workers from the Pacific. *Kai Tiaki Nursing New Zealand* 2019;25(8):36-38.
16. Johnson PJ, Ghildayal N, Ward AC, Westgard BC, Boland LL, Hokanson JS. Disparities in Potentially Avoidable Emergency Department (ED) Care: ED visits for ambulatory care sensitive conditions. *Med Care.* 2012 Dec;50(12):1020-1028. doi: 10.1097/MLR.0b013e318270bad4.
17. Blaisdell-Brennan HK, Goebert D. Health care utilization among women on O'ahu: Implications for Native Hawaiian women. *Pac Health Dialog.* 2001 Sep;8(2):274-9.
18. Public Agenda 15 May 2019 [Internet]. Capital & Coast District Health Board; 2019 [cited 2022 Nov 22]. Available from: <https://www.ccdhb.org.nz/about-us/advisory-committees/ccdhb-hsc-public-meeting-papers-may-2019.pdf>.
19. Waikato District Health Board 2018/19 Annual Report [Internet]. Te Whatu Ora Health New Zealand Waikato; 2019 [cited 2021 Jan 19]. Available from: <https://www.waikatodhb.health.nz/about-us/key-publications/>.
20. Hospital Advisory Committee (HAC) Meeting Wednesday 31 July 2019 [Internet]. Waitematā District Health Board; 2019 [cited 2022 Nov 22]. Available from: <https://www.waitematadhb.govt.nz/assets/Documents/board/2019/HAC-Open-Meeting-31.07.19.pdf>.
21. Provider Services 2015/16 Business Plan [Internet]. Auckland District Health Board; 2015 Oct [cited 2021 Jan 19]. Available from: <https://www.adhb.health.nz/assets/Documents/About-Us/Planning-documents/Provider-Services-Business-Plan-2015-16.pdf>.
22. Strategic Assessment Immediate Demand Programme [Internet]. Counties Manukau Health; 2017 Dec [cited 2021 Jan 19]. Available from: <https://www.countiesmanukau.health.nz/assets/About-CMH/Reports-and-planning/fc0954025a/2017-Immediate-Demand-Programme-Strategic-Assessment-v2.0-for-publication.pdf>.
23. Houlahan M. Generalist approach for ED approved [Internet]. *Otago Daily Times*; c2020 Dec [cited 2022 Nov 22]. 14 Dec 2020. Available from: <https://www.odt.co.nz/news/dunedin/generalist-approach-ed-approved>.
24. Clark D. Letter of Expectations for district health boards and subsidiary entities for 2020/21 [Internet]. Manatū Hauora – Ministry of Health; 2020 Mar [cited 2021 Jan 19]. Available from: https://nsfl.health.govt.nz/system/files/documents/pages/2020-21_ministers_letter_of_expectation.pdf.
25. The New Zealand Medical Workforce in 2019 [Internet]. Te Kaunihera Rata o Aotearoa; 2020 Dec [cited 2021 Jan 19]. Available from: <https://www.mcnz.org.nz/assets/Publications/Workforce-Survey/6be731ea72/Workforce-Survey-Report-2019.pdf>.
26. Interface with primary health care – Guidance for New Zealand emergency departments, June 2011 [Internet]. Te Whatu Ora Health New Zealand; 2023 [cited 2021 Jan 19]. Available from: <https://www.tewhatauora.govt.nz/our-health-system/hospitals-and-specialist-services/emergency-departments/interface-with-primary-health-care/>.
27. Foon E. Nurse says emergency room dangerously understaffed [Internet]. *Radio New Zealand.* 2020 Jan 3 [cited 2022 Nov 22]. Available from <https://www.rnz.co.nz/news/national/406629/nurse-says-emergency-room-dangerously-understaffed>.
28. McGeoch G, Shand B, Gullery C, Hamilton G, Reid M. Hospital avoidance: an integrated community system to reduce acute hospital demand. *Prim Health Care Res Dev.* 2019 Oct 29;20:e144. doi: 10.1017/S1463423619000756.
29. Improving Health Services for Older People in Hawke's Bay [Internet]. Hawke's Bay District Health Board; 2010 [cited 2021 Jan 19]. Available from: <http://www.ourhealthhb.nz/assets/Uploads/Improving-Health-Services-for-Older-People-Strategy.pdf>.
30. Lawrence M. High winter demand continues to plague hospital emergency departments [Internet]. *NZ Herald.* 2018 Aug 27 [cited 2022 Nov 17]. Available from: <https://www.nzherald.co.nz/nz/high-winter-demand-continues-to-plague-hospital-emergency-departments/QFQ7605NHALQOQZV5JZIGZ7EFU/>.
31. Southern District Health Board. 'Plan to be well this winter' campaign kicks off [Internet]. *Otago Daily Times.* 2018 Jul 18 [cited 2022 Nov 17]. Available from: <https://www.odt.co.nz/features/sponsored-content/story/%E2%80%98plan-be-well-winter%E2%80%99-campaign-kicks>.
32. Te Whatu Ora Health New Zealand Taranaki. Taranaki DHB launches winter ED campaign [Internet]. Te Whatu Ora Health New Zealand Taranaki. 2017 Jul 13 [cited 2022 Nov 17]. Available

- from: https://www.tdhb.org.nz/news/documents/media_release_2017_07_13.shtml.
33. Emergency Q™. Users of Emergency Q [Internet]. Emergency Q; c2022 [cited 2022 Nov 22]. Available from: <https://www.emergencyq.com/index.html>.
 34. Coster JE, Turner JK, Bradbury D, Cantrell A. Why Do People Choose Emergency and Urgent Care Services? A Rapid Review Utilizing a Systematic Literature Search and Narrative Synthesis. *Acad Emerg Med*. 2017 Sep;24(9):1137-1149. doi: 10.1111/acem.13220.
 35. Uscher-Pines L, Pines J, Kellermann A, Gillen E, Mehrotra A. Emergency department visits for nonurgent conditions: systematic literature review. *Am J Manag Care*. 2013 Jan;19(1):47-59.
 36. Tenbensen T, Edlin R, Wilkinson-Meyers L, Field A, Walton L, Appleton S et al. Evaluation of A&M, HML Telephone Triage, and St John Transport Initiatives [Internet]. Uni Services, 2014 May 16 [cited 2021 Jan 19]. Available from: https://canvas.auckland.ac.nz/files/6616887/download?download_frd=1.
 37. Pae Ora (Healthy Futures) Act 2022 [Internet]. Parliamentary Counsel Office New Zealand Legislation, 2022 [cited 2022 Aug 6]. Available from: <https://www.legislation.govt.nz>.

Appendix 1: Survey questionnaire and response options.

Question	Data type	Options (if any)
Gender	Free text	
Ethnicity	Free text	Self-defined; no limits on the number of ethnicities
Residency status	Binary	
Employment status	Free text	
Time of arrival to ED	DD/MM/YY time	
Country of birth	Free text	
Do you have a GP?	Multiple choice	Yes/no/don't know
Have you seen your GP in the last 1–2 days?	Binary	
If yes, what did you see the GP for?	Free text	
Have you tried to contact your GP or GP nurse today?	Binary	1=Yes 2=No
If yes, what was their advice about what to do for health care?	Free text	
If no, is there a reason why you didn't contact your GP or make an appointment to see them?	Free text	
Where does your GP suggest you go for care outside of office hours or in case he/she cannot be contacted?	Multiple choice	1=Accident/Medical/After Hours 2=Emergency care/department 3=Another GP 4=Other
Can you tell us how you ended up in ED today and not go to your GP/family doctor (presenting complaint)?	Free text	
Why didn't you go to Accident & Medical Centres/after hours	Free text	
When did you get sick? (dd/mm/yyyy)	Date	
How did you get here? (mode of transport)	Free text	

Appendix 1 (continued): Survey questionnaire and response options.

Question	Data type	Options (if any)
EC referral: Who referred you to EC today?	Multiple choice	1=Self-referral 2=GP 3=Accidental & Emergency care 4=Family member 5=Healthline 6=Other (explain)
Reasons for other?	Free text	

Attitudes towards the mixing of COVID-19 vaccinated and unvaccinated patients in multi-bed hospital rooms

Sylvi Low, Sonya Aum, Luke Nie, Jacob Ward, Khanh Nguyen, Leilani Pereira, Jenny Mi, Jocelyn Soti, Ben Harford, Robert J Hancox, John D Dockerty

ABSTRACT

AIM: To explore patient and staff views about the mixing of COVID-19 vaccinated and unvaccinated patients in multi-bed hospital rooms.

METHODS: We conducted a mixed methods study with paper surveys and structured interviews. Self-administered surveys were undertaken with inpatients on the general medicine, general surgery, orthopaedic and respiratory wards in Dunedin Public Hospital. Face-to-face interviews were conducted with ward staff including consultants, registrars, charge nurses, registered nurses and nurse managers. The study was undertaken in February 2022, at the start of the first New Zealand wave of the Omicron variant.

RESULTS: Of 118 eligible patients, 63 agreed to participate. Sixty (95%) of these patients were vaccinated for COVID-19. Most patients (59%) thought that vaccinated and unvaccinated people should be accommodated in separate hospital rooms. Vaccinated patients felt more comfortable sharing a multi-bed room with others of the same COVID-19 vaccination status as themselves than with unvaccinated patients. Participants who thought that they were at higher risk of severe illness from COVID-19 were more likely to support separation of patients based on vaccination status. Fifteen ward staff were interviewed: most would prefer the hospital to separate patients by vaccination status but were aware this would present practical and ethical problems and thought that current arrangements were adequate.

CONCLUSION: While most vaccinated patients and staff wanted patients to be separated according to their COVID-19 vaccination status, the current precautionary measures for COVID-19 were viewed by most staff members as adequate.

COVID-19 vaccination is the most effective method of providing high protection against severe illness, hospitalisation and death from SARS-CoV2. Despite this, the issue of vaccination has been divisive.¹⁻³ By February 2022, it was mandatory for people working in New Zealand's health and disability sector to be fully vaccinated (two doses of the vaccine) as they were at high risk of being infected with COVID-19 and of passing it to vulnerable people.⁴ Based on the expectation that vaccination would reduce the risk of transmitting infection, most businesses, except for hospitals and other essential services, required adults to show a "vaccine pass" before they could enter to prove they'd been vaccinated to minimise the spread of COVID-19 in the community.⁵

Most New Zealand hospitals, including Dunedin Public Hospital, have multi-bed rooms, which are likely to be shared by both vaccinated and unvaccinated patients. Inpatients do not have the right to know other patients' vaccination status or whether they have a transmissible disease, and

they are not usually given a choice over who they share a room with. Since patients spend most of the day in the same room, the risk of transmission from an unsuspected COVID-19 infection may be substantial.⁶ Previous reports describe a 21-39% risk of transmission to hospital roommates when one of the occupants has COVID-19. These studies suggest using vaccination status to determine bed or room placement, however, the population vaccination rates in these studies were unknown.^{6,7}

Many hospital patients have a high risk of severe illness from COVID-19 due to underlying chronic conditions, immunosuppression, or simply because of older age and frailty.⁸ It is important to assess and manage patients' feelings and expectations about sharing hospital rooms, as failure to address potential concerns can cause anxiety or result in them being reluctant to attend hospital. This study was conducted in February 2022 at the beginning of the first Omicron wave in New Zealand when community case numbers were increasing rapidly across the country (from 202

on 8 February 2022 to 1,160 on 16 February 2022). We aimed to provide a snapshot of patients' and healthcare professionals' views on the mixing of vaccinated and unvaccinated patients in multi-bed hospital rooms. It is hoped that the information will inform policies for future phases of this and other pandemics.

Methods

Community setting and hospital policies at the time of the study

New Zealand adopted an elimination approach during the first wave of COVID-19 in February 2020. Suppressive strategies such as travel restrictions, mandatory self-isolations for those arriving from overseas, bans on public gathering, border closures and national lockdown resulted in substantial reduction in daily cases, and ultimately in elimination of COVID-19 in New Zealand by May 2020.^{9,10} While there were several small outbreaks occurring in other regions afterwards,¹⁰ the Southern District Health Board (DHB) remained free from COVID-19 until 10 February 2022 (the third day of our study), when it confirmed its first case since May 2020. In the general population, 96% of eligible people in New Zealand had had a first dose of a COVID-19 vaccine, 94% had had two doses and 57% had had a booster by 8 February 2022.

By February 2022, it was mandatory for people working in New Zealand's health and disability sector to be fully vaccinated to reduce their risk of being infected with COVID-19 and passing it to vulnerable people. Other measures included mandatory use of surgical masks for all visitors and patients, N95 masks for staff who have patient contact and physical distancing including limiting the number of people in a room and in a lift.

On 13 February 2022, Dunedin Public Hospital announced that all patients were to undergo a COVID-19 PCR test on admission to hospital. On the same day, new visitor policies included limiting each patient to two registered visitors, only one visitor per day, reduced visiting hours from 2–6pm, door screening and no mask exemptions. There was no requirement for visitors to have vaccination passes.

Patient survey

Inclusion criteria: patients admitted to Dunedin Public Hospital in one of four wards—General Medicine, General Surgery, Orthopaedics, or Respiratory—were invited to participate in a

paper-based survey from 8 February 2022 to 16 February 2022, inclusive.

Exclusion criteria: charge nurses were asked to identify patients who were too frail or ill to take part. We also excluded children (and their parents) under 16—because COVID-19 vaccination had only recently been approved for children—patients unable to provide informed consent, where there would be a substantial language barrier (the survey was only available in English), patients under isolation precautions and patient who were absent or unavailable after two attempts to reach them.

Three interviewers (JW, LP, JS) administered the surveys. Participants were offered help interpreting questions if needed. We collected demographic data, education level, COVID-19 vaccination status, their perception of their own risk of illness from COVID-19, whether they were in a multi-bed or a single-bed room and how many roommates they had. Participants were asked to rate how comfortable they were with sharing a room with patients of different, same and unknown vaccination status on a five-point scale from 1 (very uncomfortable) to 5 (very comfortable). Patients were further asked for their opinions (yes/no/don't know) on: whether patients of different COVID-19 vaccination status should be located in separate rooms; whether they have the right to know their roommates' COVID-19 vaccination status; whether their roommates have the right to know their vaccination status; and whether hospital visitors should be required to be fully vaccinated for COVID-19. We also asked for suggestions for the hospital to protect patients against COVID-19 and to address other issues regarding multi-bed hospital rooms (Appendix 1).

Staff interviews

Consultant physicians, medical registrars, registered nurses and charge nurse managers involved in the care of patients on participating wards were invited to participate in a structured face-to-face interview. Interviews were approximately 10 minutes in length and followed a structured, pre-approved template of six questions centred around the staff's views on the mixing of differing vaccination status patients, the risks involved and the current or possible future policy (Appendix 2). All interviews were conducted by SL with LN acting as a scribe.

The study was approved by the University of Otago Human Ethics Committee. Ngāi Tahu Māori research consultation was undertaken via the

University of Otago's research procedure.

Analyses

Descriptive statistics of patient survey data included percentages, means, 95% confidence intervals (CI) and medians. The qualitative aspect of the patient surveys and staff interviews was analysed by LN and SA independently using thematic analysis.¹¹

Results

Sixty-three out of 118 eligible patients (53%) agreed to participate. Most identified as NZ European (81%), with 6% identifying as Māori, 2% Cook Island Māori, and 11% other ethnicities. Most were 55 years old and above. Out of the 63 participants, only one was unvaccinated and two preferred not to say. Only three participants (5%) had been previously tested positive for COVID-19. Fifty-four of the 63 participants were in multi-bed hospital rooms (Table 1).

Overall, 37 (59%) participants thought patients of different vaccination status should be in separate rooms, while 17 (27%) opposed the idea, and 9 (14%) were unsure. Most participants felt comfortable sharing a multi-bed hospital room with patients of the same vaccination status as themselves, with a mean of 4.4 (95% CI, 4.1–4.7) and a median of 5.0 (on a 5-point scale where 5 = very comfortable, 1 = very uncomfortable). Participants felt less comfortable sharing a room with patients of different vaccination status and patients of vaccination status unknown to them (mean 2.6 [95% CI, 2.2–3.0], median 2; mean 2.8 [95% CI, 2.4–3.2], median 2; respectively) (Table 2).

Similar proportions of participants thought that they should or should not have the right to know the COVID-19 vaccination status of other patients sharing a room with them (n=28 (45%) and 25 (40%) respectively). Thirty-four participants (55%) said that other patients sharing a room with them should have the right to know their COVID-19 vaccination status; 23 (37%) opposed. Most participants (n=46 [73%]) thought that hospital visitors should be required to be fully vaccinated for COVID-19, whereas 10 (16%) opposed (Table 2).

Participants who opposed (17 out of 63) separating patients based on their vaccination status felt more comfortable sharing a room with all patients regardless of their vaccination status than participants who supported or were unsure about separation (Table 3). Participants who self-identified as having a higher risk of severe illness from COVID-19

supported the separation of patients based on vaccination status more strongly than those without self-identified high risk (not shown). All participants who were unvaccinated or preferred not to say (3 out of 63) chose “no” for the ideas of separating patients based on their vaccination status, having the right to know each other's vaccination status or making it mandatory for hospital visitors to be fully vaccinated.

Qualitative responses

Table 4 is a summary of patients' free-text responses on the separation of multi-bed hospital rooms based on vaccination status and suggestions for protecting patients from COVID-19. In particular, most patients who favoured the separation of patients by vaccination status commented on minimising the risk to individuals, however, many also acknowledged the practical limitations around maintaining such separation. Resource limitation was a common argument raised against separation by vaccination status, along with ethical considerations such as patient rights and discrimination. Some patient responses were polarised and highly emotive on both sides. One patient commented on the need to “*stop the drama*” while another stated that “*we need to stop this rot in society*”.

Staff interviews

Fifteen staff (of 49 invited to participate) were interviewed. This included six senior medical officers, a registrar, four charge nurse managers, three registered nurses and one director of nursing. A summary of staff attitudes towards the separation of multi-bed rooms by vaccination status is outlined in Table 5.

Protecting the unvaccinated and vulnerable patients and fairness for vaccinated patients were raised by staff in favour of separation. Similar to patient views, practical limitations and ethical issues were some of the arguments against separation. Discrimination and the need for equitable healthcare was a concern raised by staff, particularly regarding ethnic discrepancies:

“There are ethnic groups in NZ with lower vaccination rates, particularly Māori. Even if this wasn't the intention, it could give the appearance of an ethnicity-based policy. It would be unintended but it would still occur—and we don't do that in the healthcare system.”

Other arguments raised against separating patients by vaccination status include vaccination status as a poor indicator of true infection and the increased risk of infection outside the hospital generally. Regardless of viewpoint on separating patients, the right to healthcare and/or the health practitioners' obligation to provide care was universally acknowledged by staff.

A few participants questioned the efficacy of policies and protocols, and a few stated that COVID-19 is a constantly changing situation as new information emerges.

“The current hospital policies seem to change quite quickly, and quite regularly, the response in the first wave was different to the requirements in the Delta wave... And I think that it's difficult to set firm rules and boundaries because the whole knowledge of various mutations of COVID is such that it's a fluid situation and you have to adjust accordingly.”

Discussion

To our knowledge, this is the first study to explore hospital patient and staff perspectives on the mixing of patients of different vaccination status in shared hospital rooms either in New Zealand or internationally. We found that more than half the patients were in favour of separating patients by vaccination status and that most patients felt comfortable sharing a multi-bed hospital room with patients of the same vaccination status as themselves.

Patients and staff who favoured the separation of patients into rooms by vaccination status believed that it would help to reduce the risk of COVID-19 transmission. In contrast, patients and staff who opposed separation thought that doing so would provide insignificant benefit, given the potential for transmission between vaccinated and unvaccinated people due to breakthrough infections.

Vaccination reduces the risk of COVID-19 transmission, infection and severity of infection in people of the same household,^{12,13} and the transmission rate between roommates and between household members may be comparable.^{6,7,14,15} There is little published information on nosocomial transmission in New Zealand, although several hospital outbreaks have occurred with an estimated 30–50% of contacts in multi-bed rooms becoming infected (H McGann, personal communication). This suggests that separating

patients by vaccination status may reduce the spread of an outbreak before diagnosis has taken place. A recently published New Zealand paper by Watson et al.¹⁶ found that despite a large number of breakthrough infections among the vaccinated, unvaccinated individuals are 3.3 times more likely to be infected and 20 times more likely to be hospitalised, hence they have a greater risk of bringing COVID-19 into hospital even if they are admitted for other reasons.¹⁶

In terms of the implementation of separate rooms for vaccinated and unvaccinated patients, some patients and most staff did not see it as practically and/or ethically possible and thought that current practices to reduce risk were adequate. One staff member thought that separation by vaccination status would not work unless staff were also compartmentalised, wherein small groups of staff would have no physical connection to other groups. There is evidence that doing this reduces the risk of transmission,¹⁷ however, this may not be practical given the workforce constraints. Other international studies have described patients and staffs' experiences with social isolation, loneliness and stigma because of physical separation, including having their own room and restricted visitation due to COVID-19 policies.¹⁸ This highlights the balance that needs to be made between theoretical interventions to potentially reduce the risk of infection and the practicalities of running the hospital and looking after patients' wellbeing.

Some patients and staff appeared to consider being unvaccinated as equivalent to being COVID-positive, even though vaccines are not 100% effective and breakthrough infections can still occur.^{16,19} It may be that conceptualising preventive measures designed to reduce spread at a population level (i.e., vaccinating the entire population) and the alternative (not being vaccinated) does not translate well to the perceived risk at an individual level.²⁰

There was no consensus on whether a patient has the right to know their roommates' vaccination status, reflecting the dilemma of weighing up the right to information that might have direct health consequences on oneself versus the right to health information privacy. If patients had no choice but to disclose their vaccination status in order to be admitted, some may choose to not seek healthcare to keep that information private. Patients have a right to keep their health information private and also have the right to healthcare regardless of vaccination status.

Most patients (73%) thought that visitors should be fully vaccinated. Many argued that visitors are, technically, not essential personnel in providing healthcare; thus, they are not included within the “right to healthcare”. By contrast, some staff members argued that visitors played critical roles in patient care and should not be excluded. Three days after the first Omicron COVID-19 case in Dunedin (13 February 2022), Dunedin Public Hospital introduced new policies limiting patients to two registered visitors per patient with only one visitor per day, reducing visiting hours, screening visitors at the door and not allowing face-mask exemptions. Similar policies are widely practiced in other countries, but their impact on COVID-19 control has been unclear.^{21,22} In New Zealand there has been no requirement for hospital visitors to have vaccination passes and introducing such a policy would likely present practical and ethical challenges.

None of the staff we interviewed knew of any ward policies that were in place to reduce the mixing of patients with different vaccination statuses. The main additional measure suggested by the staff was better screening on admission, particularly using more efficient and comprehensive testing. During the conduct of this study (on 13 February 2022), the hospital announced that all patients admitted to wards would undergo a COVID-19 test on admission. This aimed to reduce the risk of transmission by identifying both symptomatic and asymptomatic patients.²³ However, limitations such as false negatives, particularly during the incubation period, and transmission from staff and visitors may still lead to outbreaks in hospitals.²³

Our study provides a snapshot of patient opinions on COVID-19 vaccination status in the middle of the controversy over the government-mandated vaccination in a changing COVID climate and at a time when few people had direct experience of COVID-19 disease. COVID-19 infections have since become widespread and the government mandates for vaccination have been dropped, but transmission of COVID-19 within healthcare settings remains an ongoing concern. At the time of writing, New Zealand is experiencing another uptick of COVID-19 in the community, and it seems likely that we will experience further waves of infection for some time. The likelihood of sharing a hospital room with someone with COVID-19 will reflect the prevalence in the community and we need to better understand the measures that can be taken to minimise nosocomial spread.

Our study, while novel and giving a unique snapshot, had some limitations. Although care was taken to maintain confidentiality of patient's responses, some patients may have discussed the survey with their roommates, which may have influenced their responses. Many patients were excluded (50%) due to the nature of their illness: most of these were too frail/ill, or were under contact precautions. It is likely that these groups have somewhat different attitudes to those included. Given that 93% of patients had received at least two doses of the COVID-19 vaccine, the results are also unlikely to reflect the views of unvaccinated people. Reflecting the demographic composition of Dunedin, there was limited representation of Māori in our sample, with only 6% of participants identified as Māori compared to 16.7% of the New Zealand population. To recruit staff, we emailed every consultant responsible for the four wards and approached nurses, charge nurses and resident medical officers in-person on the wards opportunistically. A low response rate from consultants to our emails is likely to reflect their very high workload at the time. However, we were able to recruit and interview sufficient numbers in-person to reach data saturation.

Priorities for future research include assessing the risk of transmission of SARS-CoV2 in shared hospital rooms and the extent to which this can be minimised by screening patients on admission. Further exploration around the attitudes about COVID-19 isolation and the feasibility of separation of patients is also required. Since the study was conducted, there have been many changes to government policies around COVID-19, such as the removal of vaccine mandates. Many people now have personal experience of COVID-19 infection. These are likely to have also resulted in changes in public opinion with regard to sharing hospital rooms with unvaccinated people, but similar concerns may arise with other vaccine-preventable infections, such as influenza, that could be transmitted in shared rooms.

Conclusion

In summary, both staff and vaccinated patients would prefer to separate patients by COVID-19 vaccination status but are aware of the practical and ethical problems this would cause. There were mixed views on the actual risks involved in mixing unvaccinated and vaccinated patients among patients and staff members, and a key issue was whether vaccination status gives an accurate

prediction of the true risk of COVID-19 transmission. While many patients are concerned about the risk of infection, most staff viewed current precautionary measures as adequate. However,

both patients and staff agreed that faster and more efficient screening of patients and visitors would reduce these risks.

Table 1: Demographics of survey participants.

Demographic variables	Percentage (count)
Age (years)	
16–24	5% (3)
25–34	3% (2)
35–44	3% (2)
45–54	8% (5)
55–64	19% (12)
65–74	29% (18)
75 and over	30% (19)
No answer	3% (2)
Gender	
Male	59% (37)
Female	41% (26)
Ward	
General Medicine	35% (22)
General Surgery	21% (13)
Orthopaedics	40% (25)
Respiratory	5% (3)
Ethnicity	
NZ European	81% (51)
Māori	6% (4)
Cook Islands Māori	2% (1)
Other Pasifika	0% (0)
Other	11% (7)
Been tested and found positive for COVID-19?	
Yes	5% (3)
No	92% (58)
Prefer not to say	3% (2)
Anyone in the household tested positive for COVID-19?	
Yes	0% (0)
No	98% (62)
Prefer not to say	2% (1)

Table 1 (continued): Demographics of survey participants.

Doses of COVID vaccination	
0	2% (1)
1	2% (1)
2	22% (14)
3	71% (45)
Prefer not to say	3% (2)
Do you know the COVID-19 vaccination status of your roommates?	
Yes	3% (2)
No	83% (52)
No answer	14% (9)
Surveyed after first case of Omicron COVID-19 in Dunedin	
Yes	22% (14) 7
No	8% (49)

Table 2: Patients' attitudes towards various issues around vaccination status in the hospital.

Question	Patients' response; % (count)		
	Yes	No	Don't know
Should patients of different vaccination status be in separate rooms?	59% (37)	27% (17)	14% (9)
Do you think that you have the right to know the COVID-19 vaccination status of other patients sharing a hospital room with you?	45% (28)	40% (25)	15% (9)
Do you think that other patients sharing a hospital room with you have the right to know your COVID-19 vaccination status?	55% (34)	37% (23)	8% (5)
Should hospital visitors be required to be fully vaccinated for COVID-19?	73% (46)	16% (10)	11% (7)
	*Mean (95%CI)		*Median
How do you feel about sharing a multi-bed hospital room with patients of the SAME COVID-19 vaccination status as yourself?	4.4 (4.1-4.7)		5
How do you feel about sharing a multi-bed hospital room with patients of DIFFERENT COVID-19 vaccination status as yourself?	2.6 (2.2-3.0)		2
How do you feel about sharing a multi-bed hospital room with patients when you don't know their COVID-19 vaccination status?	2.8 (2.4-3.2)		2

*Patient comfort level was measured on a scale of 1 (very uncomfortable) to 5 (very comfortable).

Table 3: Patients' opinion on whether patients of different vaccination statuses should be in separate rooms, and their comfort level when sharing a multi-bed hospital room.

	How do you feel about sharing a multi-bed hospital room with patients of the SAME COVID-19 vaccination status as yourself?		How do you feel about sharing a multi-bed hospital room with patients of the DIFFERENT COVID-19 vaccination status as yourself?		How do you feel about sharing a multi-bed hospital room with patients when you don't know their COVID-19 vaccination status?	
	Mean (95% CI)	Median	Mean (95% CI)	Median	Mean (95% CI)	Median
Should patients of different vaccination status be in separate rooms?						
Yes (n=37)	4.4 (3.9–4.8)	5	2.1 (1.7–2.5)	2	2.3 (1.8–2.7)	2
No (n=17)	4.4 (3.9–5.0)	5	3.6 (2.9–4.3)	4	3.8 (3.1–4.4)	4
Don't know (n=9)	4.4 (3.9–5.0)	5	2.5 (1.3–3.7)	2	2.7 (1.6–3.8)	2

Patient comfort level was measured on a scale of 1 (very uncomfortable) to 5 (very comfortable).

Table 4: Patient responses based on themes and respective representative quotes.

Should patients be separated by vaccination status?	
Arguments raised in favour	Examples
Minimise risk (to both vaccinated and unvaccinated individuals, including patients and staffs)	“Minimise the risk of unvaccinated becoming infected.” “Have them in different areas—make sure staff’s looked after. No staff = no hospital.”
Arguments raised against	Examples
Resource limitation (space availability, staffing issues and the practicality of maintaining the separation)	“I have no trouble with it. The nurses have enough to do than worrying about patients’ vac status.” “I doubt there would be enough beds to separate patients.”
Discriminatory to separate/right to healthcare	“They should continue to do their jobs and treat all people no matter of vaccinated status... This is one place everyone should be treated equal.” “My opinion—hospital (should) be neutral.”
Right to be vaccinated or not	“We have the right to choose to be vaccinated or not...The hospital must respect this right.”
Breakthrough infection in vaccinated people	“It doesn’t matter what status you are; you could still catch it.”
Other strategies/existing strategies in place	“So long as patients have had a COVID test on admission and are not symptomatic I do not see any problem.” “I feel that strategies are in place. Consider RATs for unvacc.”
Suggestions for hospitals to protect patients from COVID-19	
No suggestion.	“They appear to be doing a great job at present.”
Mask wearing, barcode scanning, RAT testing, visual reminders of policies in the hospital	“Why can the scanning bar codes not [be] used, they are used everywhere else in NZ, so why not on hospital admissions.”

Table 4 (continued): Patient responses based on themes and respective representative quotes.

Learn from other countries	“It seems as if countries other than NZ are letting them mix and are not as fussed about it as they were. Perhaps it is one way of finally getting used to it or perhaps getting rid of it.”
Infrastructure (i.e., better ventilation system, build isolation hospital, room separation based on vaccination status, more single rooms)	“Building the new hospital to include greater capacity to instigate these ideas.”
Policies around visitors (i.e., limit to only vaccinated, limit to one visitor per patient, screen visitors, wear masks, rapid antigen testing before entry)	“Prevent unvaccinated visitors from access.”
Stop worrying about COVID-19	“Stop the drama—people are more likely to die of all the stress with masks, testing etc. than actually dying of or catching COVID.”

Table 5: Staff responses based on themes and respective representative quotes.

Should patients be separated by vaccination status?	
Arguments raised in favour	Examples
Fairness for vaccinated patients	“...vaccinated patients have played their part in the community response to COVID—should they be subject to potentially more risk of catching COVID by being put into a bay with unvaccinated patients?”
Protecting unvaccinated patients	“...the risk of having an unvaccinated person in rooms with vaccinated, they’re at risk but also the person who is unvaccinated is at risk as well.”
Protecting vulnerable patients	“...a separation would be important for those people with risk factors to not be exposed to unvaccinated people. So, your patients who are elderly, or who have the recognised comorbidities or immunosuppressed conditions, should be separated by vaccination.”
Arguments raised against	Examples
Practical issues	“...we already have no beds and no staff, so someone else would have to manage where the unvaccinated people go.”
Limited bed space	“...secondly, just from the pure logistics scenario, we don’t have adequate beds available for medical admissions without any COVID in the community.”
Issues with patient flow	“...even currently without taking into account vaccination status it can be hard to get patients around the ward, so having a specific vaccinated/unvaccinated room would make flow worse.”
Same healthcare providers in contact	‘Personally, I don’t think there are any issues, because the same nurse is going to be looking after those patients. If the same nurse is going to the vaccinated and the unvaccinated patients, it doesn’t matter if they’re in different rooms or not, because the risk is still there.’
Ethnic disparity	“Secondly there are ethnic groups in NZ with lower vaccination rates, particularly Māori. Even if this wasn’t the intention, it could give the appearance of an ethnicity-based policy. It would be unintended but it would still occur—we don’t do that in the healthcare system.”
Risk of transmission elsewhere	“I think overall the risk is so small at this point, I think the risk is so much so much greater from catching COVID from everywhere I think it wouldn’t worry be that I was mistreating a vaccinated patient by putting them in a bay with an unvaccinated, I wouldn’t think I was significantly increasing their risk.”

Table 5 (continued): Staff responses based on themes and respective representative quotes.

Should patients and healthcare providers have the right to know the vaccination status of other patients?	
Arguments raised in favour	Examples
Patients deserve to be informed	“Maybe there’s a transplanted immunosuppressed patient, and they’re in a room with vaccinated and unvaccinated patients, do they have a right to know?”
Staff have no right to privacy	“We don’t have the right to keep this to ourselves.”
Vaccination requirements elsewhere	“Can I say yes and no? I mean probably not, but if it was me, if I was, with the vaccine passports if you go places, you’ve got the choice to go places where you know other people are vaccinated, so it would be natural to have that option here.”
Arguments raised against	Examples
Right to privacy	“No, I do not. It’s private health information to the individual. That would be such a slippery slope, we’ve been here many times in history, HIV for example. It’s unacceptable, even with COVID. I think health information, unless it serves a purpose, you have to protect it.”
Themes generated regarding visitors	Examples
Visitors as controllable risk	“Because while I think all patients should be treated regardless of their vaccination status, visitors are usually, they’re not... an essential part of the picture.”
Visitors as part of patient care	“However, I do understand there might be some concerns if a non-vaccinated family has a family member who is very unwell and possibly going to pass away that refusing access to their family members would be... I think a poor decision.”
Themes generated regarding hospital policy	Examples
Constantly changing situation	“The current hospital policies seem to change quite quickly, and quite regularly... And I think that it’s difficult to set firm rules and boundaries because the whole knowledge and various mutations of COVID is such that it’s a fluid situation and you must adjust accordingly.”
Lack of data	“I think it’s probably a complicated topic that, if you wanted to be evidence based in your approach, would probably take a lot of thought.”
Issues with protocols	“I think this comes probably from my role in trying to develop the response to COVID on the wards with lots of other people but there is a wish to over protocolise a lot of things related to COVID, when actually by creating more and more protocols, we actually make life really challenging for us.”

Table 5 (continued): Staff responses based on themes and respective representative quotes.

Themes generated regarding COVID-19 transmission risks	Examples
Vaccination status as poor proxy for true infection	“What you’re really asking is am I likely to get infected by someone else, and we’re using vaccination status as a surrogate for that risk.”
Overall risk more important than vaccination status	“I don’t think it should be distinguished so much on vaccinated vs unvaccinated, but on risk vs no risk.”
Risk of transmission from vaccinated individuals	“You would expect as many breakthrough infections to be occurring in the vaccinated group as you would infections happening in the unvaccinated group. Because it’s much bigger.”
Personal or staff risk	“As healthcare workers I’m not too concerned about the risk to us, we’re all double vaxxed and boosted, and because we’re the COVID ward we practise the PPE a lot, so I’m not too concerned about the risk.” “Yes, I do, because it puts me at risk, looking after unvaccinated, it is concerning.”
Difficulty quantifying risk	“Humans are bad at understanding risk. We do fear, but we don’t do risk very well. Everyone’s like ‘oh no there’s a case in Dunedin’, but does one case in 100,000 people make you anymore at risk than yesterday?”
Miscellaneous themes	Examples
Right to equitable healthcare	“I think, currently, well overall it’s important that we have a principle of equity of care for patients. So, all patients need to be treated the same, so have the same access to what I hope is good medical care.”
Duty of care	“I think I would say that as a disease COVID doesn’t, isn’t the only disease where people have made, what I would perceive as people making suboptimal decisions in their lives. The guy with lung cancer, or the person breaking their leg biking... We don’t have the luxury in the healthcare setting to choose who we look after; part of the job is to look after everyone regardless of whatever choice they have made in life.”

COMPETING INTERESTS

Nil.

AUTHOR INFORMATION

Sylvi Low, joint first author : Trainee Intern, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

Sonya Aum, joint first author: Trainee Intern, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

Luke Nie: Trainee Intern, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

Jacob Ward: Trainee Intern, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

Khanh Nguyen: Trainee Intern, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

Leilani Pereira: Trainee Intern, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

Jenny Mi: Trainee Intern, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

Jocelyn Soti: Trainee Intern, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

Ben Harford: Trainee Intern, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

Robert J Hancox: Professor, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

John D Dockerty: Associate Professor, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand.

CORRESPONDING AUTHORS

Robert J Hancox: Professor, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand. E: bob.hancox@otago.ac.nz

John D Dockerty: Associate Professor, Department of Preventive & Social Medicine, Dunedin School of Medicine, University of Otago, Dunedin, New Zealand. E: john.dockerty@otago.ac.nz

REFERENCES

- Lopez Bernal J, Andrews N, Gower C, et al. Effectiveness of Covid-19 Vaccines against the B.1.617.2 (Delta) Variant. *New Engl J Med.* 2021;385(7):585-94. doi: 10.1056/NEJMoa2108891.
- Haas EJ, Angulo FJ, McLaughlin JM, et al. Impact and effectiveness of mRNA BNT162b2 vaccine against SARS-CoV-2 infections and COVID-19 cases, hospitalisations, and deaths following a nationwide vaccination campaign in Israel: an observational study using national surveillance data. *Lancet.* 2021;397(10287):1819-29. doi: 10.1016/S0140-6736(21)00947-8.
- Garcia-Beltran WF, St. Denis KJ, Hoelzemer A, et al. mRNA-based COVID-19 vaccine boosters induce neutralizing immunity against SARS-CoV-2 Omicron variant. *Cell.* 2022;185(3):457-466.e4. doi: 10.1016/j.cell.2021.12.033.
- Manatū Hauora – Ministry of Health. COVID-19: Mandatory vaccinations [Internet]. 2022 Apr 8 [cited 2022 May 7]. Available from: <https://www.health.govt.nz/covid-19-novel-coronavirus/covid-19-response-planning/covid-19-mandatory-vaccinations>.
- Hipkins HC. Vaccine pass ready for a Kiwi summer [Internet]. *Beehive*; 2021 Nov 17 [cited 2022 May 8]. Available from: <https://www.beehive.govt.nz/release/vaccine-pass-ready-kiwi-summer>.
- Trannel AM, Kobayashi T, Dains A, et al. Coronavirus disease 2019 (COVID-19) incidence after exposures in shared patient rooms in a tertiary-care center in Iowa, July 2020-May 2021. *Infect Control Hosp Epidemiol.* 2022 Dec;43(12):1910-1913. doi: 10.1017/ice.2021.313.
- Karan A, Klompas M, Tucker R, et al. The Risk of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Transmission from Patients With Undiagnosed Coronavirus Disease 2019 (COVID-19) to Roommates in a Large Academic Medical Center. *Clin Infect Dis* 2022;74(6):1097-1100. doi: 10.1093/cid/ciab564.
- Unite against COVID-19 People at higher risk of severe illness from COVID-19 [Internet]. *New Zealand Government*; 2023 [cited 2022 Feb 12]. Available from: <https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-information-specific-audiences/covid-19-higher-risk-people>.
- Jefferies S, French N, Gilkison C, et al. COVID-19 in New Zealand and the impact of the national response: a descriptive epidemiological study. *Lancet Public Health.* 2020;5(11):e612-e623. doi: 10.1016/S2468-2667(20)30225-5.
- Douglas J, Winter D, McNeill A, et al. Tracing the international arrivals of SARS-CoV-2 Omicron variants after Aotearoa New Zealand reopened its border. *Nat Commun.* 2022;13(1):6484. doi: 10.1038/s41467-022-34186-9.

11. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3(2):77-101. doi: 10.1191/1478088706qp0630a.
12. Shah ASV, Gribben C, Bishop J, et al. Effect of Vaccination on Transmission of SARS-CoV-2. *New Engl J Med*. 2021;385(18):1718-20. doi: 10.1056/NEJMc2106757.
13. Eyre DW, Taylor D, Purver M, et al. Effect of Covid-19 Vaccination on Transmission of Alpha and Delta Variants. *New Engl J Med*. 2022;386(8):744-56. doi: 10.1056/NEJMoa2116597.
14. Madewell ZJ, Yang Y, Longini IM Jr, et al. Household Transmission of SARS-CoV-2: A Systematic Review and Meta-analysis. *JAMA Netw Open*. 2020;3(12):e2031756. doi: 10.1001/jamanetworkopen.2020.31756.
15. Wu J, Huang Y, Tu C, et al. Household Transmission of SARS-CoV-2, Zhuhai, China, 2020. *Clin Infect Dis*. 2020;71(16):2099-108. doi: 10.1093/cid/ciaa557.
16. Watson LM. Simulating the impact of vaccination rates on the initial stages of a COVID-19 outbreak in Aotearoa New Zealand with a stochastic model. *N Z Med J*. 2022;135(1552):66-76.
17. Rolland Y, Lacoste MH, de Mauleon A, et al. Guidance for the Prevention of the COVID-19 Epidemic in Long-Term Care Facilities: A Short-Term Prospective Study. *J Nutr Health Aging*. 2020;24(8):812-6. doi: 10.1007/s12603-020-1440-2.
18. Wasilewski MB, Szigeti Z, Sheppard CL, et al. Infection prevention and control across the continuum of COVID-19 care: A qualitative study of patients', caregivers' and providers' experiences. *Health Expect*. 2022;25(5):2431-9. doi: 10.1111/hex.13558.
19. Bergwerk M, Gonen T, Lustig Y, et al. Covid-19 Breakthrough Infections in Vaccinated Health Care Workers. *New Engl J Med*. 2021;385(16):1474-84. doi: 10.1056/NEJMoa2109072.
20. Wong JCS, Yang JZ. Comparative Risk: Dread and Unknown Characteristics of the COVID-19 Pandemic Versus COVID-19 Vaccines. *Risk Anal*. 2022 Oct;42(10):2214-2230. doi: 10.1111/risa.13852.
21. Lo AX, Wedel LK, Liu SW, et al. COVID-19 hospital and emergency department visitor policies in the United States. *J Am Coll Emerg Physicians Open*. 2022;3(1):e12622. doi: 10.1002/emp2.12622.
22. Wee LE, Conceicao EP, Sim JX, et al. The impact of visitor restrictions on health care-associated respiratory viral infections during the COVID-19 pandemic: Experience of a tertiary hospital in Singapore. *Am J Infect Control*. 2021;49(1):134-5. doi: 10.1016/j.ajic.2020.11.006.
23. Krüger S, Leskien M, Schuller P, et al. Performance and feasibility of universal PCR admission screening for SARS-CoV-2 in a German tertiary care hospital. *J Med Virol*. 2021;93(5):2890-8. doi: 10.1002/jmv.26770.

Appendices

Appendix 1

Patient Questionnaire

This questionnaire is not about exposure to people who have COVID-19, but about sharing rooms with patients of different vaccination status.

A. Patient demographics	
1. What is your age?	<input type="radio"/>
2. What is your gender?	<input type="radio"/> Male
	<input type="radio"/> Female
	<input type="radio"/> Another gender please state:
3. What is your ethnicity?	<input type="radio"/> New Zealand European
	<input type="radio"/> Māori
	<input type="radio"/> Samoan
	<input type="radio"/> Cook Islands Maori
	<input type="radio"/> Tongan
	<input type="radio"/> Niuean
	<input type="radio"/> Chinese
	<input type="radio"/> Indian
	<input type="radio"/> Other e.g., Dutch, Japanese, Tokelauan please state:
4. What is your highest completed qualification?	<input type="radio"/> Level 1 Certificate
	<input type="radio"/> Level 2 Certificate
	<input type="radio"/> Level 3 Certificate
	<input type="radio"/> Level 4 Certificate
	<input type="radio"/> Level 5 Diploma
	<input type="radio"/> Level 6 Diploma
	<input type="radio"/> Bachelor's Degree or Level 7 Qualification
	<input type="radio"/> Bachelor Honours Degree or Postgraduate Certificate/ Diploma
	<input type="radio"/> Master's Degree
	<input type="radio"/> PhD
	<input type="radio"/> Other qualification please state:

5. Do you think you are at higher risk of severe illness from COVID-19?	<input type="radio"/> Yes please state why you are at increased risk:
	<input type="radio"/> No
	<input type="radio"/> Don't know
6. Which ward are you currently on?	<input type="radio"/> Respiratory
	<input type="radio"/> General Medicine
	<input type="radio"/> Orthopaedic Surgery
	<input type="radio"/> General Surgery
7. What is the reason for your current admission to hospital?	<input type="radio"/> Other

B. COVID-19 vaccination status	
8. What is your COVID-19 vaccination status?	<input type="radio"/> Have not had the vaccine
	<input type="radio"/> 1st dose only
	<input type="radio"/> 1st and 2nd doses only
	<input type="radio"/> 1st, 2nd, and 3rd (booster) doses
	<input type="radio"/> Prefer not to say
	<input type="radio"/> Don't know
9. Have you ever tested positive for COVID-19?	<input type="radio"/> Yes
	<input type="radio"/> No
	<input type="radio"/> Prefer not to say
	<input type="radio"/> Don't know
10. Has anyone in your household ever tested positive for COVID-19?	<input type="radio"/>
	<input type="radio"/>
	<input type="radio"/>
	<input type="radio"/>

Please only answer this section if you are staying in a **MULTI-BED ROOM**

C. Sharing multi-bed hospital rooms	
11. Currently, how many patients are in your hospital room including yourself?	<input type="radio"/> 1
	<input type="radio"/> 2
	<input type="radio"/> 3
	<input type="radio"/> 4
	<input type="radio"/> Don't know
	<input type="radio"/> Other, please specify:
12. Do you know the COVID-19 vaccination status of any other patients in your room?	<input type="radio"/> Yes
	<input type="radio"/> No
	<input type="radio"/> Don't know
	<input type="radio"/> Not applicable

Please only answer this section if you are staying in a **MULTI-BED ROOM**

D. Please circle the number that corresponds to your view on the following statements					
	Very uncomfortable		Neutral	Very uncomfortable	
13. How do you feel about sharing a multibed-hospital room with patients of the same COVID-19 vaccination status as yourself?	1	2	3	4	5
14. How do you feel about sharing a multibed hospital room with patients of a different COVID-19 vaccination status to yourself?	1	2	3	4	5
15. How do you feel about sharing a multibed hospital room with patients when you don't know their COVID-19 vaccination status?	1	2	3	4	5

16. In your opinion, should patients of different COVID-19 vaccination status be located in separate rooms?	<input type="radio"/> Yes
	<input type="radio"/> No
	<input type="radio"/> Don't know
17. Do you think that you have the right to know the COVID-19 vaccination status of other patients in your room?	<input type="radio"/> Yes
	<input type="radio"/> No
	<input type="radio"/> Don't know
18. Do you think that other patients in your room have the right to know your COVID-19 vaccination status?	<input type="radio"/> Yes
	<input type="radio"/> No
	<input type="radio"/> Don't know
19. In your opinion, should hospital visitors be required to be fully vaccinated for COVID-19?	<input type="radio"/> Yes
	<input type="radio"/> No
	<input type="radio"/> Don't know

Please only answer this section if you are staying in a **SINGLE ROOM**

E. Please circle the number that corresponds to your view on the following statements					
	Very uncomfortable		Neutral	Very uncomfortable	
	1	2	3	4	5
20. How would you feel about sharing a multi-bed hospital room with patients of the same COVID-19 vaccination status as yourself?	1	2	3	4	5
21. How would you feel about sharing a multi-bed hospital room with patients of a different COVID-19 vaccination status to yourself?	1	2	3	4	5
22. How would you feel about sharing a multi-bed hospital room with patients when you don't know their COVID-19 vaccination status?	1	2	3	4	5

23. In your opinion, should patients of different COVID-19 vaccination status be located in separate rooms?	<input type="radio"/> Yes
	<input type="radio"/> No
	<input type="radio"/> Don't know
24. If at any stage you have to share a room with other patients, do you think that you have the right to know their COVID-19 vaccination status?	<input type="radio"/> Yes
	<input type="radio"/> No
	<input type="radio"/> Don't know
25. If at any stage you have to share a room with other patients, do you think that they have the right to know your COVID-19 vaccination status?	<input type="radio"/> Yes
	<input type="radio"/> No
	<input type="radio"/> Don't know
26. In your opinion, should hospital visitors be required to be fully vaccinated for COVID-19?	<input type="radio"/> Yes
	<input type="radio"/> No
	<input type="radio"/> Don't know

F. Please comment on the following questions

27. What do you think the hospital should be doing (if anything) in relation to the mixing of vaccinated and unvaccinated persons?

28. Please list any other suggestions you might have for hospitals to protect patients from COVID-19.

29. Besides COVID-19 considerations, is there anything else hospitals should consider about patients sharing multi-bed hospital rooms?

Appendix 2

Clinician Interview

The interview will include questions about policies on your ward, how risks are mitigated; and your general views about COVID-19, vaccination policies and ward accommodation for patients of differing vaccination statuses.

1. What is your work role?
2. What is your gender?
3. What are your views on mixing vaccinated and unvaccinated patients in the same multi-bed hospital room?
(Prompt) Do you think vaccinated and unvaccinated patients should be in separate rooms?
4. What are your views on providing care to a mix of both vaccinated and unvaccinated patients?
(Prompt) Please include any concerns about risks to both patients and healthcare workers
5. Do you think that patients in a multi-bed hospital room have a right to know the COVID-19 vaccination status of the other patients sharing the same room?
Yes/No/Don't know
6. Does your ward have a policy on the mixing of vaccinated and unvaccinated patients in multi-bed hospital rooms?
 - (i) If yes, what is the policy?
 - (ii) If not, to your knowledge, what is currently being done to reduce the risks (if any) from mixing vaccinated and unvaccinated patients on your ward/s?
 - (iii) If there is no policy or if you think more should be done, what would you suggest?
7. In your opinion, should hospital visitors be fully vaccinated against COVID-19?
8. Do you have any further comments?

How well do we support whānau with postpartum contraception? Comparison of two Auckland maternity hospitals

Jordon Wimsett, Lynn Sadler, Charlotte Oyston, Emelia Legget, Sue Tutty, Helen Roberts

ABSTRACT

AIM: To compare the rates of recall of contraceptive discussion and provision of chosen contraceptive method before discharge among patients who recently birthed in two tertiary maternity units in Auckland, New Zealand.

METHOD: A cross-sectional survey of recently postpartum patients at tertiary and associated primary birthing units aligned with Auckland and Counties Manukau maternity services was undertaken in 2019 and 2020.

RESULTS: Five hundred and seventy-one patients took part in the survey. Overall recall around contraceptive discussions was low, as was the number of patients leaving hospital with their preferred method of contraception. Compared to Counties Manukau, almost twice as many patients at Auckland were unable to recall either an antenatal or postpartum discussion with a health professional about contraception (77% vs 39%, $p < 0.001$). Those birthing at Counties Manukau were also more likely to recall seeing a hospital contraceptive brochure than those at Auckland (42% vs 20%, $p < 0.001$). Twice as many patients at Counties Manukau left hospital with their chosen method compared to those at Auckland (31% vs 14%, $p < 0.001$). In addition, long-acting reversible contraceptives (LARCs) were more often chosen for contraception at Counties Manukau (31% vs 22%, $p = 0.01$) and more patients left hospital with their LARC compared to Auckland (13% vs 7%, $p = 0.03$).

CONCLUSION: These differences between two large tertiary maternity services suggests an opportunity for quality improvement around contraception provision.

In 2017, the Faculty of Sexual and Reproductive Healthcare (FSRH) in Britain published a guideline for contraception after pregnancy.¹ The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) reference the FSRH guideline as their advice. The following year, Te Toka Tumai Auckland published a contraception after birth guideline.² These guidelines recommend that patients should be offered the opportunity for discussion about the effectiveness of different contraceptives during the antenatal period and informed which contraceptives can be initiated immediately after delivery. In addition, the guidance states that maternity services need to ensure that there are sufficient numbers of staff able to provide contraceptive methods prior to discharge, including the more effective long-acting reversible contraceptives (LARCs—intrauterine contraceptive devices (IUCDs) and subdermal implants). The provision of contraception was further identified as a key health priority locally, and postpartum contraception was highlighted nationally by the

National Maternity Monitoring Group (NMMG) as a particular area for improvement.³

This study aimed to compare recall of contraceptive discussion during the antenatal or postpartum period and provision of chosen contraceptive methods before discharge among patients who recently birthed in two maternity hospitals in Auckland, New Zealand (Te Toka Tumai, Auckland and Te Whatu Ora Counties Manukau).

Methods

A cross-sectional survey of recently postpartum patients at both Auckland and Counties Manukau and their associated primary birthing units was undertaken in 2019 and 2020. Patients receiving inpatient postpartum care within 7 days of birth were approached by a study investigator and invited to participate. The study was undertaken over a 2-week period in both 2019 and 2020 at Counties Manukau sites and extended to Auckland sites in 2020 over a 1-month period.

Exclusion criteria included perinatal loss, discharge within 6 hours of delivery or requiring a translator. Detail of study methodology is available elsewhere.⁴

All data were collected directly from patients, including basic demographics (age, ethnicity, parity and birth location), pregnancy planning, previous contraceptive use, future contraception intentions, contraceptive information provided during and after pregnancy, and beliefs around contraceptive use. It was structured using Likert scales with a small number of free-text questions. Results of the survey were stored anonymously. The study was approved by the New Zealand Health and Disability Ethics Committee (HDEC 18NTB215AM06), and relevant localities.

Statistical analysis

Data management and analysis were undertaken using Stata (statistical software for data science) version 13. Self-identified ethnicity was collected using the New Zealand Census question,⁵ and then prioritised according to protocols for the health sector.⁶ Small numbers of patients identified as Middle Eastern, Latin American, and African (MELAA), or Other (non-New Zealand) European, or without ethnicity specified, and so these patients are grouped with New Zealand European.

Planned pregnancy was measured using the single statement “I was planning to be pregnant with this baby”. A six-point Likert scale was used, with “agree” and “strongly agree” grouped together to define “planned pregnancy”. These same groupings of “strongly agree” and “agree” were used to indicate an affirmative response to all other statements where six response Likert scales were provided, the remaining responses indicating the negative. The five response Likert scales “never, rarely, occasionally, a moderate amount, and always” were generally grouped as “moderate amount” and “always” indicating an affirmative response, the remaining responses indicating the negative. Categorical data were expressed as number and percentage, and comparisons made using Chi-squared tests. Normally distributed continuous data were expressed as mean (standard deviation) and compared using student t-tests. A p-value <0.05 was considered statistically significant.

Results

Two hundred and fifty-eight patients participated in Auckland and 313 at Counties Manukau over 2019 and 2020. The response rate was 83% and 94% of patients eligible and approached at the localities, respectively.

Although there were differences in the participant characteristics between localities, the groups were representative of their locality birthing populations (Table 1). Patients who birthed at Auckland were of lower parity, older maternal age and more commonly of New Zealand European ethnicity than those from Counties Manukau.

Patients at Auckland had more often used contraception before (185/258 [72%]) compared to those birthing at Counties Manukau (143/313 [46%]), $p < 0.001$. More than three quarters of respondents at Auckland were unable to recall either an antenatal or postpartum discussion around contraception with a health professional (197/257 [77%]) compared to 122/313 (39%) at Counties Manukau ($p < 0.001$). Recall of postpartum discussion was three times more likely at Counties Manukau (75/313 [24%]) than Auckland (20/258 [8%]), $p < 0.001$. Those birthing at Counties Manukau (132/313 [42%]) were also more likely to recall seeing a hospital contraceptive brochure than those at Auckland (54/258 [20%]), $p < 0.001$ (Table 2).

In 2020 we collected information regarding the timing of survey during the participants’ postpartum stay. Patients at Auckland were more likely to be approached on day 3 or later (79/258, 30.6%) compared to those at Counties Manukau (28/140, 20%), $p = 0.02$; however, despite this were no more likely to have made a contraceptive plan (Table 3).

Very few patients planned to be pregnant in the next 12 months: 3/255 (1.2%) at Auckland and 12/312 (3.8%) at Counties Manukau, $p = 0.05$ (Table 3). Similar numbers at both localities reported having a contraceptive plan at the time of the survey—Auckland 138/258 (52%) and Counties Manukau 184/313 (59%), $p = 0.2$.

Twice as many patients at Counties Manukau (98/313 [31%]) left hospital with their chosen method compared to those at Auckland (36/258 [14%]), $p < 0.001$. LARCs were more often chosen for contraception at Counties Manukau (due to higher numbers of patients choosing a subdermal implant), 98/313 (31%) compared to Auckland (57/258 [22%]), $p = 0.01$. More patients left hospital with their LARC at Counties Manukau (39/184

Table 1: Patient demographics of survey participants in 2019 and 2020, compared to 2020 total birthing populations.

	Auckland (2020)		Counties Manukau (2019/2020)		Auckland vs Counties Manukau	All births Auckland 2020		All births Counties Manukau 2020	
	n=	258	n=	313		n=	6212	n=	7392
	n	%			p	n	%	n	%
Age (years)									
<20 years	0	0.0	14	4.5		78	1.3	377	5.1
20–24	18	7.0	56	17.9		405	6.5	1424	19.3
25–29	52	20.2	99	31.6		1203	19.4	2294	31.0
30–34	104	40.3	91	29.1		2495	40.2	2105	28.5
>=35	82	31.8	53	16.9	<0.001	2031	32.7	1192	16.1
Missing data	2		0						0.0
Ethnicity									
Māori	28	10.9	48	15.3		454	7.3	1486	20.1
Pacific people	41	15.9	112	35.8		726	11.7	2547	34.5
Indian	32	12.4	75	24.0		705	11.3	1243	16.8
Other Asian	52	20.2	18	5.8		1597	25.7	591	8.0
Other (NZ European/MELAA/European/Other)	105	40.7	60	19.2	<0.001	2712	43.7	1496	20.2
Missing data	0	0.0	0	0.0		18	0.3	29	0.4
Parity									
Primiparous	137	53.1	149	47.6		2981	48.0	2870	38.8
Second or third baby	107	41.5	120	38.3		2800	45.1	3239	43.8
Fourth or later baby	14	5.4	44	14.1	0.003	431	6.9	1229	16.6
Missing data	0	0.0	0	0.0		0	0.0	54	0.7

Table 2: Contraceptive knowledge transfer by locality of birthing.

	Auckland n=258		Counties Manukau n=313		p
	n	%	n	%	
Current pregnancy planned	181	70.2	167	53.4	<0.001
Prior contraception use (mod amount/always)	185	71.7	143	45.7	<0.001
Recall receiving a hospital contraceptive brochure	54	20.4	132	42.2	<0.001
Contraceptive discussions	n=257		n=313		
Recall both antenatal and postpartum discussion	17	6.6	62	19.8	<0.001
Recall antenatal discussion only	23	8.9	54	17.3	0.004
Recall postpartum discussion only	20	7.8	75	24	<0.001
Recall neither antenatal nor postpartum discussion	197	76.7	122	39	<0.001
Feels informed about contraceptive options	198	77	238	76	0.85
I would like more information about my contraceptive choices	69	27.1	118	37.8	0.007

Table 3: Postpartum contraceptive planning by locality of birthing.

	Auckland N=258		Counties Manukau N=313		p
	n	%	n	%	
Planning to be pregnant in the next 12 months	3	1.2	12	3.8	0.05
Contraceptive plan made	138	52.1	184	58.9	0.2
Chosen contraceptive method					
Natural family planning	10	3.9	3	1	0.02
Withdrawal method	5	1.9	6	1.9	0.99
Condoms	49	19	33	10.5	0.01
COCP (combined oral contraceptive)/mini-pill	13	5	29	9.3	0.05
IUCD/Mirena	41	15.9	50	16	0.98
Jadelle/rods	17	6.6	49	15.7	<0.001
Depo Provera	4	1.55	25	8	<0.001
Vasectomy	12	4.65	11	3.5	0.49
Tubal ligation	8	3.1	18	5.8	0.13

Table 3 (continued): Postpartum contraceptive planning by locality of birthing.

	Auckland N=258		Counties Manukau N=313		p
	n	%	n	%	
Leaving hospital with chosen method of contraception					
Of those who reported making a plan	36/138	26.1	98/184	53.3	<0.001
Of all survey respondents	36/258	14	98/313	31.3	<0.001
Leaving hospital with a LARC	58	22.1	99	31.3	0.01
Of those who planned to use a LARC	18/58	31	39/99	39.4	0.3
Of all survey respondents	18/258	7	39/184	12.5	0.03
Alternatives					
Referred to the contraception clinic to get chosen method	9	6.5	37	20.1	0.001
Referred to my GP/family planning to get chosen method	9	6.5	7	3.8	0

[12.5%]) compared to Auckland (18/258 [7%]), $p=0.03$. Patients at Auckland were more likely to plan to use condoms (19% vs 11%, $p=0.01$), while those at Counties Manukau were more likely to use Depo Provera (8% vs 2%, $p<0.01$) and the subdermal implant (16% vs 7%, $p<0.01$).

Discussion

This analysis, comparing two large Auckland tertiary maternity services, suggests a difference in the quality of contraceptive services provided. Patients at Auckland were less likely to report having seen the contraceptive pamphlet provided universally at both units, less likely to recall a discussion about contraception during the antenatal or postpartum period, and also less likely to leave hospital with their chosen method of contraception, including LARCs.

Offering patients a contraceptive method before leaving the hospital is important. Asking patients to come back for another contraceptive visit has been identified as a barrier to the uptake of postpartum contraception, with studies showing 30–50% of patients not attending further visits after leaving the hospital.⁷

A short inter-pregnancy interval (IPI) of fewer

than 12 months increases the risk of complications, including preterm birth, low birthweight, stillbirth and neonatal death.⁸ The FSRH guidelines were written the year following a UK study reporting that almost 1 in 13 patients presenting for a termination of pregnancy (TOP) or delivery had conceived within a year of a previous birth and that opportunities were being missed to prevent unintended pregnancies.⁹ Similarly, a New Zealand study of patients seeking a TOP within 6 months of delivery also showed that opportunities were missed in the delivery of contraception postpartum.¹⁰ In addition, our survey illustrates that it is not patients' intention to become pregnant again within the first 12 months of birth. Certain groups may be at higher risk of unintended pregnancy, particularly those leaving hospital within 6 hours of birth and non-English speaking patients. Careful consideration needs to be given to how we provide equitable access for all.

Although at the time of the survey antenatal contraceptive discussions were not a requirement under the Primary Maternity Services Notice 2021 (Section 88), international evidence suggests this is best practice, and the updated Section 88 (2021) includes discussion of postpartum contraception in the antenatal period.^{11–14} The UK APPLES

study has found good acceptability of antenatal contraceptive counselling at 22 weeks gestation, followed by considerable demand for immediate postpartum IUCDs and implants.¹⁵ The contraceptive pamphlet available at both hospitals (in the current study) is included in an information pack given to patients around 24 weeks and is also available at antenatal clinics. It includes information regarding side effects and which methods are appropriate for immediate use with breastfeeding. However, contraception discussions need to continue with patients at visits throughout pregnancy, as international literature highlights the importance of multiple discussions.¹⁶ Only 16% of patients at Auckland recall having an antenatal discussion regarding contraception. This low figure is consistent with data from the Auckland annual clinical report where only 17% of patients had made a documented decision regarding contraception in the antenatal period.¹⁷

Over 50% of patients left hospital with no contraceptive plan or a plan to use a method with a high failure rate (natural family planning, withdrawal method, condoms). Provision of LARCs immediately after childbirth is associated with reduced risk of unintended pregnancy and helps patients optimise their spacing of children.¹⁸ Both hospitals have midwives trained in subdermal implant insertion. Counties Manukau, however, have dedicated nursing staff on the postpartum wards whose role is to offer advice on and delivery of contraception before discharge. This is in line with the commentary of the APPLES study suggesting that expanding the range of healthcare professionals who are trained to provide methods may remove barriers to contraceptive access.¹⁹ These dedicated staff may help explain the large differences in postpartum contraception discussion at the two hospitals and why 53% of patients at Counties Manukau go home with their chosen method, compared to only 26% of patients at Auckland. The contraceptive nurses started employment

during 2019, and by 2020 the staff had increased to providing this service daily. This strategy may be useful to consider for Auckland.

This study was undertaken during 2019 and 2020 in Counties Manukau and during 2020 in Auckland. Te Manatū Hauora – Ministry of Health published Aotearoa New Zealand's guidance on contraception in December 2020,²⁰ with specific mention around postpartum contraception. This guideline also supports the FSRH recommendation that contraception counselling be a routine part of antenatal care and that health practitioners should offer pregnant individuals the opportunity to discuss and document a contraception plan prior to birth. It also recommends that contraception is initiated immediately after birth if the person is medically eligible. The guideline has been endorsed by the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG), Royal New Zealand College of General Practitioners (RNZGP), the New Zealand College of Midwives (NZCOM) and New Zealand Family Planning (FP), which may help prioritise initiation of contraception after delivery rather than the previous conventional six-week visit.

The results of this survey have been a driver in the creation of a multidisciplinary action plan group at Te Toka Tumai Auckland to prioritise its needs around contraception. An action plan needs to enable not only more contraceptive discussion, but good documentation of the contraception chosen by a woman. The goal is to enable patients to make contraceptive choices and to obtain their choice immediately after birth if they wish.

Provision of postpartum contraception is a key aspect of reproductive health, and our survey highlights low rates of contraceptive discussion and contraceptive planning in the immediate postpartum period. We plan to repeat the same survey at the end of 2023 at both maternity hospitals to see whether the action plan has been effective.

COMPETING INTERESTS

Nil.

ACKNOWLEDGEMENTS

Amanda Hinks

Deborah Jane Pittam

AUTHOR INFORMATION

Jordon Wimsett: O&G Registrar, Women's Health, Te Whatu Ora – Te Toka Tumai, Auckland, New Zealand.

Lynn Sadler: Perinatal epidemiologist, Women's Health, Te Whatu Ora – Te Toka Tumai, Auckland, New Zealand.

Charlotte Oyston: Obstetrician, Te Whatu Ora Counties Manukau, Waipapa Taumata Rau, The University of Auckland, Auckland, New Zealand.

Emelia Legget: University of Otago, Dunedin, New Zealand.

Sue Tutty: GP Liaison, Women's Health, Te Whatu Ora Counties Manukau, Auckland, New Zealand.

Helen Roberts: Women's Health, Te Whatu Ora – Te Toka Tumai, Auckland, New Zealand.

CORRESPONDING AUTHOR

Dr Jordon Wimsett: Women's Health, Te Whatu Ora – Te Toka Tumai, Auckland 1142, New Zealand. Ph: 021355828, E: jwimsett@adhb.govt.nz

REFERENCES

1. The Faculty of Sexual & Reproductive Healthcare [Internet]. FSRH Clinical Guideline: Contraception After Pregnancy. London: FSRH; 2020 Oct [cited 2023 Jan 19]. Available from: <https://www.fsrh.org/documents/contraception-after-pregnancy-guideline-january-2017/>.
2. Auckland District Health Board [Internet]. Contraception after Birth. Auckland: Auckland District Health Board; 2022 Mar 28 [cited 2023 Jan 19]. Available from: <https://adhb.hanz.health.nz/Policy/Contraception%20after%20delivery.pdf#search=contraception%20after%20birth>.
3. Manatū Hauora – Ministry of Health [Internet]. National Maternity Monitoring Group Annual Report 2019. . Wellington: Manatū Hauora – Ministry of Health; c2020 [cited 2023 Jan 19]. Available from: <https://www.health.govt.nz/publication/national-maternity-monitoring-group-annual-report-2019>
4. Wimsett J, Sadler L, Tutty S, Tutty E, Oyston C. Pregnancy planning and barriers to accessing postnatal contraception in New Zealand. *Contraception*. 2022 Aug;112:100-104. doi: 10.1016/j.contraception.2022.02.007.
5. Manatū Hauora – Ministry of Health [Internet]. Ethnicity Data Protocols for the Health and Disability Sector. Wellington: Manatū Hauora – Ministry of Health; c2004 [cited 2023 Jan 19]. Available from: <https://www.fmhs.auckland.ac.nz/assets/fmhs/faculty/tkhm/tumuaki/docs/ethnicity-data-protocols.pdf>.
6. health.govt.nz [Internet]. Wellington: Manatū Hauora – Ministry of Health; 2017 Sep [cited 2023 Jan 19]. HISO 10 0 01:2017 Ethnicity Data Protocols Available from: <http://www.moh.govt.nz>.
7. Ogburn JA, Espey E, Stonehocker J. Barriers to intrauterine device insertion in postpartum women. *Contraception*. 2005 Dec;72(6):426-9. doi: 10.1016/j.contraception.2005.05.016.
8. Smith GC, Pell JP, Dobbie R. Interpregnancy interval and risk of preterm birth and neonatal death: retrospective cohort study. *BMJ*. 2003 Aug 9;327(7410):313. doi: 10.1136/bmj.327.7410.313.
9. Heller R, Cameron S, Briggs R, Forson N, Glasier A. Postpartum contraception: a missed opportunity to prevent unintended pregnancy and short inter-pregnancy intervals. *J Fam Plann Reprod Health Care*. 2016 Apr;42(2):93-8. doi: 10.1136/jfprhc-2014-101.
10. Joseph K, Whitehead A. Unintended pregnancy and therapeutic abortion in the postpartum period. Is an opportunity to intervene being missed? *N Z Med J*. 2012 Aug 10;125(1359):30-40.
11. New Zealand Legislation [Internet]. New Zealand Public Health and Disability Act 2000. Wellington: Manatū Hauora – Ministry of Health; 2017 [cited 2023 Apr 12]. Available from: <https://www.legislation.govt.nz/act/public/2000/0091/latest/DLM81287.html>.
12. Zapata LB, Murtaza S, Whiteman MK, Jamieson DJ, Robbins CL, Marchbanks PA, et al. Contraceptive counselling and postpartum contraceptive use. *Am J Obstet Gynecol*. 2015 Feb;212(2):171.e1-8. doi: 10.1016/j.ajog.2014.07.059.
13. Makins A, Cameron S. Post pregnancy contraception. *Best Pract Res Clin Obstet Gynaecol*. 2020 Jul;66:41-54. doi: 10.1016/j.bpobgyn.2020.01.004.
14. Wimsett J, Legget E, Roberts H, Oyston C, Sadler L. Factors associated with postpartum contraceptive planning in New Zealand. *Contraception*. 2023 Feb;118:109898. doi: 10.1016/j.contraception.2022.09.136.
15. Cameron ST, Craig A, Sim J, Gallimore A, Cowan S, Dundas K, et al. Feasibility and acceptability of introducing routine antenatal contraceptive counselling and provision of contraception after delivery: the APPLES pilot evaluation. *BJOG*. 2017 Dec;124(13):2009-2015. doi: 10.1111/1471-0528.14674.

16. Zapata LB, Murtaza S, Whiteman MK, Jamieson DJ, Robbins CL, Marchbanks PA, et al. Contraceptive counselling and postpartum contraceptive use. *Am J Obstet Gynecol*. 2015 Feb;212(2):171.e1-8. doi: 10.1016/j.ajog.2014.07.059.
17. Roberts H. 3.3.6 LARC (long acting reversible contraception) project. In: Te Whatu Ora Health New Zealand. National Women's Health Annual Clinical Report 2021. 2022 [cited 2022 Nov 28]. Available from: <https://www.nationalwomenshealth.adhb.govt.nz/healthprofessionals/annual-clinical-report/national-womens-annual-clinical-report/>.
18. Goldthwaite LM, Shaw KA. Immediate postpartum provision of long-acting reversible contraception. *Current Opinion in Obstetrics and Gynecology* 2015;27(6):460-464. doi: 10.1097/GCO.0000000000000224.
19. Aiken A. With smart strategies, immediate postpartum LARC is possible. *BJOG*. 2017 Dec;124(13):2016. doi: 10.1111/1471-0528.14728.
20. Manatū Hauora – Ministry of Health [Internet]. New Zealand Aotearoa's guidance on contraception. Wellington: Manatū Hauora – Ministry of Health; 2020 [cited 2023 Feb 2]. Available from: https://www.health.govt.nz/system/files/documents/publications/final_aotearoa_contraception_guidance.pdf.

Investigating the distribution of primary and secondary care referrals for public-funded bariatric surgery at Counties Manukau Health (CMH)

Kate Bradley, Sarah Cowan, Richard Babor, Jon Morrow, Andrew MacCormack, Jamie-Lee Rahiri, Rinki Murphy

ABSTRACT:

AIMS: This study investigated variations in referral rates for bariatric surgery from primary and secondary care providers across the Counties Manukau district health board (CMDHB), with the aim of identifying “hot spots” for referrals so that intervention to help achieve equitable access to bariatric surgery can be implemented.

METHODS: Referral data was gathered from hospital referral records from January 2017 to January 2019 (n=1,440). Referral rate per geographical location within the CMDHB catchment was calculated using 2018 census figures.

RESULTS: Of the 1,195 referrals included, 1040 (87%) referrals were from primary care. The referrals came from 328 general practitioners (GPs) across 158 practices. There was considerable regional variation in referral rates per 1000 people, from a peak of 71.5/1000 to a low of 0.2/1000. Eighty-six percent of secondary care referrals were received from the public system and the remainder from private practice. The most common referral specialty was diabetes, followed by general surgery and orthopaedics. Out of these referrals, 434 (36%) proceeded to bariatric surgery. Pākehā (50%) were more likely to proceed to surgery than Māori (31%) and Pasifika (22%), despite similar referral numbers.

CONCLUSION: There is significant variation in referrals for bariatric surgery across CMDHB. Systematic discussion of bariatric surgery with every patient who is likely to benefit is not occurring, given relatively low referral volumes.

Obesity is a significant health issue, with nearly a third of the Aotearoa New Zealand adult population classified as obese.¹ In adults, Māori are almost twice as likely to be obese as non-Māori, and Pasifika adults are 2.5 times as likely to be obese as non-Pasifika adults.¹ Adults living in the most socio-economically deprived areas are significantly more likely to be obese than those living in the least deprived areas.² Bariatric surgery has been shown to be the most effective intervention for weight loss and remission of type 2 diabetes mellitus (T2DM).³⁻⁵ Additionally, bariatric surgery reduces mortality due to cardiovascular disease and cancer, improves management of diabetes, hypertension and obstructive sleep apnoea, and benefits overall quality of life.³⁻⁵ Despite this, access to bariatric surgery for Māori and Pasifika peoples in Aotearoa New Zealand is much lower when compared with New Zealand Europeans.^{6,7}

Manatū Hauora – Ministry of Health developed criteria to identify people suitable for publicly funded bariatric surgery.⁸ Approximately 400 bariatric surgeries are carried out through the pub-

lic system nationally each year, predominantly sleeve gastrectomy and Roux-en-Y gastric bypass surgeries.⁶ Referrals for surgery may be made from primary care (i.e., general practitioners) or secondary care (i.e., hospital-based specialists). Following referral, a bariatric surgical team within each district health board (DHB) is responsible for reviewing each referral and selecting those who are most likely to derive the greatest benefit from the surgery to proceed through the programme. While a national scoring system has been developed,⁸ irrespective of the prioritisation tool used by each DHB for patient selection, resource constraints mean that only a minority of patients that are eligible and likely to benefit actually receive this treatment.⁶

The inclusion criteria for bariatric surgery specific to Counties Manukau district health board (CMDHB) include:

1. BMI >40 or >35 with comorbidities.
2. Obesity for >5 years.
3. Weight <200kg or BMI <55.

4. Non-smoker (for at least 6 months).
5. Failed non-surgical attempts at weight loss for >2 years.
6. Understanding of and motivation for surgery.
7. Acceptance of long term follow up.

In the Auckland Region, New Zealand Europeans with a higher socio-economic status are more likely to be referred for bariatric surgery than other groups.^{9,10} An equitable referral funnel for bariatric surgery requires sound, evidence-based understanding and positive attitudes towards bariatric surgery across all primary and secondary care health providers in order to start the process of consideration for bariatric surgery.^{11–14}

Few studies have reviewed the distribution of referrals for publicly funded bariatric surgery in Aotearoa New Zealand with most of these being performed within individual DHBs.^{6,9} This study sought to review all referrals made for bariatric surgery in the Counties Manukau Health (CMH) Region in order to understand whether referrals are evenly distributed across providers and geographic regions or whether the limited numbers of referrals come from a small number of “high volume referrers” located in certain practices or specialist groups.

Methods

A retrospective review of all referrals to the bariatric service was performed in line with Strengthening the reporting of observational studies in epidemiology (STROBE) guidelines. All patients’ national health identifier (NHI) numbers were retrieved by a data analyst at CMH. Most referrals were sent electronically with a small minority sent by fax.

Inclusion and exclusion criteria

Patients aged 16 years and over who were referred electronically to CMDHB for bariatric surgery in the period 1 January 2017 to 1 January 2019 were included in the study. Referrals for complications of bariatric surgery and faxed referrals were excluded from the data collection.

Variables

Patient demographics were extracted for each patient referred. The source of referral was extracted and classified as primary care or secondary care. For those referred from primary care, the electronic record was reviewed for evidence of patient contact with a secondary care service in the

12 months prior to referral. For referrals received from primary care, the location of the practice and the identity of the referring doctor were also recorded. Comparisons of referral patterns from primary care were made on geographical terms on the basis of suburbs defined in the 2018 New Zealand census, and by broader localities as used for healthcare delivery planning by CMH. For referrals received from secondary care, the DHB, specialty and name of referrer were recorded. The outcome of each referral was recorded in terms of either proceeding to surgery or being discharged from the pathway. Reasons for why patients were discharged from the pathway were recorded where available.

Ethical approvals

This study was conducted in full conformance with principles of the Declaration of Helsinki, Good Clinical Practice and the Health Research Council of New Zealand. This study received ethical approval from the Auckland Health Research Ethics Committee (AHREC) and locality approval from CMH. Referrals from suburbs outside of CMH were also excluded.

Results

A total of 1,440 referrals were initially assessed, with 245 referrals excluded for reasons including being outside the study period and referrals received that were for a complication of bariatric surgery or unrelated to bariatric surgery. Of the remaining 1,195 referrals, 616 were referred in 2017 and 579 were referred in 2018. 549 of the 616 (89%) referrals from 2017 were from primary care, and 67 (11%) were from secondary care. In 2018, 491 referrals were from primary care (85%) and 88 from secondary care (15%, Figure 1).

Patient characteristics were similar across the two years of study (Table 1). The majority of patients referred were aged between 40–49 years and were female (67% female, 33% male). Referrals were mostly received for Pasifika (33%), Māori (27%) and New Zealand Europeans (27%). Patients were mostly referred with a BMI between 40–49kg/m.²

Primary care referrals

Of the 549 primary care referrals from 2017, 237 (43%) of the referrals did not have contact with secondary care in the 12 months prior to referral. A total of 311 (57%) patients had contact with secondary care through one or more specialties. In

2018, of the 491 primary care referrals, 298 (60%) had contact with secondary care in the 12 months prior to referral and 191 (39%) did not have any secondary care input in the 12 months prior. Primary care referrals were received from 328 general practitioners (GPs) from 158 GP practices. On average, GPs made three referrals across the two-year period, with the largest number of referrals sent by one GP being 19. The top ten referring GPs sent an average of 10 referrals each.

Across the two-year period, 609 of the 1,040 (59%) primary care referrals had contact with at least one secondary care service. The most common hospital specialties to be involved in the care of patients prior to primary care referral for bariatric surgery were from respiratory (n=164), emergency department (ED) (n=106), ophthalmology (n=84) and the diabetes team (Diabetes Clinical Nurse Specialist and Endocrinology) (n=71). A total of 407 patients had contact with one specialty, 322 with two specialties, 111 with three specialties and four had contact with >four specialties. The top 10 specialties engaged with patients prior to primary care referral are presented in Table 2.

Locations of primary care referrers

Suburbs within CMH are grouped into four broader localities for health delivery purposes. The locality with the highest number of referrals was Manukau (n=439, 40%), followed by Mangere-Ōtara (n=262, 22%), Eastern (n=239, 20%) and Franklin (n=99, 9%) (Figure 2). Details outlining the location of referrers are described in table three. Suburbs were defined according to the 2018 census classification.¹⁵ The suburb with the highest total number of referrals was Manurewa (n=131, 12.71%). Manurewa also had one of the highest number of referrals per 1,000 people. There were 93 referrals from suburbs outside of the CMH catchment area that were excluded from our analyses. Papatoetoe had the highest number of individual practices from which the referrals were received (n=12), but one of the lowest referrals per 1,000 people rates at 1.17/1,000.

Secondary care referrals

There were a total of 155 referrals received from secondary care, of which 126 (81%) were from CMH, eight (5%) from Auckland DHB and 21 (14%) from private practice. The number of referrals from public hospital specialists increased in 2018 compared to 2017 (Table 4). Of the 21 referrals from private practice, 20 were from general

surgeons. The highest referring hospital-based specialties were diabetes (n=33), general surgery (n=29), orthopaedics (n=18) and respiratory (n=18) services. Of the 33 referrals from the diabetes service, 11 were from individual team members, including senior medical officers, registrars and clinical nurse specialists. The two top referring team members referred 23 of the 33 patients.

Progression to surgery

Of the 1,195 patients referred for surgery, 434 (36%) proceeded to bariatric surgery. Of these, 166 (38%) were New Zealand European, 101 (23%) Māori, 86 (20%) Pasifika, 21 (5%) Indian, 3 (0.7%) Asian and 57 (13%) Other ethnicities. The highest proportion of patients who proceeded to surgery after referral identified as New Zealand European (n=162, 50%) compared with 31% Māori and 22% Pasifika. A total of 761 patients did not have surgery, with 32 patients still being worked up for surgery at the end of the study period. A total of 410 (54%) patients were discharged from the bariatric pathway due to repeated missed appointments and 32 (4%) patients were discharged due to rescheduling of appointments. A total of 82 (11%) patients were unable to meet the required weight loss goal and the remaining patients did not have surgery due to miscellaneous reasons. Of those who missed appointments, 177 (43%) were Pasifika, 124 (30%) Māori, 71 (17%) New Zealand European and 22 (5%) Indian.

Discussion

Referrals to the CMH bariatric service over a two-year period showed marked heterogeneity in referral rates, with over a hundred-fold difference between the suburbs with the highest rates and those with the lowest rates. The differences were mainly driven by individual general practitioners who referred at much higher rates.¹⁰ Although 328 individual GPs referred at least one patient to the bariatric surgery programme, approximately 10% of the referrals were received from 10 individuals. This inter-individual variation is striking and suggests that efforts to improve equitable bariatric surgery referral rates would lead to a large increase in referral numbers.

The total number of referrals over the two-year study period represents only a small fraction of patients who would likely be eligible for and benefit from bariatric surgery. The number who proceed to bariatric surgery each year is limited by the limited funding and bariatric surgeon/

theatre time allocated. While currently, approximately a third of those referred within the study period proceed to bariatric surgery,¹⁸ efforts to promote systematic discussion of bariatric surgery with every patient who is likely to benefit from bariatric surgery could massively increase referrals and likely reduce the fraction who proceed to surgery unless further funding is allocated to this service.

A previous study at CMH presented data outlining referrals over six years showing that 83% of referrals were received from primary care, similar to 89% in this study; however, the earlier study did not specify the location distribution of referrers or specialist care contact of those referred.⁶ This study found that of the referrals received from primary care, 59% had evidence of secondary care contact in the 12 months prior to referral. Interaction with secondary care specialists reflects both the presence of co-morbidity and, potentially, missed opportunities for referral to bariatric services by hospital specialists. Very few patients were referred from primary care on the explicit advice of secondary care services, suggesting that there were missed opportunities for referral from secondary care services. This is especially notable given that only 13% of the referrals received came directly from secondary care services.

This study confirmed previously reported ethnic disparities in referral patterns, with Māori and Pasifika people being referred at around the same rates as New Zealand Europeans despite substantially higher rates of obesity, with significantly lower rates of progression to surgery.⁶ This study was not able to interrogate the reasons why this trend continues to be seen. There was also a disproportionate number of Pasifika and Māori attrition from the bariatric surgery pathway. Further studies are required to examine how individual patient and systemic factors may contribute to these findings. A change in the way we deliver our services, and engage with Māori and Pasifika,

may improve service delivery, and eliminate disparities in proportions referred and proceeding through to surgery.¹⁹

This study had several strengths. Access to a largely electronic referral system meant that referrals were able to be accessed readily and in real time. The two-year period of study contained a larger number of referrals and allowed us to better observe trends in referral patterns. There were also several limitations to this study. Firstly, as we excluded faxed referrals, we were unable to present a complete picture of all referrals, although there were only 39 faxed referrals. Investigating the reasons for inter-individual variability in referral practices observed lay outside the scope of this study; however, there is literature on the variation in knowledge and attitudes of referrers in the context of bariatric surgery.¹⁴ Lastly, the referral rates per 1,000 population did not account for patients who travelled outside of their suburb to their GP practice, yet still resided in CMDHB region.

This study presents a retrospective review of all referrals to the CMH bariatric service over two years. There was significant geographical and inter-individual variability in referral rates to the CMH bariatric service and consistent with previous studies, Māori and Pasifika were referred at similar rates as NZ Europeans but were less likely to proceed for surgery in comparison. Taken together, these findings suggest that referral practices of healthcare providers could be enhanced to ensure systematic discussion of bariatric surgery with all those likely to benefit from publicly funded bariatric surgery at CMH. However, such systematic and equitable discussions with all such patients would likely result in a huge increase in numbers referred, meaning a greater number would have to be declined if funding for this service remains the same. Further work is needed in this area to clarify the drivers behind the observed variability so that targeted initiatives can be designed and effected accordingly.

Figure 1: Referral distribution between primary and secondary referrers.

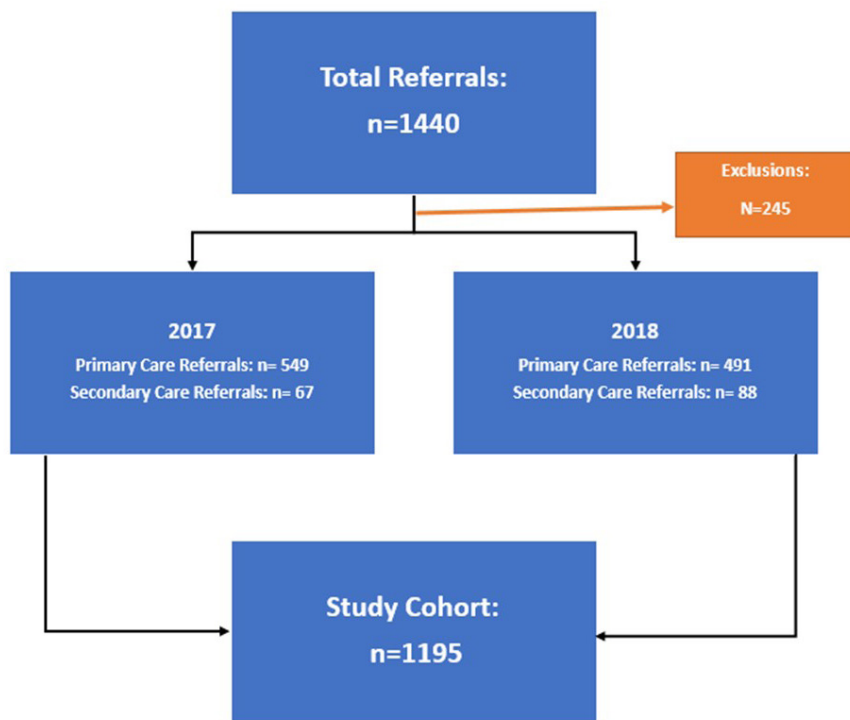


Figure 2: Map of wider Auckland region highlighting CMDHB localities and referrals per 1,000 people.

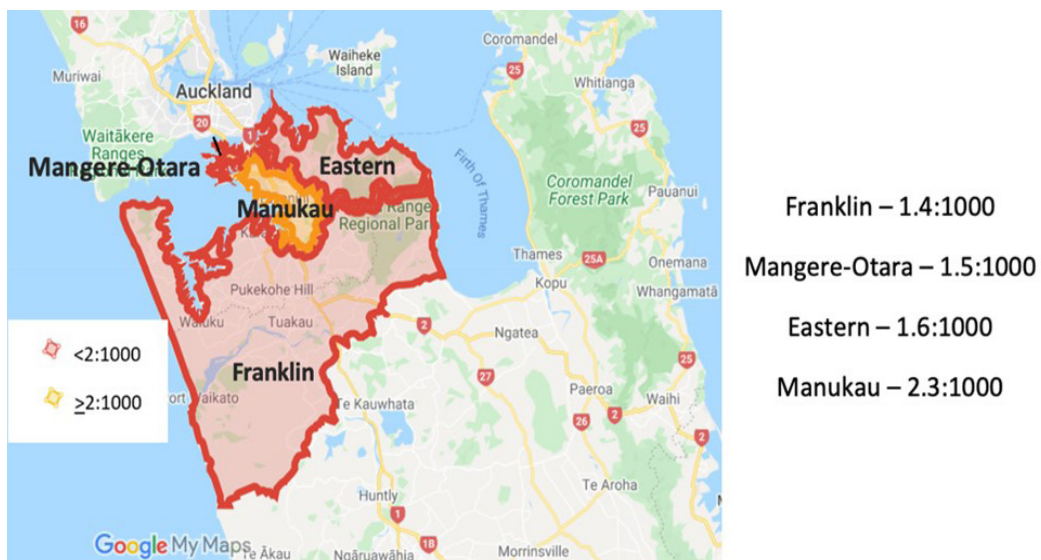


Table 1: Patient characteristics.

	2017 (n=616)	2018 (n=579)	Total (n=1,195)
Age			
15–19	6 (1%)	1 (0.2%)	7 (1%)
20–29	51 (8%)	55 (9%)	106 (9%)
30–39	160 (26%)	133 (23%)	293 (25%)
40–49	216 (35%)	194 (34%)	410 (34%)
50–59	139 (22.5%)	156 (27%)	295 (25%)
60–69	41 (6.6%)	39 (7%)	80 (7%)
70–79	3 (0.5%)	1 (0.2%)	4 (0.3%)
Gender			
Male	193 (31%)	197 (34%)	390 (33%)
Female	423 (69%)	382 (66%)	805 (67%)
Ethnicity			
Māori	162 (26%)	160 (28%)	322 (27%)
New Zealand European	200 (32%)	122 (21%)	322 (27%)
Pacific Islander	181 (29%)	214 (37%)	395 (33%)
Indian	23 (4%)	33 (6%)	56 (5%)
Asian	5 (1%)	4 (1%)	9 (1%)
Other	45 (7%)	46 (8%)	91 (8%)
BMI			
25–29	0	1 (0.2%)	1 (0.1%)
30–39	80 (13%)	75 (13%)	155 (13%)
40–49	277 (45%)	267 (46%)	544 (46%)
50–59	177 (29%)	179 (31%)	356 (30%)
60–69	66 (11%)	48 (8%)	114 (9.5%)
70–79	13 (2%)	7 (1%)	20 (1.6%)
>80	3 (0.5%)	2 (0.3%)	5 (0.4%)

Table 2: Top 10 specialties engaged with patients 12 months prior to primary care referral.

Specialty service	Number of patients
Respiratory (sleep medicine)	164 (142)
Emergency medicine	106
Ophthalmology	84
Diabetes	71
General surgery	62
Gynaecology	60
Orthopaedics	54
Cardiology	53
General medicine	36
Plastics	29

Table 3: Location of primary care referrals.

Location of primary care providers	Percentage of total referrals (number)	Population (2018 census data)	Referral rate per 1,000	Number of GP practices within location
Manurewa	12.71% (131)	19,236	68/1,000	11
Māngere	10.96% (113)	21,363	5.3/1,000	5
Ōtara	8.34% (86)	22,872	3.7/1,000	10
Papakura	7.37% (76)	22,296	3.4/1,000	8
Manukau	6.79% (70)	3,450	20.3/1,000	5
Flat Bush	5.63% (58)	32,214	1.8/1,000	2
Clendon Park	4.75% (49)	8,871	5.5/1,000	3
Papatoetoe	4.95% (51)	43,599	1.17/1,000	12
Pukekohe	4.66% (48)	22,731	2/1,000	4
East Tāmaki	3.6% (35)	489	71.5/1,000	2
Howick	2.42% (25)	11,067	2.3/1,000	6
Waiuku	2.23% (23)	9,650	2.4/1,000	1
Takanini	2.23% (23)	12267	1.9/1,000	2
Dannemora	1.94% (20)	9,678	2/1,000	1
Burswood	1.36% (14)	1,695	8.3/1,000	1

Table 3 (continued): Location of primary care referrals.

Location of primary care providers	Percentage of total referrals (number)	Population (2018 census data)	Referral rate per 1,000	Number of GP practices within location
Highland Park	1.16% (12)	4512	2.7/1,000	1
Ōtāhuhu	1.16% (12)	15165	0.8/1,000	4
Pakuranga	1.36% (14)	7689	1.8/1,000	4
Tuakau	1.36% (14)	5013	2.8/1,000	1
Beachlands	0.97% (10)	6261	1.6/1,000	1
Drury	0.97% (10)	1197	8.4/1,000	1
Māngere East	0.97% (10)	27372	0.37/1,000	3
Clevedon	0.78% (8)	1515	5.3/1,000	1
Half Moon Bay	0.48% (5)	8106	0.62/1,000	2
Māngere Bridge	0.39% (4)	10296	0.39/1,000	2
Northpark	0.78% (8)	5094	1.6/1,000	1
Pōkeno	0.29% (3)	1668	1.8/1,000	1
Mellons Bay	0.19% (2)	4017	0.5/1,000	1
Golflands	0.10% (1)	2460	0.4/1,000	1
Karaka	0.10% (1)	2904	0.3/1,000	1
Rosehill	0.10% (1)	4071	0.25/1,000	1
Wiri	0.10% (1)	5355	0.2/1,000	1

Table 4: Secondary care referrals by specialty.

	2017	2018	Total
Diabetes	11	22	33
General surgery (including private)	22	7	29
Orthopaedics	10	8	18
Respiratory	3	15	18
Gastroenterology	9	8	17
Gynaecology	1	7	8
General Medicine	3	3	6
Renal	1	5	6
Anaesthetics	2	1	3
Cardiology	0	3	3
Spinal Unit	2	0	2
Urology	1	1	2
Chronic pain	0	1	1
Otolaryngology	1	0	1
Geriatrics	0	1	1
Haematology	0	1	1
Neurology	0	1	1
Oncology	0	1	1
Plastics	0	1	1
Radiation Oncology	0	1	1
Rheumatology	0	1	1
Vascular MMH	1	0	1
Total	67	88	155

COMPETING INTERESTS

Nil.

AUTHOR INFORMATION

Kate Bradley: Department of Older Peoples Health, Middlemore Hospital – Te Whatu Ora – Health NZ, Auckland, New Zealand.

Sarah Cowan: General Surgical Department, Taranaki Base Hospital – Te Whatu Ora – Health NZ, New Plymouth, New Zealand.

Richard Babor: Department of Surgery, Counties Manukau – Te Whatu Ora, New Zealand, Auckland, New Zealand.

Jon Morrow: Department of Surgery, Counties Manukau – Te Whatu Ora, New Zealand, Auckland, New Zealand.

Andrew MacCormack: Department of Surgery, Counties Manukau – Te Whatu Ora, New Zealand; Department of Surgery, Faculty of Medicine and Health Sciences, The University of Auckland, Auckland, New Zealand.

Jamie-Lee Rahiri: General Surgical Department, Taranaki Base Hospital – Te Whatu Ora – Health NZ, New Plymouth, New Zealand.

Rinki Murphy: Medical Bariatric Service, Counties Manukau – Te Whatu Ora, New Zealand; Department of Medicine, Faculty of Medicine and Health Sciences, The University of Auckland, Auckland, New Zealand.

CORRESPONDING AUTHOR

Sarah T Cowan: General Surgical Department, Taranaki Base Hospital – Te Whatu Ora – Health NZ, New Plymouth, New Zealand.
E: sarah.t.cowan@gmail.com

REFERENCES

1. Annual Data Explorer 2018/19: New Zealand Health Survey 376 [Indicator: Obese: BMI of 30.0 or greater (or IOTF equivalent for 377 15-17 years)] [Internet]. New Zealand: Manatū Hauora – Ministry of Health; 2006 [cited 2019 Jan 29]. Available from: <https://www.health.govt.nz/publication/annual-update-key-results-2018-19-new-zealand-health-survey>.
2. The Social Report 2016 – Te pūrongo oranga tangata [Internet]. Wellington: The Ministry of Social Development; 2016 [cited 2022 Mar 15]. Available from: <https://socialreport.msd.govt.nz/documents/2016/msd-the-social-report-2016.pdf>.
3. Lemanu DP, Singh PP, Rahman H, Hill AG, Babor R, MacCormick AD. Five-year results after laparoscopic sleeve gastrectomy: a prospective study. *Surg Obes Relat Dis*. 2015 May-Jun;11(3):518-24. doi: 10.1016/j.soard.2014.08.019.
4. Schauer PR, Bhatt DL, Kirwan JP, Wolski K, Brethauer SA, Navaneethan SD et al. Bariatric surgery versus intensive medical therapy for diabetes--3-year outcomes. *N Engl J Med*. 2014 May 22;370(21):2002-13. doi: 10.1056/NEJMoa1401329.
5. Ding SA, Simonson DC, Wewalka M, Halperin F, Foster K, Goebel-Fabbri A, et al. Adjustable Gastric Band Surgery or Medical Management in Patients With Type 2 Diabetes: A Randomized Clinical Trial. *J Clin Endocrinol Metab*. 2015 Jul;100(7):2546-56. doi: 10.1210/jc.2015-1443.
6. Rahiri JL, Tuhoe J, Gillon A, MacCormick A, Hill A, Harwood M. Enhancing responsiveness to Māori in a publicly funded bariatric service in Aotearoa New Zealand. *ANZ J Surg*. 2020 Apr;90(4):508-513. doi: 10.1111/ans.15610.
7. Taylor T, Wang Y, Rogerson W, Bavin L, Sharon C, Beban G, et al. Attrition After Acceptance onto a Publicly Funded Bariatric Surgery Program. *Obes Surg*. 2018 Aug;28(8):2500-2507. doi: 10.1007/s11695-018-3195-y.
8. Clinical Guidelines for Weight Management in New Zealand Adults [Internet]. Wellington: Manatū Hauora – Ministry of Health; 2017 [cited 2019 Jan 20]. Available from: <https://www.health.govt.nz/publication/clinical-guidelines-weight-management-new-zealand-adults>.
9. Bennett EK, Poppe K, Rahiri JL, MacCormick AD, Tenbensen T, Selak V. Variation in publicly funded bariatric surgery in New Zealand by ethnicity: cohort study of 328,739 patients. *Surg Obes Relat Dis*. 2021 Jul;17(7):1286-1293. doi: 10.1016/j.soard.2021.03.027.
10. Garrett M, Poppe K, Wooding A, Murphy R. Private and Public Bariatric Surgery Trends in New Zealand 2004-2017: Demographics, Cardiovascular Comorbidity and Procedure Selection. *Obes Surg*. 2020 Jun;30(6):2285-2293. doi: 10.1007/s11695-020-04463-x.
11. Rahiri JL, Coomarasamy C, MacCormick A, Harwood M, Hill A. Ethnic Disparities in Access to Publicly Funded Bariatric Surgery in South Auckland, New Zealand. *Obes Surg*. 2020 Sep;30(9):3459-3465. doi: 10.1007/s11695-020-04608-y.
12. Memarian E, Carrasco D, Thulesius H, Calling S. Primary care physicians' knowledge, attitudes and concerns about bariatric surgery and the association with referral patterns: a Swedish survey study. *BMC Endocr Disord*. 2021 Apr 8;21(1):62. doi: 10.1186/s12902-021-00723-8.
13. Tork S, Meister KM, Uebele AL, Hussain LR, Kelley SR, Kerlakian GM et al. Factors Influencing Primary Care Physicians' Referral for Bariatric Surgery. *JLS*. 2015 Jul-Sep;19(3):e2015.00046. doi: 10.4293/JLS.2015.00046.
14. Avidor Y, Still CD, Brunner M, Buchwald JN,

- Buchwald H. Primary care and subspecialty management of morbid obesity: Referral patterns for bariatric surgery. *Surg Obes Relat Dis*. 2007 May-Jun;3(3):392-407. doi: 10.1016/j.soard.2006.12.003.
15. Census [Internet]. Wellington: Stats NZ Tatauranga Aotearoa; 2018 [cited 2022 January 1]. Available from: <https://www.stats.govt.nz/topics/census>
 16. Kelly T, Yang W, Chen CS, Reynolds K, He J. Global burden of obesity in 2005 and projections to 2030. *Int J Obes (Lond)* 2008 Sep;32(9):1431-7. doi: 10.1038/ijo.2008.102.
 17. GBD 2015 Obesity Collaborators; Afshin A, Forouzanfar MH, Reitsma MB, Sur P, Estep K, Lee A et al. Health Effects of Overweight and Obesity in 195 countries over 25 years. *N Engl J Med*. 2017 Jul 6;377(1):13-27. doi: 10.1056/NEJMoa1614362.
 18. Rahiri J, Gillon A, Tuhoe J, MacCormick A, Hill A, Harwood M. Māori experiences of bariatric surgery in South Auckland, New Zealand. *AlterNative: An International Journal of Indigenous Peoples*. 2020 Sep 24;16(4):300-308. doi: 10.1177/117718012095670.

What is affirmative action in tertiary education? An overview of affirmative action policies in health professional programmes, drawing on experience from Aotearoa and overseas

Sophia Barham, Jo Baxter, Peter Crampton

ABSTRACT

Both the universities of Auckland and Otago have had affirmative selection policies for entry into health profession programmes for a number of decades. These policies have been created and strengthened as a result of the leadership and advocacy of Māori leaders, academics and communities. The aims of this paper are to: 1) define affirmative action and outline the rationale for affirmative policies, 2) give examples of how affirmative action policies have been implemented in Aotearoa, and 3) give examples of legal challenges to affirmative action drawing on international experience. Affirmative action policies for health professional programmes are a strategy for improving equity in health through raising the participation of members of population groups that have been historically excluded or under-represented. There are a range of arguments in favour of affirmative policies: constitutional obligations related to Te Tiriti o Waitangi; health professionals from under-represented communities are more likely to serve their communities; they help address biases in healthcare delivery, thereby improving the quality of care; they contribute to health equity through the impact their careers have on the education of others; they are more likely to focus their research on communities they serve and engage with; and their leadership has the potential to benefit the entire system. Legal challenges to affirmative action have been common in some overseas jurisdictions and have resulted in some instances in weaker, or absent, affirmative action policies. We conclude that strong affirmative action policies in tertiary health profession programme admissions contribute to achieving health equity. While much of the literature focusses on admissions to medical programmes, the principles of affirmative action apply equally to all health profession (and other) programmes in Aotearoa.

For almost six decades now, universities around the world have employed affirmative action policies for entry into health profession programmes in an effort to create health workforces that are representative of the communities they serve.¹ The rationale for supporting these programmes is well articulated—in Aotearoa, constitutional obligations related to Te Tiriti o Waitangi are paramount; health professionals from under-represented communities are more likely to serve their communities; they help address biases in healthcare delivery, thereby improving the quality of care; they contribute to health equity through the impact their careers have on the education of others; they are more likely to focus their research on communities they serve and engage with; and their leadership has the potential to benefit the entire system.¹⁻⁹ Despite evidence in support of the effectiveness

of affirmative action policies, affirmative action has become a controversial topic, even becoming unlawful in some jurisdictions overseas.^{5,10-14} In Aotearoa, while the rationale for affirmative action policies in health profession programme admissions may be well evidenced, there is less experience with legal challenges to affirmative action.¹⁵ The aims of this paper are to: 1) define affirmative action and outline the rationale for affirmative policies, 2) give examples of how affirmative action policies have been implemented in Aotearoa, and 3) give examples of legal challenges to affirmative action drawing on international experience. The paper does not attempt to provide a comprehensive review of all historical and contemporary affirmative action policies in Aotearoa's tertiary education institutions, its local examples being drawn largely from the University of Otago.

Affirmative action: comparing and contrasting its definition and rationale in Aotearoa and overseas

Affirmative action is a term used in public, political and professional forums alike.¹⁶ Much of this discourse assumes understanding of the concept without making explicit what interpretation of affirmative action is being used. For example, several papers define affirmative action as policies that “benefit” particular minoritised groups. The word “minoritised” conveys the idea that people are actively minoritised (or majoritised) by colonial structures, rather than naturally existing as a minority.^{17,18} Other authors have narrowed the scope of affirmative action, defining it as “race-conscious admissions”, while others have broadened the definition to encompass all actions taken to systemically improve the representation of groups in professional cohorts.^{10,19–22} In Aotearoa, for example, affirmative action for entry into health profession programmes applies to a variety of groups including Māori, Pasifika, those from rural areas, refugees, and those from low socio-economic backgrounds. In this usage, affirmative action policies focus on health equity and justice for a number of different groups within society, rather than being focussed solely on ethnicity or race.

In all of these definitions there are some core concepts that are shared. The first concept is the representation of communities in different programmes: the rationale of affirmative action policies is to increase the representation of under-represented groups, rather than maintaining the privileged status of groups that are disproportionately over-represented.²³ The second concept is that those groups that are under-represented in the health system have consistently suffered from social and institutional discrimination, both historically and contemporarily, and it is just to correct these marginalising processes. This latter concept is important because it recognises the presence of social structures and processes that create privilege for some groups and disadvantage for others.^{24,25} A definition by Guan (2005) best encapsulates both of these concepts, defining affirmative action as “*introducing measures to raise the participation and representation of members of population groups... where they have been historically excluded or underrepresented*”.²⁶ This definition provides an overview of the purpose of affirmative action policies, and centres these two important concepts. In

highlighting these two central concepts, it is clear that the aims of affirmative action policies are to increase equity and to help correct historical and ongoing injustices.^{2,3,7,15,27}

There are a number of benefits to affirmative action. Based on overseas evidence, health professionals from under-represented groups are more likely to return to their communities after study compared to other students.² They are also more likely to provide culturally and medically appropriate care for patients from those communities for a number of reasons, including sharing a worldview and being able to offer appropriate advice, as well as creating deeper trust and rapport with patients.^{3,6,11,13,28} A representative workforce is also key for diversifying the research agenda for institutions and, as a result, accelerating advances in research and care.²⁹ Diverse worldviews and “lenses”—the set of beliefs, biases and experiences that shape how people see, react and think about different situations and experiences—help to contribute to research agendas that address the needs of diverse communities.^{2,30} As a result, affirmative action policies can be thought of as one tool in an institution’s toolbox, working towards equity for the whole of society, particularly in health.

While the international literature considers the benefits that students from under-represented communities can provide to tertiary institutions, in an Aotearoa context it is important to also consider the responsibility these institutions have in creating equitable representation and a health workforce that can best serve society. A rights-based interpretation of affirmative action has as its foundation Te Tiriti o Waitangi, the foundational, constitutional document of Aotearoa, which defines the rights of Māori and the rights and obligations of the Crown in relation to Māori. In Aotearoa, the obligation to correct injustices arising from colonisation and institutional racism derives from the Crown’s responsibility to rectify breaches to Te Tiriti o Waitangi. As agents of the Crown, tertiary education institutions have an obligation to strive to create equitable outcomes for Māori,^{31,32} including in health professional programmes. Affirmative action is one method by which both educational and health equity can be achieved.

Strong and weak policies with international and national examples

Affirmative action policies have been categorised by some authors as “strong” or “weak”, based on

the extent to which institutions commit to the goal of educational and workforce equity.^{22,33,34} Affirmative action policies are considered strong when they focus and commit fully to the goal of affirmative action: creating a representative workforce that contributes to improving health equity. Strong affirmative action policies are direct, and are not watered down in order to ensure “equality”. Instead, fairness is achieved through creating a student cohort that is representative of the communities they will one day serve. For example, these policies may accept all applicants from a particular group who achieve the requirements for a programme.

Weak affirmative action policies, on the other hand, have been defined as policies that “dilute” affirmative action.^{22,34} These policies include, in some contexts, quotas, an avoidance of “race-based” policies in favour of purely income-based pathways and, in some situations, the preference for “preparatory support” before application to programmes as opposed to policies directly impacting admission.^{16,22,34} These are considered weak policies because they are limited in their scope and effect in regards to achieving equitable representation. An example of a weak affirmative action policy in practice is accepting applicants only when candidates are from an under-represented group and are equal (in performance or “merit”) to over-represented applicants. Some authors argue that quotas are not necessarily indicative of weak policies, and that they can form a part of strong policies.³⁵

“Weak” affirmative action policies are utilised in many countries such as the United States (US), Canada, the United Kingdom (UK) and Australia, albeit with different approaches and varying results. Australia has affirmative action pathways across all sectors, mandated by the *Reconciliation Act 1991*. This includes affirmative action in health profession programme entry.^{8,36–38} Affirmative action policies for admission into health profession programmes have been implemented in some, but not all, Australian universities since 1999.³⁹ The affirmative action policies that have been implemented predominately focus on recruiting students from Aboriginal and Torres Strait Islander communities, as well as rural backgrounds, using methods such as establishing a quota for students from these backgrounds, and introducing an interview to the selection process.³⁹ In Canada, medical schools also have inconsistent approaches to affirma-

tive action policies—those that do employ policies often do so by way of questionnaires that ask students a range of questions including their ethnicity, the socio-economic status of their parents, their gender identity and their rural background if applicable.^{40,41} These characteristics are used to generate a score that is considered as a part of the student’s overall application. Some Canadian medical schools also offer specific affirmative action pathways for Indigenous, Black and rural students.^{40,41} The UK has a strong focus on equity in relation to social class: while support is offered to students through social equity pathways, there is less focus on Black, refugee and immigrant students’ entry into health profession programmes.^{42,43}

The binary framing of affirmative action policies as weak or strong has limitations in the Aotearoa context. Affirmative action policies in Aotearoa should be categorised and evaluated based on how effective they are in creating a representative health workforce and improving health equity in Aotearoa. Some policies considered “weak” by international authors—including bridging courses and support programmes—form an integral part of comprehensive affirmative action programmes in Aotearoa. These programmes help to prepare students for, and support students through, the rigorous, stressful and Western-centric courses that are required for entry to professional programmes. One example of this is the Tū Kahika (TK) programme at the University of Otago. The TK programme is a scholarship for tauira Māori entering tertiary study with an interest in health.⁴⁴ The programme supports tauira through a foundation year, preparing them for Health Sciences First Year, the competitive course required for entry into health profession programmes.⁴⁵ The TK scholarship is a foundational component of the University of Otago’s affirmative admission policy, Te Kauae Parāoa, and has had a direct impact on the number of Māori students in health-related courses, particularly health profession programmes.⁴⁶ A similar programme, Whakapiki Ake, exists at the University of Auckland.^{47,48} This programme provides support for rangatahi in secondary schools as they begin their journeys to tertiary study and careers in health. At both universities these programmes provide crucial support to tauira as they begin thinking about their aspirations for the future and their potential career paths.

Affirmative action: challenges from the past, lessons for the future

Both the universities of Auckland and Otago have had affirmative selection policies for entry into health profession programmes for a number of decades. These policies have been created and strengthened as a result of the leadership and advocacy of Māori leaders, academics and communities.^{15,49–52} Medicine was the first health profession programme to have affirmative policies introduced in both universities, with the first affirmative action programmes being introduced at Otago Medical School in 1951 and in Auckland School of Medicine in 1972. Both universities implemented quota systems, known as the Polynesian Preference Scheme (PPS) at Auckland and the Alternative Pathway at Otago, and both used blood quantum as a measure of Indigeneity up until the 1980s. The PPS at Auckland provided three places to Māori and Pacific students who passed an academic threshold.²¹ In 1987, the Medical Faculty at The University of Auckland acknowledged that the full number of places for Māori and Pacific students had only been filled twice since 1972.⁵³ The number of places available in the scheme was subsequently increased to nine in 1979, to 12 in 1990, and 23 in 1999.^{53,54} In 2020, 77 places were reserved for Māori and Pacific students, with 65 students filling these spaces.⁵⁵

Otago Medical School held two places for Māori or Pacific students from 1951 to 1985. In 1985, the O'Regan report strongly advocated for more “structured” affirmative action policies at the Otago Medical School that would allow for increased numbers of Māori and Pacific matriculants.^{56,57} The report stated that “*the term ‘institutional racism’ is not undeserved*” when considering the operation of the affirmative selection policy at the time.⁵⁶ As a result, the number of places on the alternative pathways rose from two to six students in 1985.⁵⁷

Implemented in 2012, the University of Otago's Mirror on Society policy (re-named as Te Kauae Parāoa in December 2021) aims to create equity in the health workforce in response to Tiriti o Waitangi obligations and to equity objectives.⁵⁸ The policy has no limit on the number of students accepted through the pathways offered (Rural, Equity, Pacific, Refugee background and Māori). 2017 marked the first year that a medical school graduating cohort mirrored the proportion of Māori in Aotearoa. However, it will still be many

decades before this increase translates into proportional representation in the medical workforce, as Aotearoa continues to have an unjust representation of Māori, Pacific, low socio-economic background, refugee background and other minority groups in the health workforce.¹⁴

While there are many practical and legal lessons to learn from affirmative action case studies overseas, an over-arching lesson that the overseas literature provides is that the strength of affirmative action policies, and the extent to which they are protected from weakening, depends on the social and political context of tertiary education institutions.

Some states in the US, for example, have backtracked on their efforts to create a representative student body since the introduction of affirmative action policies in 1964. Some now have weaker affirmative action policies following years of legal challenges against the policies that existed in the 1960s and 70s. Affirmative action policies in the US are generally now characterised as weak, and in eight states there exists a complete ban on affirmative action policies altogether after legal challenges to the policy.^{13,11} These rulings have argued that affirmative action is inherently discriminatory and therefore unlawful (under the *Civil Rights Act 1964*) and that race should only be used as an “additional characteristic” when two otherwise equal applications reach an admissions committee.^{3,11,59} The theme of discrimination is common among many of the legal challenges in other jurisdictions.^{43,60} It is because of the political valuing of “equality” in the US that affirmative action policies have been weakened dramatically over the last 30–50 years.

An important theme in the literature is the equity/equality dichotomy: the belief that affirmative policies give unwarranted advantages to certain groups, and undermine the hard work of other applicants.^{11,37,61} This argument focusses on “equality” (the same selection policies applied to all applicants) at the expense of equity (fairness of representation that takes into account social and historical injustices).^{11,13} Approaches based on “equality” tend to maintain the status quo in terms of health workforce representation, for example, marked under-representation of Black and Native Americans in the US and of Māori and Pacific people in Aotearoa.^{10,11,24,62,63}

Equity approaches, on the other hand, tend to focus on fairness of outcome and opportunity at the level of entire communities and in terms of participation in institutions such as universities. For example, given that only 3% of university

academic staff in Aotearoa are Māori, equity-based approaches would seek to proactively increase this proportion using affirmative policies.⁶⁴ Beltran (2001) frames this as “*providing communities with an equal opportunity to contribute, versus an equal opportunity to get in*”.²⁸ In order to be upholding strong policies, the focus needs to be on achieving health equity in our communities, rather than equality for individuals at the point of admission.

The consequences of weakening or banning affirmative action policies have been quantified.¹⁰ One study followed the number of Black, Indigenous and Hispanic students who applied and were admitted to medical schools in eight US states, before and after an affirmative action ban was implemented.¹⁰ While the number of applications received from Black, Indigenous and Hispanic students did not significantly decrease, the number of these students admitted to medical school the year after a ban was implemented dropped by 4.3% and, over a 4-year period, there was an almost 20% drop in the number of Black, Indigenous and Hispanic students admitted to medicine.¹⁰ Cohen (2003) identified four possible impacts of this decrease: a drop in the quality of medical education that is normally enhanced with a diverse and representative cohort of students, a decrease in access to care that comes with a more representative health workforce, a culturally biased research agenda within institutions and a lack of representative leaders in the health workforce.²

Where affirmative action policies have been banned, medical schools have sometimes adopted covert strategies to maintain similar levels of diverse matriculants in their health professional cohorts.¹⁰ For example, a number of medical admissions committees in Texas, Michigan and California, where affirmative action was banned, adopted an unofficial preference scheme for applicants from minoritised communities. This

approach allowed medical schools to continue taking higher numbers of students from these communities in the absence of an official policy.^{10,63,65} While this approach may circumvent the issue of illegality, it presents other challenges. For example, covert affirmative action strategies rely on committees that are in support of affirmative action, and are therefore reliant on the individual opinions of leaders—which can change (along with their goals and opinions of affirmative action) year by year.⁶⁶ Examples like these demonstrate why countries that intend to hold strongly to affirmative action need to clearly articulate the values that are important to society. The public reaction to the threat of weakening the Mirror on Society policy at the University of Otago in 2020 demonstrated how much these values matter. In order to achieve health equity and uphold the articles of Te Tiriti o Waitangi, affirmative action in Aotearoa deserves to be strong and protected for future generations, until equity is achieved.

Conclusion

In summary, using strong affirmative action policies in tertiary health profession programme admissions contributes to achieving the Crown’s Tiriti o Waitangi obligation to health equity by creating a health workforce that better represents the communities it serves, health-care that is culturally safe and a health research agenda that is more focussed on achieving equity. Tertiary institutions have a responsibility to meet the needs of all communities, not just those that have traditionally been the primary beneficiaries of tertiary education. We look forward to the time when affirmative action policies are no longer required. However, if health equity is to be achieved in Aotearoa then—for the time being—such policies have an essential role to play.

COMPETING INTERESTS

There was no external funding source for preparing this article. The views, opinions, findings and conclusions or recommendations expressed in this paper are strictly those of the authors. They do not necessarily reflect the views of the institutions where the authors currently work. The paper is presented not as policy, but with a view to inform and stimulate wider debate.

ACKNOWLEDGEMENTS

We are grateful for the helpful and insightful comments made by colleagues on earlier drafts of this paper, and by the anonymous reviewers of the paper. We take full responsibility for any errors or omissions in, or for the correctness of, the information contained in this paper.

AUTHOR INFORMATION

Sophia Barham: Kōhatu, Centre for Hauora Māori, University of Otago, New Zealand.

Jo Baxter: Dunedin School of Medicine, University of Otago, New Zealand.

Peter Crampton: Kōhatu, Centre for Hauora Māori, University of Otago, New Zealand.

CORRESPONDING AUTHOR

Sophia Barham: Kōhatu, Centre for Hauora Māori, University of Otago, New Zealand.

E: sophie.barham@otago.ac.nz

REFERENCES

- Lakhan SE. Diversification of U.S. medical schools via affirmative action implementation. *BMC Med Educ.* 2003;3:6. doi: 10.1186/1472-6920-3-6.
- Cohen JJ. The consequences of premature abandonment of affirmative action in medical school admissions. *JAMA.* 2003;289(9):1143-9. doi: 10.1001/jama.289.9.1143.
- Ready T. The Impact of Affirmative Action on Medical Education and the Nation's Health. In: Orfield G, editor. *Diversity Challenged: Evidence on the Impact of Affirmative Action.* Cambridge Harvard Education Publishing Group. 2001:205-19.
- Nivet MA. Minorities in academic medicine: review of the literature. *J Vasc Surg.* 2010;51(4 Suppl):53S-8S. doi: 10.1016/j.jvs.2009.09.064.
- Sassi F, Carrier J, Weinburg J. Affirmative action: the lessons for health care. *BMJ.* 2004;328(7450):1213-4. doi: 10.1136/bmj.328.7450.1213.
- Cantor JC, Miles EL, Baker LC, Barker DC. Physician service to the underserved: implications for affirmative action in medical education. *Inquiry.* 1996;33(2):167-80.
- Ratima MM, Brown RM, Garrett NK, et al. Strengthening Māori participation in the New Zealand health and disability workforce. *Med J Aust.* 2007;186(10):541-3. doi: 10.5694/j.1326-5377.2007.tb01034.x.
- Roseby R, Adams K, Leech M, Taylor K, Campbell D. Not just a policy; this is for real. An affirmative action policy to encourage Aboriginal and Torres Strait Islander peoples to seek employment in the health workforce. *Intern Med J.* 2019;49(7):908-10. doi: 10.1111/imj.14345.
- Maxwell-Crawford K. Indigenous workforce development in Aotearoa. *Pimatisiwin: A Journal of Aboriginal and Indigenous Community Health.* 2011;9(1):53-64.
- Mickey-Pabello D, Garces LM. Addressing Racial Health Inequities: Understanding the Impact of Affirmative Action Bans on Applications and Admissions in Medical Schools. *Am J Educ.* 2018;125(1):79-108. <https://doi.org/10.1086/699813>
- Deville K. Trust, patient well-being and affirmative action in medical school admissions. *Mt Sinai J Med.* 1999;66(4):247-56.
- Davidson RC, Lewis EL. Affirmative action and other special consideration admissions at the University of California, Davis, School of Medicine. *JAMA.* 1997;278(14):1153-8. Erratum in: *JAMA* 1998 Feb 18;279(7):510.
- Sinkford JC, Valachovic RW. Affirmative action: essential to achieving justice and good health care for all in America. *J Dent Educ.* 2003;67(4):468-72.
- Medical Council of New Zealand. The New Zealand Medical Workforce in 2018 [Internet]. Wellington: Medical Council of New Zealand; 2018. cited 2020 Mar 10]. Available from: <https://www.mcnz.org.nz/assets/Publications/Workforce-Survey/434ee633ba/Workforce-Survey-Report-2018.pdf>.
- Curtis E, Wikaire E, Stokes K, Reid P. Addressing indigenous health workforce inequities: a literature review exploring best practice for recruitment into tertiary health programmes. *Int J Equity Health.* 2012 Mar;11:13. doi: 10.1186/1475-9276-11-13.
- Kravitz D. Attitudes Toward Affirmative Action Plans Directed at Blacks: Effects of Plan and Individual Differences. *J Appl Soc Psychol.* 1995;25(24):2192-220.
- Gunaratnum Y. *Researching 'Race' and Ethnicity.* London: Sage; 2003. <https://doi.org/10.4135/9780857024626>.
- Mukherjee A, Mukherjee A, Godard B. *Translating Minoritised Cultures: Issues of Caste, Class and Gender.* Postcolonial Text. 2006;2(3):1-23.
- Collins JP, White GR, Mantell CD. Selection of medical students: an affirmative action programme. *Med Educ.* 1997;31:77-80.
- Puddey IB, Mercer A, Carr SE, Loudon W. Potential

- influence of selection criteria on the demographic composition of students in an Australian medical school. *BMC Med Educ.* 2011;11:97. doi: 10.1186/1472-6920-11-97.
21. Poole PJ, Moriarty HJ, Wearn AM, Wilkinson TJ, Weller JM. Medical student selection in New Zealand: looking to the future. *N Z Med J.* 2009;122(1306):88-100.
 22. Goldman AH. Affirmative action. *Philosophy and Public Affairs.* 1976;5(2):178-95.
 23. Richardson J, Lancendorfer K. Framing Affirmative Action: The Influence of Race on Newspaper Editorial Responses to the University of Michigan Cases. *Press/Politics.* 2004;9(4):74-94.
 24. Kwate NO, Meyer IH. The myth of meritocracy and African American health. 2010;100(10):1831-4. doi: 10.2105/AJPH.2009.186445.
 25. Came H. Sites of institutional racism in public health policy making in New Zealand. *Soc Sci Med.* 2014;106:214-20. doi: 10.1016/j.socscimed.2014.01.055.
 26. Guan L. Affirmative Action in Malaysia. *Southeast Asian Affairs: ISEAS-Yusof Ishak Institution.* 2005:211-28.
 27. Wikaire E, Curtis E, Cormack D, et al. Patterns of privilege: A total cohort analysis of admission and academic outcomes for Māori, Pacific and non-Māori non-Pacific health professional students. *BMC Med Educ.* 2016;16(1):262. doi: 10.1186/s12909-016-0782-2.
 28. Beltran R. Affirmative Action: Good Medicine for Latino/Hispanic Physicians and Patients. *Medicine of the Americas.* 2001;2(1):51-2.
 29. Pololi L, Cooper LA, Carr P. Race, disadvantage and faculty experiences in academic medicine. *J Gen Intern Med.* 2010;25(12):1363-9. doi: 10.1007/s11606-010-1478-7.
 30. Reid P, Paine SJ, Curtis E, et al. Achieving health equity in Aotearoa: strengthening responsiveness to Māori in health research. *N Z Med J.* 2017;130(1465):96-103.
 31. Came H, McCreanor T, Manson L, Nuku K. Upholding Te Tiriti, ending institutional racism and Crown inaction on health equity. *N Z Med J.* 2019;132(1492):61-6.
 32. Selak V, Rahiri JL, Jackson R, Harwood M. Acknowledging and acting on racism in the health sector in Aotearoa New Zealand. *N Z Med J.* 2020;133(1521):7-13.
 33. Nickel JW. Strong affirmative action. *J Ethn Migr Stud.* 1990;17(1):49-57. doi: 10.1080/1369183X.1990.9976220.
 34. Hideg I, Ferris DL. Dialectical thinking and fairness-based perspectives of affirmative action. *J Appl Psychol.* 2017;102(5):782-801. doi: 10.1037/apl0000207.
 35. Schuck PH. Affirmative Action: Past, Present, and Future. *Yale Law and Policy Review.* 2002;20(1):1-96.
 36. Paradies YC. Affirmative action and equity in Aboriginal and Torres Strait Islander health. *Med J Aust.* 2005;183(5):269-70. doi: 10.5694/j.1326-5377.2005.tb07036.x
 37. Barac A, Kelly L. Affirmative Action as a Form of Special Measures in Australia: Canvassing the Hidden Issues. *Australian Indigenous Law Review.* 2014;17(2):56-78.
 38. Springer S, Pitama S, Leslie K, Ewen S. Putting action into the revised Australian Medical Council standards on Aboriginal and Torres Strait Islander and Māori health. *N Z Med J.* 2018;131(1470):79-86.
 39. Puddey IB, Mercer A, Carr SE, Loudon W. Potential influence of selection criteria on the demographic composition of students in an Australian medical school. *BMC Med Educ.* 2011;11:97. doi: 10.1186/1472-6920-11-97.
 40. Friesen J. In a push for diversity, medical schools overhaul how they select Canada's future doctors [Internet]. *The Globe and Mail*; 2019 [cited 2020 Sep 1]. Available from: <https://www.theglobeandmail.com/canada/article-in-a-push-for-diversity-medical-schools-overhaul-how-they-select/>.
 41. Bain C. Programs at 3 of 17 medical schools in Canada aim for equity for Black students [Internet]. *The Canadian Press*; 2020 [cited 2020 Sep 1]. Available from: <https://www.ctvnews.ca/canada/programs-at-3-of-17-medical-schools-in-canada-aim-for-equity-for-black-students-1.5048069>.
 42. McManus IC. Factors affecting likelihood of applicants being offered a place in medical schools in the United Kingdom in 1996 and 1997: retrospective study. *BMJ.* 1998;317(7166):1111-6; discussion 1116-7. doi: 10.1136/bmj.317.7166.1111. Erratum in: *BMJ* 1999 Jan 9;318(7176):94.
 43. Graglia L. The "Affirmative Action" Fraud. *Urban Law Annual; Journal of Urban and Contemporary Law.* 1998;54(1):31-8.
 44. Houia-Ashwell N. The assertion of Tino Rangatiratanga in tertiary education and by Iwi: The Tū Kahika foundation year health sciences scholarship at the University of Otago and the Te Rarawa Response to COVID-19. *New Zealand Medical Student Journal.* 2021;32:48-51.
 45. Māori Health Workforce Development Unit. Tū Kahika [Internet]. University of Otago; 2021 [cited 2022 15 Oct]. Available from: <https://www.otago.ac.nz/mhwdu/tukahika/>.
 46. Houia-Ashwell N. E Tū Kakikatea: An Evaluation of the Tū Kahika Foundation Year Scholarship

- at the University of Otago [Internet]. Dunedin: University of Otago; 2021 [cited 2022 May 20]. Available from: <https://ourarchive.otago.ac.nz/handle/10523/11991>.
47. University of Auckland. Whakapiki Ake Online [Internet]. University of Auckland; 2023 [cited 2023 Apr 16]. Available from: <https://www.auckland.ac.nz/en/fmhs/study-with-us/vision-2020/whakapiki-ake-.html>.
 48. Whakapiki Ake [Internet]. University of Auckland, Whakapiki Ake, Manatū Hauora – Ministry of Health; 2021 [cited 2023 Apr 16]. Available from: <https://www.whakapikiake.com/>.
 49. Reid P. Structural reform or a cultural reform? Moving the health and disability sector to be pro-equity, culturally safe, Tiriti compliant and anti-racist. *N Z Med J*. 2021;134(1535):7-10.
 50. Curtis E, Wikaire E, Jiang Y, et al. A tertiary approach to improving equity in health: quantitative analysis of the Maori and Pacific Admission Scheme (MAPAS) process, 2008-2012. *Int J Equity Health*. 2015;14:7. doi: 10.1186/s12939-015-0133-7.
 51. Crampton P, Baxter J, Bristowe Z. Selection of Māori students into medicine: re-imagining merit. Exploring some of the sociological reasons that might explain the exclusion of Māori from the medical workforce. *N Z Med J*. 2021;134(1543):59-68.
 52. Curtis E, Wikaire E, Jiang Y, et al. Examining the predictors of academic outcomes for indigenous Māori, Pacific and rural students admitted into medicine via two equity pathways: a retrospective observational study at the University of Auckland, Aotearoa New Zealand. *BMJ Open*. 2017;7(8):e017276. doi: 10.1136/bmjopen-2017-017276.
 53. MAPAS. The Story of the Māori and Pacific Island Admissions Scheme from 1972 [Internet]. Auckland: The University of Auckland, Faculty of Medical and Health Sciences; 2020 [cited 2021 Mar 4]. Available from: <https://fmhs-history.blogs.auckland.ac.nz/mapas/#:~:text=The%20first%20student%20admitted%20in,Henry%20Bennett%20was%20medical%20superintendent.>
 54. Collins J, White G, Mantell C. Selection of medical students: an affirmative action programme. *Medical Education*. 1997;31:77-80.
 55. FYI.org.nz. MBChB MAPAS Entry Statistics [Internet]. 2020 [cited 2020 Mar 6]. Available from: <https://fyi.org.nz/request/13406-mbchb-mapas-entry-statistics>.
 56. O'Regan T. Report on the Complaint of Dr. G.A. Wall. Otago: University of Otago; 1985.
 57. Fernando I, Crampton P. The 1985 O'Regan report and a history of Otago Medical School's admissions processes for Māori students. *N Z Med J*. 2022;135(1555):94-8.
 58. University of Otago. University of Otago Calendar 2011 - Medicine: MBChB Regulations. Dunedin: University of Otago; 2011.
 59. Roberts DE. Is race-based medicine good for us?: African American approaches to race, biomedicine, and equality. *J Law Med Ethics*. 2008 Fall;36(3):537-45. doi: 10.1111/j.1748-720X.2008.302.x.
 60. Magnus SA, Mick SS. Medical Schools, Medical schools, affirmative action, and the neglected role of social class. *Am J Public Health*. 2000 Aug;90(8):1197-201. doi: 10.2105/ajph.90.8.1197.
 61. Augoustinos M, Tuffin K, Every D. New racism, meritocracy and individualism: constraining affirmative action in education. *Discourse Soc*. 2005;16(3):315-40.
 62. Garces L. Ban on affirmative action in medicine will hurt all [Internet]. *The Conversation*; 2015 [cited 2020 Mar 10]. Available from: <https://theconversation.com/ban-on-affirmative-action-in-medicine-will-hurt-all-39904>.
 63. Garces LM, Mickey-Pabello D. Racial Diversity in the Medical Profession: The Impact of Affirmative Action Bans on Underrepresented Student of Color Matriculation in Medical Schools. *Higher Educ*. 2015 Mar-Apr;86(2):264-294. doi: 10.1353/jhe.2015.0009.
 64. McAllister T, Naepi S, Wilson E, Hikuroa D, Walker L. Under-represented and overlooked: Māori and Pasifika scientists in Aotearoa New Zealand's universities and crown-research institutes. *Journal of the Royal Society of New Zealand*. 2020:1-16.
 65. Smith SG, Nsiah-Kumi PA, Jones PR, Pamies RJ. Pipeline programs in the health professions, part 1: preserving diversity and reducing health disparities. *J Natl Med Assoc*. 2009 Sep;101(9):836-40, 845-51. doi: 10.1016/s0027-9684(15)31030-0.
 66. The Waitangi Tribunal. Hauora: Report on Stage One of the Health Services and Outcomes Kaupapa Inquiry. Wellington, New Zealand: Waitangi Tribunal; 2019.

End-stage hiatal hernia with cardiac complications

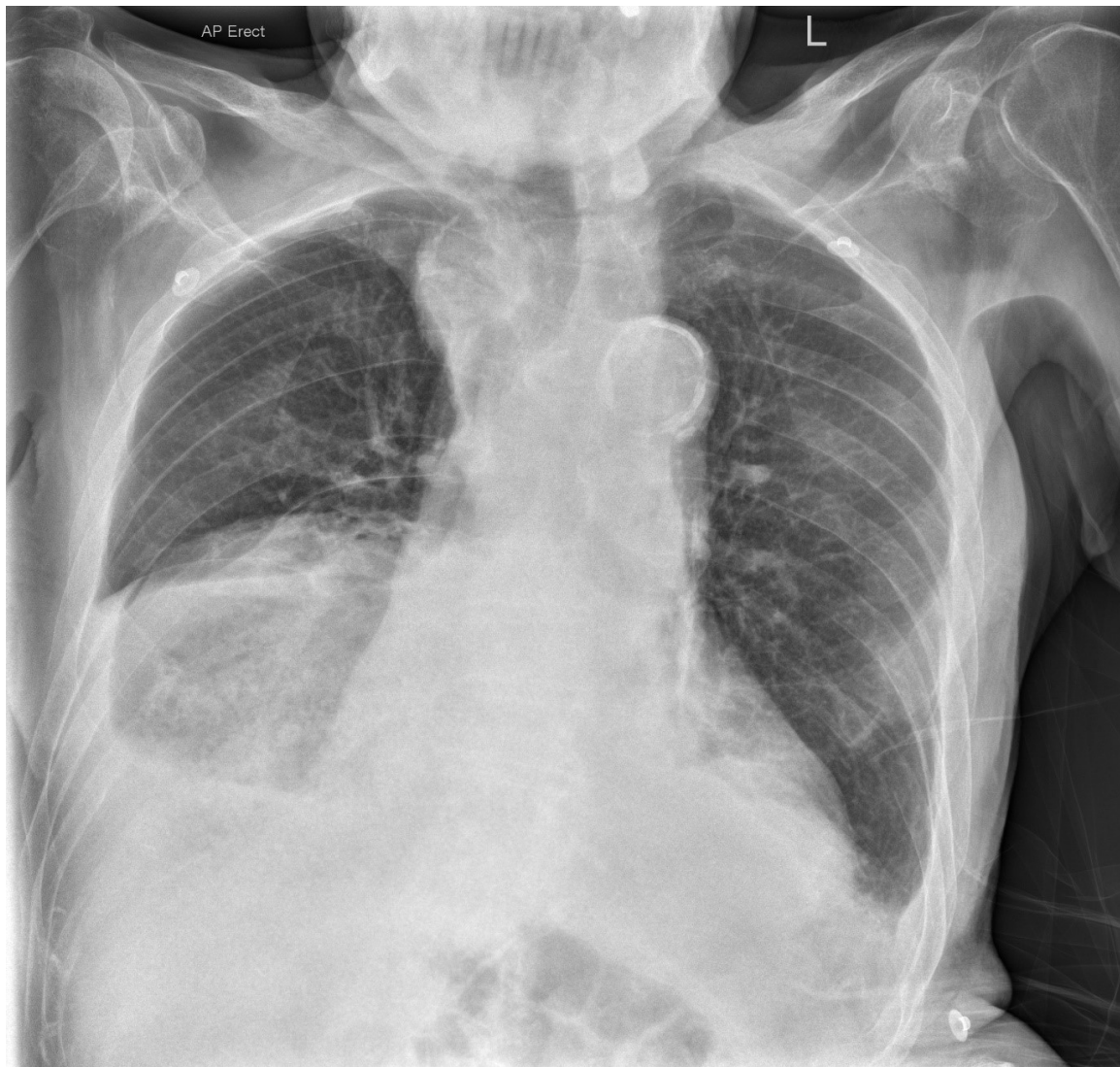
John Ahn, Gary Lau

We describe a case of a fatal cardiac complication from a large hiatus hernia in a centenarian. The patient, 100 years of age, presented with a history of nausea and vomiting for many months, leading to cachexia. On admission into hospital, he was found to be in atrial fibrillation, and his chest X-ray showed bilateral pleural effusions larger on the right, masking his known hiatus hernia (Figure 1).

The chest X-ray, in conjunction with an elevated serum NT-proBNP of 589pmol/L (reference <210pmol/L), were suggestive of heart failure, and a transthoracic echocardiogram was requested to further assess from a cardiac perspective.

The echocardiogram report showed there was a large extra-cardiac mass compressing the left atrium, impeding on left ventricular filling and cardiac output, despite a preserved left ventricular

Figure 1: Chest X-ray demonstrating moderate right and trace left pleural effusions, and an underlying hiatal hernia over the right lower lung field, with radiological appearance of food debris within.



ejection fraction. Underlying atrial fibrillation with rapid ventricular rates of above 120 beats per minute also contributed to reduced cardiac output and left ventricular failure (Figure 2). The nature of the extra-cardiac mass was not entirely clear from echocardiogram but was thought to be his hiatal hernia, given the background.

A Computed Tomography (CT) scan of the chest was performed to better assess the extra cardiac mass. This confirmed a gigantic hiatus hernia, essentially an intrathoracic stomach. There was

organo-axial volvulus with obstruction, and extensive food debris within the distended stomach (Figure 3).

An attempt to decompress the stomach with a gastroscopy and nasogastric tube was unsuccessful.

Surgical consult was requested, but given the patient’s frailty, and the magnitude of the surgery, a palliative approach was taken. The patient died 12 days after admission and no post-mortem examination was performed.

Figure 2: Four-chamber view of the heart. The left atrium on bottom right view (labelled LA) is visibly compressed by an external mass, with an inverted shape and is much smaller in dimension compared to the right atrium on bottom left view (note Video 1 as supplementary material: please contact the corresponding author to view).

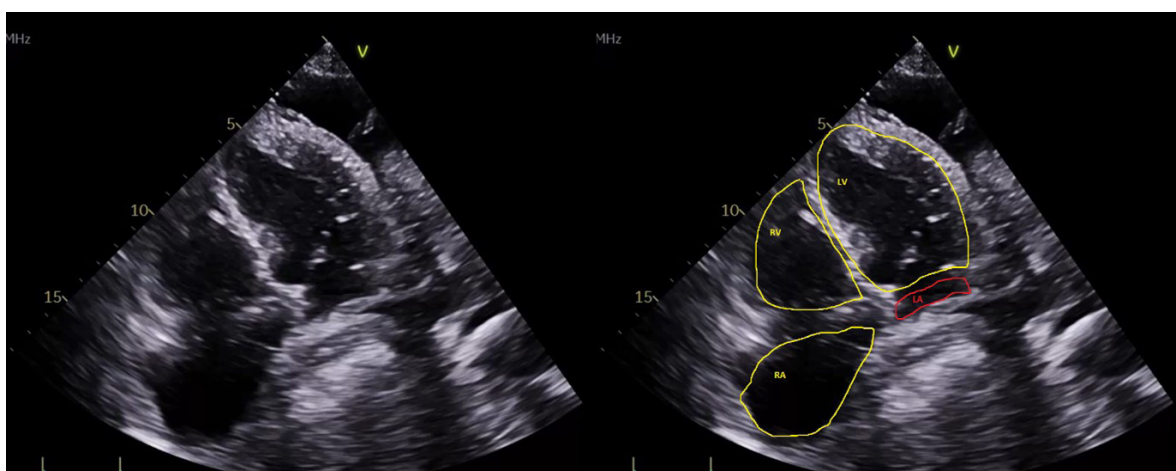
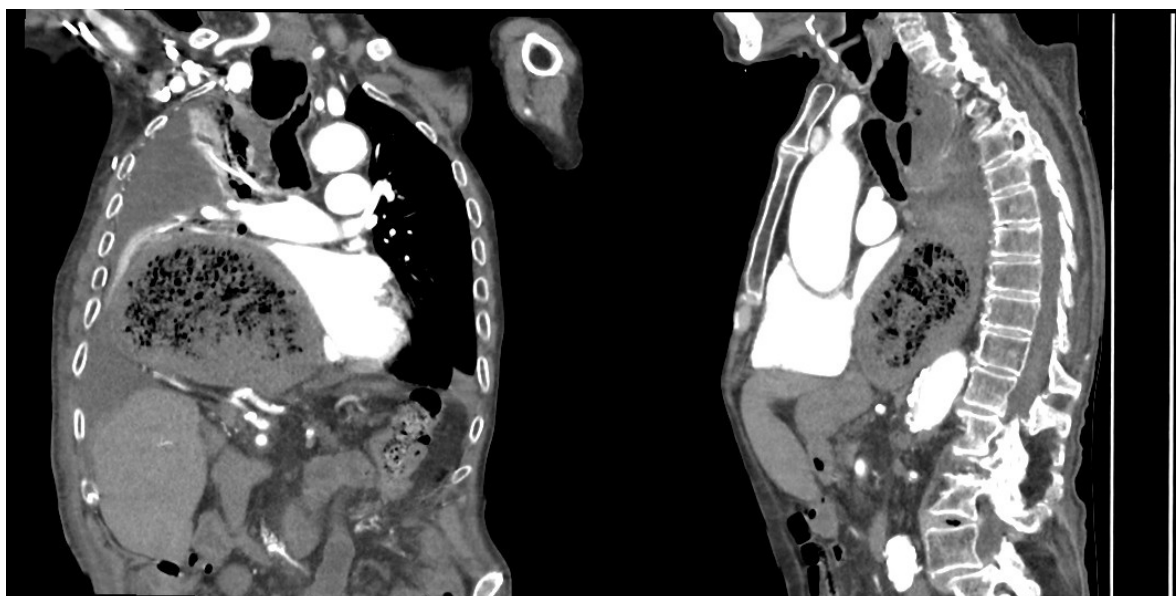


Figure 3: CT coronal and sagittal view demonstrating the large hiatal hernia with visible compression of the left atrium. There is also large pleural effusion on the right.



Discussion

Our case illustrates a rare phenomenon of end-stage hiatal hernia. Incidence of intrathoracic stomach is extremely low, of approximately 0.3% of all hiatal hernias only.^{1,2}

Intrathoracic hiatal hernia can be difficult to diagnose as it can present with unusual symptoms but dangerous complications, including bleeding, perforation, and obstruction. Simple chest X-ray may not show obvious changes of obstruction, as in cases of bowel obstruction on abdominal X-ray, hence the diagnosis is often made incidentally. The diagnosis can be evasive if there is not a high clinical suspicion.

As in our case, the presentation may be with symptoms of gastric outlet obstruction, but with relatively benign chest X-ray appearance. What led to the eventual diagnosis was in fact an investigation into his cardiac presentation with clinical heart failure, and atrial fibrillation.

Intrathoracic stomach is a recognised entity that can cause left atrial extrinsic compression, as can be seen on the transthoracic echocardiogram. Differential aspects for this appearance on echocardiogram can include oesophageal masses, ascending aorta aneurysm, spinal osteophytes,

pulmonary masses and mediastinal masses.³ If the clinical suspicion is present, a helpful diagnostic technique includes ingestion of a carbonated beverage—with or without echogenic contrast media—at the time of echocardiography, which can show the carbonated bubbles appearing in the stomach.⁴

CT scan is the modality of choice to further assess for cause of left atrium compression, as was utilised in our case.

Patients with left atrial compression can develop low cardiac output state from impaired filling of the atria and the left ventricle, as well as pulmonary oedema from the increased left atrial pressure. A compensatory tachycardia can develop. Left atrial compression from hiatal hernia has also been found to cause “swallow syncope”, and reduced exercise capacity.^{5,6,7} Clinical evidence of such cardiac compromise or cardiac failure from end-stage hiatal hernia compressing on left atrium would be an indication for acute surgical intervention.

In summary, end-stage hiatal hernia is a rare phenomenon that is difficult to diagnose without a high clinical suspicion due to its unusual presentation. Despite its rarity, it can be a fatal condition, as illustrated in our case.

COMPETING INTERESTS

Nil.

AUTHOR INFORMATION

John Ahn: Registrar, Cardiology Department, North Shore Hospital, Auckland.

Gary Lau: Cardiologist, Cardiology Department, North Shore Hospital, Auckland.

CORRESPONDING AUTHOR

John Ahn: Registrar, Cardiology Department, North Shore Hospital, Auckland.

E: saebeolphi@hotmail.com

REFERENCES

1. Bilgin YM, van der Wiel HE. An unusual presentation of a patient with intrathoracic stomach: a case report. *Cases J.* 2009;2:7514. doi: 10.4076/1757-1626-2-7514.
2. Krawiec K, Szczasny M, Kadej A, et al. Hiatal hernia as a rare cause of cardiac complications - case based review of the literature. *Ann Agric Environ Med.* 2021;28(1):20-26. doi:10.26444/aaem/133583.
3. Koskinas KC, Oikonomou K, Karapatsoudi E, Makridis P. Echocardiographic manifestation of hiatus hernia simulating a left atrial mass: Case report. *Cardiovasc Ultrasound.* 2008;6:46. doi: 10.1186/1476-7120-6-46.
4. Naoum C, Kritharides L, Gnanenthiran SR, et al. Valsalva maneuver exacerbates left atrial compression in patients with large hiatal hernia. *Echocardiography.* 2017;34(9):1305-1314. doi:10.1111/echo.13628.
5. Naoum C, Falk GL, Ng ACC, et al. Left atrial compression and the mechanism of exercise impairment in patients with a large hiatal hernia. *J Am Coll Cardiol.* 2011;58(15):1624-1634. doi:10.1016/j.jacc.2011.07.013.
6. Gnanenthiran SR, Naoum C, Hanzek D, et al. Feeding Induces Left Atrial Compression and Impedes Cardiac Filling in Patients With Large Hiatal Hernia. *J Am Soc Echocardiogr.* 2019;32(3):375-384. doi:10.1016/j.echo.2018.09.017.
7. Gnanenthiran SR, Naoum C, Kilborn MJ, Yiannikas J. Posterior cardiac compression from a large hiatal hernia-A novel cause of ventricular tachycardia. *HeartRhythm Case Rep.* 2018 May 23;4(8):362-366. doi: 10.1016/j.hrcr.2018.05.003.

Paternal depression among fathers in the Christchurch Health and Development Study

Louise Rippin, Geraldine McLeod, Jacki Henderson, Joseph Boden

Paternal depression is a growing global health concern, as the mental health of fathers subsequently impacts the psychological, physical and mental health of the developing child.^{1,2} Paternal depression is defined as a mood episode that has its onset either during pregnancy or postpartum.³ The perinatal period is defined as the period of pregnancy and the first year postpartum.⁴ Like mothers, fathers may experience “baby blues” in the first couple of weeks after a child is born.¹ Baby blues is defined as feelings of sadness or moodiness, which tend to diminish over subsequent weeks.¹ Approximately 80% of mothers are affected, while the rate for fathers is unknown because previous research has tended to focus on mothers.^{1,5} Over these periods, men may also be at risk of developing paternal depression.¹ Nearly three decades ago, Ballard et al.⁶ suggested that fathers can experience depressed mood, worry, loss of interest, social withdrawal and role confusion as they transition into fatherhood.

Paternal depression is a form of distress potentially compromising the daily care of a child.⁷ Associations may exist between depression in fathers and later emotional and behavioural problems, and subsequent psychopathology.² Furthermore, as family dynamics change, and fathers take on the role of primary caregiver, the impact of paternal depression on both the child and the family needs to be considered.

Previous research has shown that paternal depression was more prevalent in younger fathers relative to older fathers.^{6,8} For example, birth cohort data showed that approximately 10% of fathers aged under 25 years experienced depression.⁸ Given this finding, it is important to examine paternal depression within a New Zealand context. To date, this issue is understudied. In this study, we examine the rates of major depression among men within 1 year after the birth of their child.

Methods

Participants

Participants were male cohort members from the Christchurch Health and Development Study (CHDS). This birth cohort consists of 1,265 individuals (635 males) born over a 4-month mid-1977 recruitment period in Christchurch, New Zealand.⁹ The cohort has been assessed at birth, 4 months, annually to age 16 years and then at ages 18, 21, 25, 30, 35 and 40 years. Data were gathered using a combination of sources including parental interviews, interviews with the cohort member, teacher reports, standardised testing and medical and other official records. All phases of the study have received approval from the regional Health and Disability Ethics Committee.

Eligibility

Fathers were included in this study if the measure of major depression was obtained no more than 1 year after their child's birth. In total, the CHDS obtained data from 363 fathers; 168 fathers met the eligibility criteria.

Measures

Major depression (18–40 years)

At ages 18, 21, 25, 30, 35 and 40 years, participants completed a detailed interview on their experience of the following mental health problems since the previous assessment. Questioning was based on the relevant components of the Composite International Diagnostic Interview [CIDI]¹⁰ and the criteria of the Diagnostic and Statistical Manual of Mental Disorders, 4th edition [DSM-IV].¹¹ Participants were classified on a dichotomous measure reflecting whether they met diagnostic criteria for major depression at ages 18, 21, 25, 30, 35 and 40 years for the assessment intervals from 17–18, 20–21, 24–25, 29–30, 34–35 and 39–40 years.

Analysis

Tabular analysis was used to identify the rates of paternal depression. Statistical significance ($p < 0.05$) was determined using Fisher exact Chi-squared tests for independent samples, as cell counts were below $n = 10$.¹² This test examined rates of major depression between younger (< 30 years) and older fathers (34+ years).

Results

Table 1 shows that 5.4% of fathers were affected by major depression. The highest prevalence of major depression occurred among fathers younger than 30 years. No fathers aged 34+ years were classified as having major depression. The Fisher exact test was statistically significant ($p = 0.014$).

Discussion

This study has shown that younger fathers may be at greater risk of experiencing major depression. This finding is consistent with previous literature; however, rates of paternal depression were double those of prior research.^{6,8}

Research into paternal depression is important—not only for the father but also the family—because of the impacts on the developing child and the relationship with the other parent.^{1,2} Previous literature has had a greater focus on mothers as previously, as they have most often been the main caregiver. However, an increasing

number of fathers are taking on the role of primary caregiver.¹³

Limitations include a relatively small sample size compared to past research.^{2,8} In addition, while data on major depression were obtained annually, the birth dates of the children had not been recorded. This meant that unless the birth was within 12 months of the assessment, it was unclear when individuals had fathered children. Therefore, many fathers did not meet the inclusion criteria for eligibility. These limitations may help to explain why the results from this study differ from previous research. However, the longitudinal nature of the CHDS is a strength allowing participants to be followed across their lifespan. Additionally, major depression was assessed using the CIDI and DSM-IV criteria. This ensured only those with major depression were included, ensuring results were not confounded by the inclusion of individuals with low levels of depressive symptomatology.

In conclusion, findings of the current study support previous research into the rates of paternal depression.^{1,2} Fathers may be at risk of major depression after childbirth, particularly those aged under 30 years. Clinicians should consider assessing both new mothers and fathers for depressive symptomatology.^{2,7} In future, more research needs to examine this issue. This will ensure adverse outcomes of parental depression will be minimised through the provision of timely support to those who need it.

Table 1: Rates of major depression among fathers (18–40 years) in the Christchurch Health and Development Study cohort within 12 months of their first child's birth

Age (years)	Number of fathers (n)	Major depression	
		%	(N)
17–18	10	20.0	2
20–21	15	33.3	5
24–25	22	0.0	0
29–30	57	3.5	2
34–35	45	0.0	0
39–40	19	0.0	0
Total 17–40	168	5.4	9

COMPETING INTERESTS

The authors declare no conflict of interest. The authors alone are responsible for the content and writing of the paper. This research was funded by the Health Research Council of New Zealand (Program Grant 16/600). This research was previously funded by grants from the National Child Health Research Foundation (Cure Kids), the Canterbury Medical Research Foundation and the New Zealand Lottery Grants Board.

ACKNOWLEDGEMENTS

The authors would like to thank the Christchurch Health and Development Study participants for their life-long involvement in this study.

AUTHOR INFORMATION

Louise Rippin: School of Psychology, Speech & Hearing, University of Canterbury, Christchurch.

Geraldine McLeod: Christchurch Health and Development Study, Department of Psychological Medicine, University of Otago, Christchurch.

Jacki Henderson: School of Psychology, Speech & Hearing, University of Canterbury, Christchurch.

Joseph Boden: Christchurch Health and Development Study, Department of Psychological Medicine, University of Otago, Christchurch.

CORRESPONDING AUTHOR

Professor Joseph Boden: Christchurch Health and Development Study, Department of Psychological Medicine, University of Otago, Christchurch. E: joseph.boden@otago.ac.nz

REFERENCES

1. Cajiao-Nieto J, Torres-Giménez A, Merelles-Tormo A, Botet-Mussons F. Paternal symptoms of anxiety and depression in the first month after childbirth: A comparison between fathers of full term and preterm infants. *J Affect Disord*. 2021 Mar 1;282:517-526. doi: 10.1016/j.jad.2020.12.175
2. Ramchandani P, Stein A, Evans J, O'Connor TG; ALSPAC study team. Paternal depression in the postnatal period and child development: a prospective population study. *Lancet*. 2005 Jun 25-Jul 1;365(9478):2201-5. doi: 10.1016/S0140-6736(05)66778-5.
3. Gawlik S, Müller M, Hoffmann L, et al. Prevalence of paternal perinatal depressiveness and its link to partnership satisfaction and birth concerns. *Arch Womens Ment Health*. 2014 Feb;17(1):49-56. doi: 10.1007/s00737-013-0377-4.
4. Garcia ER, Yim IS. A systematic review of concepts related to women's empowerment in the perinatal period and their associations with perinatal depressive symptoms and premature birth. *BMC Pregnancy Childbirth*. 2017 Nov 8;17(Suppl 2):347. doi: 10.1186/s12884-017-1495-1.
5. Canadian Paediatric Society. Depression in pregnant women and mothers: How children are affected. *Paediatr Child Health*. 2004 Oct;9(8):584-601. doi: 10.1093/pch/9.8.584.
6. Ballard CG, Davis R, Cullen PC, et al. Prevalence of postnatal psychiatric morbidity in mothers and fathers. *Br J Psychiatry*. 1994 Jun;164(6):782-8. doi: 10.1192/bjp.164.6.782.
7. Epifanio MS, Genna V, De Luca C, et al. Paternal and Maternal Transition to Parenthood: The Risk of Postpartum Depression and Parenting Stress. *Pediatr Rep*. 2015 Jun 24;7(2):5872. doi: 10.4081/pr.2015.5872.
8. Lee Y, Fagan J, Chen WY. Do late adolescent fathers have more depressive symptoms than older fathers? *J Youth Adolesc*. 2012 Oct;41(10):1366-81. doi: 10.1007/s10964-011-9717-8.
9. Fergusson DM, Horwood LJ. The Christchurch Health and Development Study. In: Joyce P, Nicholls G, Thomas K, Wilkinson T, editors. *The Christchurch Experience: 40 Years of Research and Teaching*. Christchurch: University of Otago; 2013. p 79-87.
10. World Health Organization. Odds Ratios (95% Confidence Intervals) for outcome (in comparison to non-abused group). *Composite International Diagnostic Interview (CIDI)*: Geneva; 1993.
11. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders (4th ed.)*. Washington, DC: American Psychiatric Publishing; 1994.
12. de Lima Cabral DR, de Barros RSM. Concept Drift Detection Based on Fisher's Exact Test. *Information Sciences*. 2018; 442:220-34.
13. Hunter SC, Riggs DW, Augoustinos M. Constructions of Primary Caregiving Fathers in Popular Parenting Texts. *Men Masc*. 2020; 23(1):150-69.

How far are we with Indigenising psychology training curriculum in Aotearoa New Zealand?

Waikaremoana Waitoki, Kyle Tan, Logan Hamley, Damian Scarf, Otilie Stolte, Joanna Chan

The over-reliance on Western, Educated, Industrialised, Rich, and Democratic (WEIRD) paradigms and perspectives in psychology has concerned many scholars in Aotearoa New Zealand.¹⁻³ The importation of European and North American knowledge sources, and the subsequent normalisation of WEIRD psychology in Aotearoa, exemplify settler colonialism that perpetuates institutional racism through the ongoing prioritisation of Eurocentric knowledge systems in the teaching of psychology, training of psychologists and delivery of psychological services.^{1,2,4} The dominance of WEIRD psychology under a monocultural lens results in ignorance and apathy in relation to the diverse realities and aspirations of Indigenous and minoritised cultural groups.^{1,2} Consequently, Māori are in a constant struggle to exert tino rangatiratanga (self-determination) and ensure that the knowledge production and practices of psychology align with he tirohanga Māori (a Māori worldview).

Ample evidence over the past 40 years highlights the marginalisation of mātauranga (knowledge) Māori in psychology. In 1985, a survey with nine directors of psychology training programmes (including clinical, educational and community) found four programmes included some taha Māori (Māori content) and five had none.⁵ A desktop analysis of 134 psychology graduate courses in 2003 revealed only two (1.5%) were specifically Māori-focussed.³ The statistics remained relatively similar in a replicated study of 222 graduate courses in 2015, with two (0.9%) courses identified as specifically Māori-focussed while 15 (6.8%) had inclusion of Māori-focussed content.⁶ These findings illustrate the dominance of WEIRD psychological paradigms, frameworks and models in psychology programmes across Aotearoa universities that are of limited relevance to the realities of Māori.

In 2018, a claim was lodged to the Waitangi

Tribunal concerning the failure of the Crown to uphold Te Tiriti o Waitangi principles in the regulation, training and employment of psychologists.⁷ Both the New Zealand Psychologists Board (the Crown agent that accredits psychology training programmes) and universities were critiqued for not fulfilling key responsibilities. The claim stated that greater efforts are needed in order to expand programmes informed by mātauranga Māori, provide culturally safe learning environments, advance Māori participation and improve Māori education outcomes that align with the Tertiary Education Strategy.⁷ In particular, there is an urgent need to ensure professional training prepares students to attain the standards set by the core competency guidelines for psychologists.^{8,9} As universities consider their roles in meeting institutional Te Tiriti commitments (and implement changes to follow the future recommendations of the tribunal claim), it is now an appropriate time to measure the progress through a desktop analysis of Māori-focussed content in professional psychology training courses (n=139). These professional programme courses are required to be completed at a satisfactory level prior to registration as a psychologist with the New Zealand Psychologists Board. See Table 1 for the psychology training courses that we examined in 2022.

The descriptors and learning outcomes of each course were carefully analysed to identify whether they met the following categories: 1) specifically Māori-focussed; 2) inclusion of Māori-focussed content; and 3) inclusion of reference to culture (see Levy & Waitoki, 2015).⁶ Table 2 shows the majority of courses were not specifically Māori-focussed and did not include Māori-focussed content. Only four (2.9%) courses were specifically Māori-focussed: Indigenous Research Methodologies (Massey); Kaupapa Māori Psychology (Waikato); and two short courses (completed between 22 to 28 hours) that introduce the Hui Process and Meihana Model (Otago). Compared to the analysis in 2015, there were two

Table 1: Psychology training programmes in Aotearoa New Zealand in 2022.

Provider	Course(s)
Auckland University of Technology	Counselling psychology (8)
University of Auckland	Applied behaviour analysis (10); clinical psychology (5); health psychology (8)
University of Waikato	Applied behaviour analysis (8); clinical psychology (11); community psychology (7)
Massey University	Clinical psychology (13); educational psychology (15); general psychology (4)
Victoria University of Wellington	Clinical psychology (6); educational psychology (13); health psychology (7)
University of Canterbury	Child and family psychology (11); clinical psychology (9)
University of Otago	Clinical psychology (4)

Note: n indicates the total number of papers within each scope of psychology for each university.

Table 2: Māori-focussed paper content in different scopes of psychology in 2022.

	Specifically Māori-focussed (n)	Inclusion of Māori-focussed content (n)	Inclusion of culture-focussed content (n)
Applied behaviour analysis (18)	0	3	0
Child and family psychology (11)	0	1	0
Clinical psychology (48)	3	16	15
Counselling psychology (8)	0	6	2
Community psychology (7)	0	4	1
Educational psychology (28)	1	11	9
Health psychology (15)	0	5	3
General psychology (4)	0	4	0
Total (139)	4	50	30

Note: only requisite courses with coursework and practical components were examined. Each course was only coded once.

additional courses in 2022 that were specifically Māori-focussed.

One third (36.0%) of professional programme courses included Māori-focussed content. This category consists of courses that challenge students to consider Māori inequities in health and outcomes, application of Te Tiriti in psychological practice and bicultural issues. While the increase

in the number of courses reflecting taha Māori is a positive indicator, the fact that only four courses were specifically Māori-focussed suggests that programmes continue to have a strong WEIRD psychology positioning.

A smaller proportion (21.6%) of course descriptions contend that students will be taught the concepts of “cultural competency” or “cultural safety”,

which includes the development of awareness of their own positionality and cultural values. The third category also consists of courses that address cultural influences on practices and culturally relevant knowledge of working with different groups in Aotearoa, although these do not make explicit reference to biculturalism and Māori psychological practices.

The presence of Māori-focussed content is a “key indicator of disciplinary and professional commitment to Māori responsiveness, visibility and participation in psychology” (p 14).¹⁰ However, these courses must occur within a kaupapa Māori informed learning environment, otherwise the overall educational experience may be viewed as tokenistic. Of concern is that most psychology scopes do not have specifically Māori-focussed courses that centre on mātauranga Māori content. Our findings raise questions regarding the existence of genuine institutional will to decolonise psychology and bolster the responsiveness of psychology for Māori.¹⁰ While some progress is being made in introducing Māori-focussed content in psychology training curricula, there is little evidence of meaningful integration of Kaupapa Māori psychology. These results echo concerns held by Māori psychologists and academics^{2,3,11} that meaningful change must be visible, Māori centred and led by Māori.¹² Suggestions on how to improve the pace of change have been promoted;^{10,13} however, these changes require a significant shift in power and a critical understanding of epistemic and institutional racism.^{1,4}

Psychological training is an ecology that, as has been established both locally in Aotearoa^{1,14} and internationally,^{15,16} is largely monocultural and premised on WEIRD psychology. The implications of such an ecology for Indigenous and minoritised peoples who wish to assert their cultural practices or ideology is that they are not taken seriously, or that they must do the labour of decolonising the curriculum.¹⁷ At the same time, WEIRD psychology is free to dogmatically maintain its position as a holder of scientific truth without recognising its Eurocentric epistemic standpoint.^{15,16} The freedom to define the veracity of knowledge while excluding others, or by not resourcing or making space for other knowledge to flourish, is a hallmark of settler-colonial privilege. Further, given the length of time available to the profession to respond to commitments to Te Tiriti o Waitangi, we can only agree with previous writers that entrenched patterns of institutional and epistemic racism

are a driving reason for limited Māori-focussed psychology courses.

The commissioned report by the National Standing Committee on Bicultural Issues (NSCBI), New Zealand Psychological Society (NZPsS) and New Zealand College of Clinical Psychologists (NZCCP) highlighted that adequate resourcing for Māori workforce development is necessary to enable issues relevant to Māori to be explored. For example, resources based on an equity approach could grow a specialised Indigenous Psychology workforce¹⁰ and provide support for students throughout the term of their training. There are also concerns that incorporation of mātauranga Māori is done on an *ad hoc* basis as psychology continues to grapple with calls to Indigenise the discipline.^{10,14} Across the 139 reviewed psychology courses, more transparency is needed to expose insensitive consideration of Māori needs given that we found conflating references to concepts such as biculturalism and multiculturalism, and principles from Treaty (the English text) and Te Tiriti (the Māori text).

The responsibility for limited progress in psychology has often been attributed to a lack of Māori academic staff to contribute directly to teaching students, to educate colleagues and to supervise students.^{2,14,17} The lack of Māori staff in psychology constitutes a challenge for the New Zealand Psychologists Board and schools of psychology who are charged with implementing policies that will increase the visibility of Māori across all areas of psychology. These institutions have obligations to consider the implications of Te Tiriti that include proposing and implementing innovative solutions to increase Māori representation in psychology. Responses include increasing the number of Māori-focussed undergraduate courses to attract and retain more Māori students into pursuing psychology and employing Māori with expertise in mātauranga Māori (who do not necessarily have formal training in psychology) to contribute to the programme.

The current study provides preliminary insights into the ongoing challenges of ensuring that students training to become registered psychologists have sufficient Māori-focussed content and a Māori-inclusive learning environment. An in-depth analysis of course content (including other teaching materials) can provide more information on how Māori-focussed content is covered. However, the inclusion of specific reference to Māori content within the course descriptor is essential to demonstrate a commitment towards

Indigenising psychology. Our recommendation is to explicitly state which courses are indeed Māori-focussed—otherwise, there is a possibility that it is not at the point of change needed to make a difference to the learning outcomes.

The WERO team is also undertaking an upcoming study that involves replicating Abbott and Durie's 1987 research⁵ to evaluate other components of psychology training programmes, such as selection processes, prerequisite training in Te Reo (language), he tirohanga Māori, the number

of Māori academic staff and the relationship of school or departments of psychology with Māori advisory bodies. The overarching objective of the current desktop scan, and the ongoing WERO research programme, is to identify the ongoing barriers to Māori participation in psychology. The entrenched constraints and systemic racism need to be highlighted and addressed if we are to genuinely realise Te Tiriti aspirations in shaping a responsive and relevant psychology discipline and profession in Aotearoa.

COMPETING INTERESTS

Nil.

ACKNOWLEDGEMENTS

The current research constitutes a larger WERO project (Systemic Racism in Health Education, Training, and Practice) that focusses on the three dimensions of racism in psychology in Aotearoa: its costs, systems and the potential responses that exist. This work was supported by the Ministry of Business, Innovation and Employment Endeavour Research Programme, “Working to End Racial Oppression” (UOWX2002).

AUTHOR INFORMATION

Waikaremoana Waitoki: Associate Professor, Faculty of Māori and Indigenous Studies, University of Waikato, Hamilton, Aotearoa New Zealand.

Kyle Tan: Research Fellow, Faculty of Māori and Indigenous Studies, University of Waikato, Hamilton, Aotearoa New Zealand.

Logan Hamley: Lecturer, School of Psychology, University of Waikato, Hamilton, Aotearoa New Zealand.

Damian Scarf: Associate Professor, Department of Psychology, University of Otago, Dunedin, Aotearoa New Zealand.

Ottilie Stolte: Senior Lecturer, School of Psychology, University of Waikato, Hamilton, Aotearoa New Zealand.

Joanna Chan: PhD candidate, Department of Psychology, University of Otago, Dunedin, Aotearoa New Zealand.

CORRESPONDING AUTHOR

Kyle Tan: Research Fellow, Faculty of Māori and Indigenous Studies, University of Waikato, Hamilton, Aotearoa New Zealand. E: k.tan@waikato.ac.nz

REFERENCE

1. Groot S, Le Grice J, Nikora L. Indigenous psychology in New Zealand. In: Li W, Hodgetts D, Foo K, editors. *Asia-Pacific perspectives on intercultural psychology*. London: Routledge; 2018. p. 198-217.
2. Love C. Keynote address: The Proceedings of the National Māori Graduates of Psychology Symposium 2002: Making a difference. The Māori & Psychology Research Unit, University of Waikato; 2002.
3. Levy M. Indigenous psychology in Aotearoa: Realising Māori aspirations. The University of Waikato (PhD thesis); 2007.
4. Pomare P, Ioane J, Tudor K. Racism in New Zealand psychology, or, would Western psychology be a good thing? In: Newnes C, editors. *Racism in Psychology: Challenging theory, practice and institutions*. London: Routledge; 2021. p. 110-30.
5. Abbott MW, Durie MH. A whiter Shade of Pale: Taha Maori and Professional Psychology Training. *NZ J Psychol*. 1987;16:58-71.
6. Levy MP, Waitoki W. Māori Psychology Workforce & Māori-Focussed Course Content Review [Internet]. The University of Waikato; 2015 [cited 2023 Mar 31]. Available from: <https://researchcommons.waikato.ac.nz/handle/10289/9847>.
7. Levy M. The health services and outcomes kaupapa inquiry (Wai 2725, #1.1.1) [Internet]. 2018 [cited 2023 Mar 31]. Available from: https://forms.justice.govt.nz/search/Documents/WT/wt_DOC_137601318/Wai%202725%2C%201.1.001.pdf.
8. Love C, Waitoki W. Multicultural competence in bicultural Aotearoa. In: Evans I, Rucklidge J, & O'Driscoll M, editors. *Professional practice of psychology in Aotearoa New Zealand*. Wellington: New Zealand Psychological Society; 2007. p 265-280.
9. New Zealand Psychologists Board. Core competencies for the practice of psychology in Aotearoa New Zealand [Internet]. 2018 [cited 2023 Mar 31]. Available from: https://psychologistsboard.org.nz/wp-content/uploads/2022/12/Core_Competencies.pdf.
10. NSCBI, NZPsS, NZCCP. Indigenous psychology in Aotearoa: Reaching our highest peaks. 2018 [cited 2023 Mar 31]. Available from: https://ndhadeliver.natlib.govt.nz/delivery/DeliveryManagerServlet?dps_pid=IE79409165.
11. Paewai M. Cultural safety within clinical psychology: A Māori perspective. The University of Waikato (Master of Social Science thesis); 1997.
12. Smith LT. *Decolonising Methodologies: Research and Indigenous Peoples*. Dunedin: University of Otago Press; 1999.
13. Smith LT. An open letter to psychology. In: Waitoki, W., Le Grice, J., Nairn, R., Black, R., and Pehi, P, editors of *Kua tū, kua oho. Bicultural keynote addresses to the New Zealand Psychological Society Rōpū Mātai Hinengaro o Aotearoa*. Wellington: New Zealand Psychological Society; 2021. p. 85-108.
14. Britt E, Macfarlane A, Macfarlane S, et al. Growing a culturally responsive tertiary programme in psychology. *Aust J Indig Educ*. 2017;48(1):39-51. <https://doi.org/10.1017/jie.2017.35>.
15. Dudgeon P, Walker R. Decolonising Australian Psychology: Discourses, Strategies, and Practice. *J Soc Polit Psychol*. 2015;3(1):276-97.
16. Fish J, Ansloos J, O'Keefe V, et al. Truth and Reconciliation for Whom? Transitional Justice for Indigenous Peoples in Psychology. *PsyArXiv*. 2023. <https://doi.org/10.31234/osf.io/pcvws>.
17. Waldegrave T. Developing a more bicultural psychology: academic discourses of resistance. Massey University (Master of Arts thesis); 1996.

The Public Hospitals in New Zealand

NZMJ, 1923

The public hospital system in New Zealand has been the subject of investigation by various visitors, both lay and medical, and, on the whole has been commended, mainly, we think, for the reason that the financial stability of the hospitals is assured. This is accomplished by the simple expedient of a small sum in arithmetic whereby a sufficient rate is levied upon ratepayers to meet the immediate and ever-increasing cost of hospitals. There can be no financial deficit. The ratepayers contribute the largest share, the Government almost as much, the patients' fees commonly average fifteen to twenty per cent. of the total amount, and voluntary contributions and legacies bring up the rear. Private benevolence is a tender plant that does not flourish in the chilly atmosphere of a finance based on Government grants and local body rates. It is finance based on Government grants and local body rates. It is evident that whatever may be said about the financial edifice of the New Zealand public hospitals as regards the super-structure, the foundation is strong enough. All taxpayers, Atlas-like, carry the hospitals on their backs.

Yet our hospitals are not community hospitals like the Canadian and American hospitals. While legally our hospitals are open to rich and poor alike, the internal arrangements are such that the patients, with few exceptions, belong to the same social class that is served by the voluntary hospitals in England. No doubt tradition and sentiment are factors in producing this result, but the fact remains that the New Zealand hospitals, for which all classes pay, are a benefit almost only to the comparative poor. The New Zealand Branch of the British Medical Association is in favour of the establishment of private wards at the public hospitals to extend the usefulness of these institutions to a wider, and equally deserving, section of the public.

Since the foundation of hospitals in New Zealand the medical profession has given honorary service worth some millions of pounds, but has no share in control. There is a tendency to gradually dispense with the services of honorary staffs, and the time does not seem far off when honorary staffs will be as extinct as the moa, except in the four chief cities of the Dominion. Now the medical side of hospital work is more important than the financial side, and the medical profession

is very far from being satisfied with the public holiday system of New Zealand. It is not sufficient to say "Lo, we have not the financial troubles of voluntary hospitals; our finance is assured. Behold and Admire," when the medical staffing of the hospitals is anomalous, and the policy on which it is based is wavering and undefined. If the hospitals are mainly to be staffed with whole-time stipendiary medical officers, the standard of medical practice throughout the whole of New Zealand will be lowered. The public will be the sufferers, both in private and in hospital practice, by this lowering of professional efficiency. The medical profession does not want to provoke a crisis, for the profession throughout the whole history of public hospitals in New Zealand has never consulted its own interests or failed to subordinate its own just and reasonable claims, but it is now time to review the whole position and for the Legislature to define the relation of hospitals to the medical profession. We believe in the necessity for part-time paid visiting staffs combining private and hospital practice. In institutions, support almost entirely by public funds and making a charge of three guineas a week for maintenance, although, of course, this charge is seldom paid, it is absurd to expect the profession to continue to give honorary service.

Another reform that it is overdue is to give the medical staffs reasonable representation on the Boards of Management of the hospitals. If this had been done years ago the standard of hospital practice would have been raised, as has been accomplished in America, and, as we have already emphasized, the standard of practice outside the hospitals depends mainly on the standard of practice inside hospitals, and the public should understand this, even if the Government does not.

In conclusion, it is evident to doctors, who, it is reasonable to suppose, are experts on the hospital question, that apart from finance the hospital system of New Zealand is no system at all, but merely the result of opportunism and devoid of settled principles. How long this is to continue is entirely in the hands of the Minister of Health, and he has any other matters beside Health to attend to, and as Mr. Sastri pointed out, a politician must ask himself, not only is reform necessary but is it expedient, is it opportune, and is it popular?

Proceedings from the Te Whatu Ora – Waitematā, University of Auckland and AUT Collaborative Research Symposium 2023

Oral presentations

Changing the script: medicine optimisation recommendations made during proactive multidisciplinary meetings with older adults

K Bloomfield,^{1,2} J Hikaka,^{1,2} J Brookes,² Z Wu,² A Tatton,^{1,2} C Calvert,² M Boyd,^{1,2} K Peri,² M Connolly^{1,2}

¹*Te Whatu Ora – Waitematā*

²*The University of Auckland*

BACKGROUND

Inappropriate medications and polypharmacy have the potential to cause harm, particularly in older adults. Prescribing recommendations, such as the STOPP/START guidelines, are available to help facilitate appropriate prescribing in older adults.

AIM

We performed a randomised controlled trial (RCT) of a multidisciplinary (MD) intervention versus usual care in Te Whatu Ora Waitematā, The University of Auckland & AUT Collaborative Research Symposium 2023 Application for Poster Presentation retirement village residents in the Waitematā and Auckland area health districts, with the aim to reduce hospitalisations. Here we describe the medicine optimisation recommendations made during a MD meeting undertaken as part of the active arm of RCT.

METHODS

One hundred and seventy-three residents participated in the active RCT arm, which included a 45 minute meeting with resident (+/- support person) and older adult specialist research team (clinical pharmacist, geriatrician or nurse practitioner, and gerontology nurse specialist). Recommendations, including medicine-related and other healthcare guidance, were agreed with participants, formally written-up and provided to general practitioners and participants. Medicine-related recommendations were retrospectively reviewed to describe the number and type of (start/increase, stop/reduce) drug recommendations made at MD meetings and

alignment with STOPP/START guidelines.

RESULTS

Mean age was 81 years; 128 (74.0%) were female. One hundred and thirty-five (78.0%) participants had 310 medicine optimisation recommendations, averaging 1.8 per participant. Eighty-nine (28.7%) recommendations aligned with STOPP, 33 (10.6%) with START guidelines and 188 (60.6%) were independent of STOPP/START guidance. The most common drugs recommended to stop/reduce: statins (n=31), proton-pump inhibitors (n=20) and diuretics (n=16). The most common drugs recommended to start/increase: paracetamol (n=29), vitamin D (n=14) and topical analgesics (n=11).

DISCUSSION

An individualised, holistic approach to appropriate prescribing based on understanding patient needs and goals and supported by specialist knowledge is the likely reason that a large number of recommendations were made additional to STOPP/START guidance.

CONCLUSION

Integration of clinical pharmacists in primary care and improving communication between primary and secondary care may improve appropriate prescribing.

ACKNOWLEDGEMENTS

Funding: Ageing Well National Science Challenge, Ministry of Business, Innovation & Employment, New Zealand (Project EO-R – UOOX1901, 18450 SUB 1939) and Waitematā District Health Board.

Frailty, quality of life and resilience in a cohort of retirement village residents

K Bloomfield,^{1,2} Z Wu,² J Hikaka,^{1,2} J Brookes,² A Tatton,^{1,2} C Calvert,² M Boyd,^{1,2} D Bramley,^{1,2} M Connolly^{1,2}

¹*Te Whatu Ora – Waitematā*

²*University of Auckland*

BACKGROUND

Frailty is a syndrome characterised by increased

vulnerability to adverse outcomes including physical, cognitive and/or social decline.

AIMS

To a) design a frailty index (FI) and assess frailty prevalence in older adults residing in retirement villages (RVs) in Waitematā and Auckland areas, b) assess the impact of a previously performed randomised controlled trial (RCT) of a multidisciplinary (MD) intervention on frailty, c) analyse the relationship between frailty, quality of life (QoL) and resilience.

METHODS

The “RV study” included 578 participants with baseline interRAI data (2016–2018). In 400 at-risk residents, an RCT of MD intervention versus usual care to reduce acute hospitalisations, long-term care (LTC) admission and mortality was undertaken (2017–2019) with no effect seen. In our extension study we developed an FI from baseline interRAI data and studied its association with adverse outcomes. Repeat interRAI data was collected in 479 of the original 578 participants (2019–2020). General linear models were used to study effects of intervention on FI in subset of RCT participants. Regression analysis was used to study associations between FI and QoL/resilience.

RESULTS

Baseline mean (SD) FI was 0.16 (0.09) with 19% moderate–severely frail. Baseline FI was associated with prior and future acute hospitalisations, LTC and mortality. At follow-up, mean FI was 0.19 (0.09), 31% moderate–severely frail. There was no significant difference in FI between intervention/control arms of RCT. Follow-up FI was associated inversely with QoL and psychological resilience.

DISCUSSION

Frailty is common in RV residents and increases with time. Possible reasons for negative RCT results will be discussed. While prior studies have found association with frailty and QoL, very few have addressed the association with frailty and resilience.

CONCLUSION

Future analysis will determine personal and/or RV-level factors associated with change in frailty, thereby informing potential future interventions to improve health and wellbeing outcomes.

ACKNOWLEDGEMENTS

Funding: Ageing Well National Science Challenge, Ministry of Business, Innovation & Employment, New Zealand (Project EO-R - UOOX1901, 18450 SUB 1939), and Waitematā District Health Board.

“I don’t want to be here... let’s get out of here, let’s get moving”: older adults’ perspectives on successful rehabilitation

O Frear,² K Bloomfield,^{1,2} M Boyd,^{1,2} V Burholt²

¹Te Whatu Ora – Waitematā

²The University of Auckland

BACKGROUND

While clinicians and healthcare management likely see successful rehabilitation in terms of length of stay, discharge destination and objective clinical markers, it is unclear what older adults undergoing rehabilitation themselves see as markers of rehabilitation success. Understanding the perspectives of those engaged in rehabilitation potentially allows for greater patient-centred care and understanding of what is of value to patients.

AIMS

To investigate what successful rehabilitation means to older adults undertaking inpatient rehabilitation at Te Whatu Ora (TWO-W).

METHODS

A convenience sample of cognitively intact older adults on three inpatient rehabilitation wards at TWO-W, as identified by ward clinicians, were approached to participate. Consenting older adults undertook an individual semi-structured interview by a member of the research team exploring their thoughts on successful rehabilitation. Interviews were audio-recorded, transcribed and a general inductive analysis of emerging themes was undertaken.

RESULTS

Fourteen older adults participated: 9 women, 4 Māori, 1 Pasifika, mean age 78 years. Four themes emerged: 1) unacknowledged psychological experiences (grief, fear, uncertainty, frustration, acceptance); 2) multidimensional components of successful rehabilitation (achieving goals, individual mental attitude, trust in staff expertise, whānau/cultural/spiritual support, staff shortages); 3) communication and the importance of providing knowledge; 4) the language of rehabilitation (reflecting power structures and institutionalised knowledge about health professionals expectations).

DISCUSSION

Older people framed success around achieving a normal life with multiple factors impacting on this. Participants perceived themselves as determined and optimistic, perceiving this attitude crucial to their success. There was satisfaction with professional expertise and attention to physical health; however, many experienced psychological distress

that was not addressed and impacting on their rehabilitation.

CONCLUSION

Inpatient health psychology input, provision of timely information and adequate staffing would likely aid patient wellbeing and contribute to rehabilitation success as determined by patients.

ACKNOWLEDGEMENTS

Oliver Frear was funded by The University of Auckland summer studentship programme.

A clinicians' and patients' survey to examine PreventS-MD software usability for primary stroke prevention (PRIME)

A Bhatia,¹ J Dyer,¹ B Nair,¹ Y Ratnasabapathy,² L Skinner,² J Wan,² A Merkin,¹ R Krishnamurthi,¹ V Feigin¹

¹*Te Whatu Ora – Waitematā National Institute of Stroke and Applied Neurosciences (NISAN)*

²*Auckland University of Technology*

BACKGROUND

Stroke is a leading cause of death and long-term disability affecting all ages, ethnicities and socio-economic groups. Over the last decade, an increase in stroke incidence rates among young adults has been observed, particularly among Māori and Pacific people, in comparison to European New Zealanders. Despite the impact of strokes, many clinicians lack tools tailored for stroke prevention. With PreventS-MD software, clinicians can measure the risk of stroke and provide patient-tailored recommendations in minutes.

AIMS

We aimed to examine patients' and clinicians' impressions of the usability of the PreventS-MD software for stroke prevention and optimise the PreventS-MD software based on their feedback interview.

METHODS

The study interviewed two clinicians from stroke clinics and 10 patients from the outpatient clinic of Te Whatu Ora – Waitematā. These patients underwent stroke assessment assisted by PreventS-MD software and were provided with an assessment summary and recommendations generated from the software. Semi-structured interviews were conducted with the clinicians after assessments; and with the patients at baseline and 1 month after screening. The audio recordings were transcribed, and the data were thematically analysed using NVivo analysis.

RESULTS

The clinicians indicated a higher value for PreventS-MD in stroke prevention and the convenience of using a web-based software interface. The patients shared that the recommendations were easy to understand and resulted in 100% compliance at 1 month, including readiness towards change to a healthier lifestyle. They believed the recommendations were tailored and aimed to improve their health and lifestyle.

DISCUSSION

The software facilitated the provision of person-centred stroke prevention recommendations while saving clinicians' time. It reduced the gap between current stroke prevention knowledge and community awareness.

CONCLUSION

Clinicians and individuals at risk of stroke demonstrated high confidence and motivation in the recommendations. With this technological breakthrough, clinicians and communities can work towards preventing strokes and reducing their impact on individual lives.

Beatwise ECG classification for the detection of atrial fibrillation with deep learning

J Yang, B H Smail, P Gladding, J Zhao

Asian International Collaboration, Te Whatu Ora

BACKGROUND

Atrial fibrillation (AF) is the most common, sustained cardiac arrhythmia. Early intervention and treatment could have a much higher chance of reversing AF. An electrocardiogram (ECG) is widely used to check the heart's rhythm and electrical activity in clinics. The current manual processing of ECG and clinical classification of AF types (paroxysmal, persistent and permanent AF) is ill founded and does not truly reflect the seriousness of the disease.

AIMS

The aim of this paper is to propose a new machine learning method for beat-wise classification of ECG to estimate AF burden, which was defined by the percentage of AF beats found in the total recording time.

METHODS

We proposed a novel deep learning model to process arbitrary length of ECG, to classify each heartbeat into the following classes: Sinus Rhythm, AF, noise and others. The model consists of two deep learning networks: a 1D U-Net and a Recurrent Neural Network. These networks analyse each

heartbeat both morphologically and temporally to predict a percentage score for AF existence. The training data and labelling were obtained from patients recruited from the WDHB with the application of both a 5-lead holter monitor and a single-lead ECG patch (VivaLNK) simultaneously. The model was trained entirely on the single-lead ECG data.

RESULTS

We achieved a training accuracy score of more than 80%. F1 scores for classes sinus rhythm, AF, noise and others are found to be 0.86, 0.81, 0.79 and 0.75 respectively.

DISCUSSION

Classification of AF from ECG has conventionally been achieved through event classification, which was defined by summarising one class for an entire ECG tracing. Beat-wise classification is a better solution to assist AF burden determination.

CONCLUSION

Our model has proven the possibility and robustness of beat-wise ECG detection through deep learning, to tackle the error-prone issue found in manual analysis.

Integrating oral care into nursing practice from community home-based care to aged care residential facilities

K Oda,¹ NN Bakri,^{3,4} S Majeed,^{1,2} S Bartlett,² WM Thomson,⁴ J Parsons,¹ M Boyd,¹ A Ferguson,² M Smith²

¹The University of Auckland

²University of Otago, Wellington

³Universiti Teknologi MARA, Malaysia

⁴University of Otago

INTRODUCTION

Oral care is important for the overall health and quality of life of older adults and can reduce aspiration pneumonia occurrence. However, oral care remains a low priority for community-home based care and aged care residential (ARCs) nursing staff (registered nurses [RNs] and healthcare assistants [HCAs]) owing to a lack of knowledge, effective training and awareness of its benefits. To address this gap, a training protocol for community home-based and ARCs nursing staff in New Zealand called Nursing Oral Health care and Assessment Training (NOHAT) was co-developed by an interprofessional collaboration (IPC) we established between oral health and nursing professionals.

AIMS

To assess the effectiveness of NOHAT in facilitating nurses to deliver oral care assessment and care

planning for older adults.

METHODS

Participatory action research using pre-/post-training surveys and a focus group was employed to assess the impact of NOHAT on nursing staff knowledge, confidence and skills in oral care delivery.

RESULTS

Nursing staff significantly improved their oral health knowledge and attitude, with RNs also significantly enhancing their confidence in oral health assessment following NOHAT.

DISCUSSION

While nursing staff showed capacity to integrate oral care into routine practice, they lacked confidence to provide individualised oral care for older adults with complex needs, in particular palliative care and advanced dementia patients' oral health-care knowledge and techniques.

CONCLUSION

Our co-developed NOHAT protocol shows potential to improve older adults' oral health by upskilling nursing staff in oral health assessment and care delivery. Nevertheless, additional measures, such as onsite IPC coaching and appointment of oral care champions, are needed to fully enable nursing staff to deliver person-centred oral care for older adults, particularly those with complex needs.

What is the experience of nurses undertaking research activity whilst in paid employment within a Te Whatu Ora district?

K Tennant

Te Whatu Ora – Waitematā

BACKGROUND

Research and evidence-based practice is essential for the delivery of high-quality patient care and, as highlighted in the Waitematā DHB (WDHB) Research Strategy (2021), research is fundamental to improving the health of the community. As part of building capability and capacity of nursing research within Te Whatu Ora – Waitematā it is vital to understand how best to support nurses undertaking such research activity.

AIMS

The New Zealand Health Research Strategy (2017) highlighted that support and research education are vital to create a vibrant research environment. Therefore, the aim of this study was to explore the experiences of nurses undertaking research activity while employed in order to build

research capacity and capability of nurses through making recommendations for the development of support systems.

METHODS

This was an interpretive descriptive study. Six semi-structured interviews were undertaken with nurses who had completed research activity within the previous 5 years.

RESULTS

A number of themes were developed that help understand the experience: adult learning theory vs lack of methodological support; time management and role conflict—worker vs researcher; “little pockets of research”—isolation and a lack of academic awareness within the workplace; “it just sits on a shelf getting dusty”—need to close the loop through application and recommendations for practice; “the process grows you”—enhanced role and self.

DISCUSSION

While it is evident that nurses undertake meaningful research, there are a number of challenges that they face during the process. Nurses need to feel value in the research they do, in that it can make a difference to patient care or outcomes, and to feel valued themselves for their role as a nurse researcher.

CONCLUSION

This study will aid the development of research support and inform the broader research culture within Te Whatu Ora – Waitematā

Co-teaching: reviewing the delivery of co-taught prescribing workshops

A Lee,^{1,2} T Zhang¹

¹*Te Whatu Ora – Waitematā*

²*The University of Auckland*

BACKGROUND

Co-teaching utilises presenters from two or more professional areas to engage learners through demonstration of complimentary expertise. Co-teaching has been demonstrated to be a valid and potentially valuable pedagogy for content integration into undergraduate medical education but there is a paucity of literature exploring the use of this in postgraduate medical education.

AIMS

Our aim was to explore postgraduate Year 1 doctors' (PGY1) perceptions on co-teaching through a series of prescribing workshops run at our institution. Our workshops are co-taught by a doctor and a pharmacist or nurse specialist.

METHODS

All attendees at prescribing workshops were invited to participate in an anonymous survey regarding their views on co-teaching. Feedback was obtained and collated via an online survey tool from three workshops held in 2021.

RESULTS

Eighty-one out of 82 (98.8%) felt co-teaching was useful and 79/81 (97.5%) would like to see increased use in medical education. PGY1s perceived overall enhanced learning experiences through four domains: clinical application, knowledge retention, engagement and understanding. The majority agreed presenters explored subjects from different perspectives and contributed areas of knowledge from their respective fields. They felt the workshops showcased interactive, case-based and interprofessional learning.

DISCUSSION

We found that co-teaching was well received by PGY1 doctors who attended prescribing workshops and added value to their learning. Beyond these workshops, co-teaching has the potential to be a valid and valuable pedagogy to enhance the learning experiences amongst junior doctors, rather than being limited to undergraduate students as previously described. Smooth delivery relies on meticulous planning and preparation between two or more educators. We reflect on drivers for success and barriers to implementation of a co-taught model of education.

CONCLUSION

We have found that role-modelling learning, working and teaching together benefits all of us. This aligns with the Māori worldview: ako. Pharmacists are medication experts, and the doctors add valuable context to the teaching.

ACKNOWLEDGEMENTS

Pharmacy Department and Medical Education and Training Unit, Waitematā District.

Aphasia in Aotearoa: a codesigned project to update aphasia therapy in Aotearoa New Zealand

R Gibson,¹ C McCann,² A Barber²

¹*Te Whatu Ora – Waitematā*

²*The University of Auckland*

BACKGROUND

The significant gap between aphasia research and clinical implementation, and the impact of that on people with aphasia, is now well established. However, no research has previously investigated this area in Aotearoa New Zealand.

AIMS

To explore the experiences of speech language therapists (SLTs) and people with aphasia in Aotearoa New Zealand, and to improve the provision of aphasia therapy through a co-designed intervention.

METHODS

This doctoral research was divided into three separate studies: a questionnaire distributed to SLTs, semi-structured interviews with 16 people with aphasia and a co-designed workshop for SLTs.

RESULTS

In study one, SLTs described highlights of aphasia rehabilitation, including breakthrough moments and positive outcomes, and some of the barriers they experienced to providing aphasia therapy, including workplace limitations and access to resources and research. In study two, themes generated from interviewing people with aphasia included the importance of the therapeutic relationship, the relevance of the therapy, the availability of SLT services and access to those services. In study three, the co-designed workshop was effective in improving the SLTs' self-rated provision of aphasia therapy, with statistically significant improvement in their ability to tailor their interventions for people with aphasia, and their confidence in working with people with aphasia, in particular for Māori with aphasia.

DISCUSSION

The evidence-practice gap in aphasia appears to be greater in Aotearoa New Zealand than in other countries. This research provides key information about the impact of the evidence-practice gap on SLTs and on people with aphasia and their whānau. The resultant workshop was designed to meet the needs of SLTs and has begun to address the challenges and service gaps identified in studies one and two.

CONCLUSION

This research is an important step on the journey to ensure that all those with aphasia in Aotearoa New Zealand receive best practice aphasia therapy.

ACKNOWLEDGEMENTS

The doctoral research was funded through the New Zealand Lotteries Health Research Doctoral Scholarship.

Changes in hospital admission for stroke: findings from the ARCOS studies (1981–2022)

R Krishnamurthi, B Nair, J Dyer, A Verma, A Bhatia, E Singh Dahiya, V Parag, Y Rathnasabapathy,

D Exeter, A Ranta, S Barker-Collo, V Faegin

Te Whatu Ora – Waitematā

BACKGROUND

The Auckland Regional Community Stroke Studies (ARCOS) are population-based studies conducted in Auckland, New Zealand, every decade since 1981. The primary source of notification has been Te Whatu Ora, including Waitematā.

AIMS

We aim to evaluate the changes in hospitalisation for stroke, case fatality and mortality by the former District Health Board regions, overall and by demographic groups over the past 5 decades.

METHODS

Five ARCOS studies have been conducted (ARCOS I- 1981, ARCOS II- 1991, ARCOS II-I 2002, ARCOS IV- 2011, ARCOS V- 2021). Stroke cases were identified through multiple case ascertainment methods, including public hospitals and emergency departments. ARCOS II did not identify hospital admission details; hence this data is omitted from analysis. Deaths (28-day case fatality) were captured for all incident cases. ARCOS V data is preliminary.

RESULTS

There were 994, 1,642, 2,038 and 2,556 admissions for stroke, accounting for 73%, 85%, 97% and 96% of total strokes in ARCOS I, III, IV and V respectively. Over this time, Te Whatu Ora – Waitematā admitted 6%, 32%, 35% and 33% of stroke cases respectively. In ARCOS V, 7%, 15%, 4% and 6% of patients admitted to Auckland, Middlemore, North Shore and Waitakere hospitals respectively are Māori. In 1981, no Māori or Pacific patients were admitted to North Shore or Waitakere hospitals. North Shore had the greatest proportion (59%) of people aged 75 years or older. 28-day case fatality reduced significantly across all hospitals in the last 5 decades, (e.g., from 43% at the North Shore Hospital in 1981 to 10.2% in 2021).

DISCUSSION

The pattern of hospitalisation for stroke has shifted dramatically over the past 5 decades, as has the demographic make of stroke patients, with a greater proportion of Māori, Pacific and Asian patients admitted with stroke.

CONCLUSION

Greater hospitalisation and higher absolute numbers of strokes suggest an ongoing and increasing demand for stroke services. Case fatality may have improved over the past 5 decades, due to specialised medical care services and treatment options.

ACKNOWLEDGEMENTS

The ARCOS studies were funded by the Health Research Council of New Zealand. We acknowledge the ARCOS V Steering Committee members, Professors

Craig Anderson (PI ARCOS III), and Ruth Bonita (PI ARCOS I-II), the research assistants and Te Whatu Ora nurses and physiotherapists, and all the ARCOS patients and families.

What is the experience for migrant Kiribati women of childbirth in New Zealand?

K Carter-Lee, L Smythe, J McAra-Couper

Te Whatu Ora – Waitematā

BACKGROUND

I am a New Zealand European midwife with a caseload in which there are often 30 to 40% I-Kiribati (people of Kiribati, in the Pacific Ocean). There is anecdotal evidence of more serious complications in this immigrant group than for others in my care. Limited research exists.

AIMS

Using hermeneutic phenomenological methodology, this research seeks to uncover meaning in migrant Kiribati women's experience, to enable midwives to better understand the challenges they face as migrants.

METHODS

Guidance was sought from Kiribati advisors on how to proceed. Purposive sampling through advisors and local networks found participants; 9 Kiribati women with experience of birth in New Zealand, or experienced birth in Kiribati and supported other I-Kiribati birthing in New Zealand, and 4 midwives who had cared for I-Kiribati. Unstructured one-to-one interviews in English using indicative questions were undertaken at a location of participant's choice. Interviews included time for introductions, for questions, for chatting and to eat and drink. Interviews were recorded and transcribed by an independent professional. Data analysis was carried out via reflexive thinking, crafting stories from the transcripts and engaging in a process of reflecting, writing and re-writing according to the methodology, in collaboration with supervisors. Participants' full stories or transcripts were sent for them to keep and confirm permission to use them.

PRELIMINARY RESULTS

Tension shows. Silence speaks. Trust is created.

DISCUSSION

Tension shows from being torn between two cultures, and between New Zealand and traditional Kiribati healthcare. Silence speaks, often masking anxiety and confusion. Trust becomes the bridge between and is won by taking time, by not assuming, by listening, by getting to know the woman.

CONCLUSION

Migrant women face additional challenges through childbirth as they seek to understand the ways of their new country of residence. Midwives can play a part in making maternity care easier to access and safer for migrant clients.

ACKNOWLEDGEMENTS

Health Workforce and AUT Doctoral Grants. Self-funded.

Kaumātua insights into Indigenous Māori approaches to pain management: a qualitative study

D Bean,^{1,2} E Morunga,^{3,4} K Tuahine,² K Hohepa,⁵ G Lewis,² D Ripia,² G Terry²

¹*Te Whatu Ora – Waitematā*

²*Auckland University of Technology*

³*The University of Auckland*

⁴*Cancer Support Service, Te Toka Tumai*

⁵*Massey University, Auckland*

BACKGROUND

Chronic pain is the leading cause of disability in Aotearoa New Zealand and is more prevalent and disabling in Māori than non-Māori. Little is published about Māori views of, or approaches to, managing chronic pain/mamae. This mātauranga could be used to develop treatment approaches.

AIM

To understand kaumātua views on the effects of pain, traditional pain management practices, and mātauranga Māori relating to managing pain.

METHOD

Fourteen kaumātua participated in interviews or a focus group/hui. Interviews and the hui were transcribed, and reflexive thematic analysis was used to develop themes in the data. Findings were discussed and refined in collaboration with participants.

RESULTS

Analysis wove the kōrero of the kaumātua into three themes: 1) the multidimensional aspects of pain—pain stretched beyond the physical and encompassed emotional trauma, wairua pain, grief and hurt resulting from the loss of loved ones, contamination of the environment or breaches of tikanga. Some mamae was described as everlasting, passing between people or generations; 2) hōhonutanga—healing through connection. Healing of pain was seen to occur through strengthening connections with people, the spiritual realm, the natural world and with papakāinga, connection to place; 3) Kia maia kia kaha, being strong in the face of pain. Self-reliance to manage pain and self-determination

to make health decisions were viewed as critical. A stoical approach to pain was described, in part because complaining was seen as futile, unnecessary or weak, but also because of a desire not to burden whānau.

CONCLUSIONS

Mātauranga Māori emphasises that pain and its healing should be considered multidimensional phenomena incorporating physical, mental and relational components as well as existing in the spiritual realm and incorporating links between people, places, the past and future. Resilience and toughness in the face of such pain mean that pain can be managed by individuals with stoicism.

ACKNOWLEDGEMENTS

New Zealand Pain Society research grant; AUT internal funding

The chronic pain of chronic pancreatitis; support for a transdiagnostic approach

N Tuck,^{1,2} K Teo,³ D Bean,^{1,2} L Kuhlmann,^{4,5}
S Olesen,⁴ U Rashid,¹ A MacCormick,^{3,6}
G Srikumar,⁶ A Drewes,⁴ J Windsor³

¹*Te Whatu Ora – Waitematā*

²*Auckland University of Technology*

³*The University of Auckland*

⁴*Aalborg University Hospital, Denmark*

⁵*Randers Regional Hospital, Denmark*

⁶*Te Whatu Ora – Counties Manukau*

BACKGROUND

Approximately 60% of people with chronic pancreatitis report persistent abdominal pain. These patients tend to have poorer outcomes than those with intermittent pain, and traditional biomedical interventions are not reliably helpful. Constant pain in chronic pancreatitis may indicate the involvement of central pain mechanisms. If this is the case, then these people may have similar clinical characteristics as those with chronic primary pain, with potential implications for evidence-based treatment.

AIMS

This study compared the pain characteristics of people with chronic pancreatitis to those with chronic primary pain.

METHODS

Patients with chronic pancreatitis (n=91) and chronic pain (n=127) completed the Comprehensive Pancreatitis Assessment Tool (COMPAT), which measures pain intensity, quality of life, pain catastrophising and features of central sensitisation. Latent class regression analysis (n=192) grouped

participants based on pain characteristics.

RESULTS

Analyses identified three latent groups that mapped onto the following diagnostic categories: 1) combined chronic pancreatitis (constant pain) and chronic pain, 2) chronic pain only, and 3) chronic pancreatitis (intermittent pain) only.

DISCUSSION

Within chronic pancreatitis, patients with constant pain show similarities to some patients with chronic pain, potentially indicating shared nociplastic mechanisms. Rather than focussing on surgical and pharmacological interventions, adopting a biopsychosocial approach to pain management may be suited to this patient group.

CONCLUSION

Rather than a diagnosis-driven approach, these findings support a transdiagnostic approach to pain management based on observable features of pain (pain phenotypes) that correspond with underlying mechanisms.

Addressing the social stigma of chronic pain

N Tuck,^{1,2} A Drylan,² U Rashid,² D Bean^{1,2}

¹*Te Whatu Ora – Waitematā*

²*Auckland University of Technology*

BACKGROUND

People with chronic pain may experience stigma, for example feeling disbelieved or blamed for their pain, treated negatively in the workplace, or dismissed by healthcare providers. However, relatively little research has investigated the factors that contribute to chronic pain stigma or the effects of stigma on pain outcomes.

AIMS

The aim of this study was to determine whether opioid use, pain beliefs and mental health comorbidities influence chronic pain stigma; and also, to determine whether stigma is associated with pain, disability, depression and social support amongst people with chronic pain.

METHODS

Two hundred and fourteen people with chronic pain completed measures of stigma, pain, disability, depression, social support, medication use, mental health history and beliefs about pain.

RESULTS

40% of participants exhibited elevated levels of stigma. In line with hypotheses, three factors were associated with higher levels of stigma: use of strong opioids, a history of mental health diagnoses and

stronger endorsement of beliefs that pain is organic (rather than psychological). Further, stigma was associated with greater disability and depression and lower social support; however, stigma did not influence pain intensity itself.

DISCUSSION

Chronic pain stigma may be related to the association between pain and mental health conditions, opioid use and the lack of clear physical pathology. Stigma likely has a negative influence on the lives of people with chronic pain and could become an area of intervention. Interventions to reduce internalised stigma and improve self-esteem among people with chronic pain would be worth exploring. Additionally, strategies to alter negative societal beliefs about chronic pain should be investigated.

CONCLUSION

This study demonstrates the contributors to, and negative effects of, stigma for people with chronic pain. It presents an integrated model that could guide strategies to reduce chronic pain stigma among health professionals and the public, and reduce self-stigma among people with pain.

Pain, disability and patient satisfaction after total knee joint replacement with or without supervised group physiotherapy—a propensity score matched case control study

S Bastkjaer,¹ G Paterson,² D Rice,^{1,3} P McNair³

¹*Te Whatu Ora – Waitematā*

²*Te Whatu Ora – Te Toka Tumai Auckland*

³*Auckland University of Technology*

BACKGROUND

Typically, all patients who have a total knee joint replacement (TKJR) at Te Whatu Ora – Waitematā are referred to physiotherapy for a period of in-person post-operative rehabilitation including group-based knee class. During the recent COVID-19 pandemic, this wasn't possible, and a cohort of patients did not receive any formal, supervised post-operative rehabilitation (no knee class).

AIM

To assess pain, disability and patient satisfaction ≥ 6 months after surgery in the “no knee class” cohort compared to a historical cohort of patients who had attended knee classes and had the same outcome measures available.

METHODS

Propensity score matching was used to select patients from the historical TKJR cohort that were most similar to patients in the no knee class cohort

in terms of age, sex, BMI and number of additional pain sites. Non-parametric ANCOVAs were used to compare WOMAC pain (0–100), WOMAC disability (0–100) and patient satisfaction (1 = very dissatisfied to 5 = very satisfied), between cohorts, with time since surgery (in months) as a covariate.

RESULTS

Thirty-six patients (no knee pain class) were matched one-to-one ($n=36$) from a pool of 74 patients from the historical cohort who completed a minimum of two supervised group rehabilitation sessions (median six, range two to 10). All matching variables had standardised mean differences <0.1 and p -values >0.05 , suggesting successful balancing of potential confounding variables between groups. There were no significant differences in WOMAC pain, WOMAC disability or patient satisfaction between the two groups ≥ 6 months after surgery (all $p \geq 0.851$).

CONCLUSIONS

These findings provide preliminary evidence that failing to attend supervised in-hospital group rehabilitation classes did not adversely affect long-term outcomes after TKJR. Existing (p)rehabilitation resources may be better targeted to patients at high risk of poor outcome or who are not following expected recovery trajectories.

ACKNOWLEDGEMENTS

Ann Bennett—former Waitematā physiotherapist.

Cognitive behavioural pain management prior to total knee joint replacement: a feasibility trial

D Bean,^{1,2} J Collier,¹ D Rice,^{1,2} M Kluger,^{1,3} P McNair,¹ S Young,^{1,3} M Walker,¹ N Tuck^{1,2}

¹*Te Whatu Ora – Waitematā*

²*Auckland University of Technology*

³*The University of Auckland*

BACKGROUND

Approximately 20% of people experience persistent pain following total knee arthroplasty (TKA), and although psychological factors predict post-surgical pain, few studies have assessed whether it is possible to alter these variables prior to surgery, and if this reduces the likelihood of persistent post-surgical pain.

AIMS

To test the acceptability and feasibility of a cognitive-behavioural intervention prior to TKA, to inform a future randomised controlled trial.

METHODS

Patients on North Shore Hospital's TKA waiting lists

with elevated anxiety and high expected pain were recruited for a three-session cognitive behavioural intervention. The intervention aimed to lower pain expectations and anxiety using pain neuroscience education, relaxation skills training and goal setting. Acceptability and feasibility data were analysed alongside pre- to post-intervention scores for pain, function, catastrophising, expected pain and anxiety.

RESULTS

Of 241 people on the TKA waitlist, 65 met inclusion criteria, 43 consented to participate and 30 completed the study. Satisfaction ratings were very high, and participants found the treatment easy to understand, useful and relevant. There were significant reductions in pain catastrophising (17% change) and WOMAC pain scores (8% change). Most other changes were in the expected direction with the exception of trait anxiety, which increased. Effect sizes indicate that approximately 65 people would be needed for an adequately powered RCT.

DISCUSSION

Cognitive behavioural “prehab” targeting anxiety, expectations and catastrophising is acceptable to patients awaiting TKA. Based on effect sizes and participant engagement and feedback a multicentre RCT appears acceptable, feasible and warranted.

CONCLUSION

Psychological intervention was highly acceptable to patients awaiting TKA and may lead to reductions in pain and catastrophising. Future work will test whether changes in pain-related catastrophising contribute to better post-surgical outcomes in this group.

ACKNOWLEDGEMENTS

AUT internal start-up funding.

Pain patients' service expectations and subsequent engagement in an internet-delivered self-management intervention

D Dvorak

Te Whatu Ora – Waitematā

BACKGROUND

Since 2011, the Waitematā Pain Service routinely provides chronic pain patients participation in an empirically supported patient activation/self-management intervention based on the methods and principles of Acceptance and Commitment Therapy (ACT) for chronic pain. Since March 2020 this course, run by a single clinician, is being offered as an—also empirically supported—internet-delivered intervention. Due to its scalability and flexibility,

this digital service delivery mode has significantly improved patient access to this intervention as well as reduced costs and ecological impact per patient. Despite a seemingly good overall acceptance and service user satisfaction among course completers, a small number of patients who had explicitly agreed to participate subsequently do not engage at all.

AIMS

The aim of this qualitative project was to identify patients' provided expectations upon entering the service (via a routine intake questionnaire) as possible indicators for subsequent non-engagement despite their initial agreement to participate.

METHODS

Between August 2021 and 2022, the intake questionnaires of 238 patients enrolled in the course were qualitatively explored and encoded for their general service expectations. The main focus was on the 18 enrolled patients (7.6%) who did not engage at all.

RESULTS

Eleven patients had provided a clear expectation of being a recipient of remedial bio-medical treatments while 5 patients used euphemisms to express the same sentiment (88.9% of enrolled course non-starters).

DISCUSSION

Clearly stated, as well as euphemistically phrased, expectations of remedial interventions appear to be somewhat indicative of patients' subsequent non-engagement.

CONCLUSION

Correctly identifying patients' expectations of being the passive recipient of remedial interventions will make it possible to approach those patients with an introduction to the ACT self-management intervention that emphasises the motivational aspect in order to increase the probability of their subsequent active engagement with the course.

Associations of pre-operative inflammatory markers and post-operative outcomes in patients undergoing uni-compartmental knee arthroplasty

M L Tay,^{1,2} S M Bolam,^{2,3} S R McGlashan,² A P Monk,^{2,3} B G Matthews,² S W Young^{1,2}

¹*Te Whatu Ora – Waitematā*

²*The University of Auckland*

³*Te Whatu Ora – Auckland*

BACKGROUND

Osteoarthritis (OA) is associated with inflamma-

tion; however, there is limited understanding of the molecular mechanisms involved. Residual inflammation can also influence patient outcomes following uni-compartmental knee arthroplasty (UKA).

AIMS

This prospective, observational study aimed to: 1) characterise inflammatory profiles for medial UKA patients, and 2) investigate if inflammatory markers are associated with post-operative outcomes.

METHODS

Bloods, synovial fluid (SF), tibial plateaus and synovium were collected from medial UKA patients in 2021. Cytokine and chemokine concentrations in serum and synovial fluid (SF) were measured with multiplexed assays. Disease severity of cartilage and synovium was assessed using validated histological scores. Post-operative outcomes were measured with Oxford Knee Score (OKS), Forgotten Joint Score (FJS-12) and pain scores with 1-year follow-up.

RESULTS

The study included 35 patients. IL-5, IL-6, IL-8, MCP-1, MIP-1 β , TNF- α , VEGFA were detected in serum and SF. Increased synovitis was correlated with higher SF IL-8 ($r=0.48$), IL-10 ($r=0.41$) and MIP-1 β ($r=0.40$; all $p<0.05$). SF VEGFA was negatively correlated with pre-operative pain at rest ($r=-0.5$), and FJS-12 at 6-week ($r=0.44$), 6-months ($r=0.61$) and 1-year follow-up ($r=0.63$; all $p<0.05$). Serum and SF IL-6 were positively correlated with OKS at early follow-up (serum: 6 weeks, $r=0.39$; 6 months, $r=0.48$; 1 year, $r=0.24$; SF: 6 weeks, $r=0.35$; 6 months $r=0.16$; 1-year, $r=0.13$; all $p<0.05$). At 6 weeks, increased synovitis was negatively correlated with improvements in pain at rest ($r=-0.41$) and with mobilisation ($r=-0.37$; all $p,0.05$).

CONCLUSION

UKA patients are characterised by local and circulating IL-5, IL-6, IL-8, MCP-1, MIP-1 β , TNF- α , and VEGFA, and some degree of synovitis, which was associated with local IL-8, IL-10 and MIP-1 β . Lower levels of synovitis and higher levels of IL-6 and VEGFA were associated with better post-operative outcomes. These findings can guide further biomarker research to further characterise OA disease phenotypes and optimise patient selection for UKA.

ACKNOWLEDGEMENTS

The authors would like to thank the patients and theatre staff at North Shore and Auckland City Hospital who assisted with the sample collection, Greg Gamble for statistical advice and Satya Amirapu for assistance with histology for this study. This study was supported by a Maurice & Phyllis Paykel Trust Project Grant and a The University of Auckland School of Medicine PBRF Small Project Grant.

MLT is supported by a The University of Auckland Doctoral Scholarship.

Use of the Oxford Knee Score for identifying patients at risk of revision knee arthroplasty

M L Tay,^{1,2} A P Monk,^{2,3} C M Frampton,⁴
G J Hooper,⁴ S W Young^{1,2}

¹*Te Whatu Ora – Waitematā*

²*The University of Auckland*

³*Te Whatu Ora – Auckland*

⁴*University of Otago, Christchurch*

BACKGROUND

Self-reported outcome measures are increasingly being collected for healthcare evaluation; therefore, it is prudent to understand their associations with patient outcomes. The Oxford Knee Score (OKS) is a commonly used measure that captures patient pain and function following knee arthroplasty.

AIMS

The aims of this research were to: 1) investigate if OKS is associated with impending revision at early- and long-term follow-up, and 2) identify which of the 12 OKS question(s) were the strongest predictors of subsequent revision.

METHODS

All primary total (TKAs) and uni-compartmental knee arthroplasties (UKAs) in the New Zealand Joint Registry between 1999 and 2019 with an OKS at 6 months (TKA $n=27,708$, UKA $n=8,415$), 5 years (TKA $n=11,519$, UKA $n=3,365$) or 10 years (TKA $n=6,311$, UKA $n=1,744$) were included. Prediction models were assessed using logistic regression and receiver operating characteristic analyses.

RESULTS

For every one-unit increase in OKS, the odds of TKA and UKA revision decreased by 10% and 11% at 6 months, 10% and 12% at 5 years and 9% and 5% at 10 years. A reduced model with three questions (“overall pain”, “limping when walking”, “knee giving way”) showed better or comparable diagnostic ability than full OKS for predicting TKA and UKA revision at 6 months (area under the curve (AUC): TKA, 0.77 vs 0.76, NS; UKA 0.81 vs 0.77; $p=0.02$), 5 years (TKA, 0.78 vs 0.75, NS; 0.81 vs 0.77; $p=0.02$) and 10 years (0.76 vs 0.73, NS; 0.80 vs 0.77; NS).

DISCUSSION/CONCLUSION

The OKS had a strong negative association with risk of impending TKA and UKA revision from early- to long-term follow-up. Questions on “overall pain”, “limping when walking” and “knee giving way” were the strongest predictors of subsequent

revision. Attention to low OKS scores from these questions during follow-up may allow for prompt identification of patients most at risk of revision.

ACKNOWLEDGEMENTS

The authors would like to thank the patients registered with the New Zealand Joint Registry who consented to collection and use of their data. MLT is supported by a The University of Auckland Doctoral Scholarship.

Two weeks of low molecular weight heparin for isolated symptomatic distal vein thrombosis (TWISTER study)

E Merriman,¹ S Chunilal,² T Brighton,³ V Chen,⁴ McRae,⁵ Ockelford,⁶ Curnow,⁷ H Tran,⁸ B Chong,⁹ M Smith,¹⁰ G Royle,¹¹ H Crowther,¹² A Slocombe,¹³ H Tran^{2,14,15}

¹*Te Whatu Ora – Waitematā*

²*Monash Medical Centre, Melbourne*

³*New South Wales Health Pathology*

⁴*Concord Hospital*

⁵*Royal Adelaide Hospital*

⁶*Te Whatu Ora – Auckland*

⁷*Westmead Hospital, New South Wales*

⁸*Frankston Hospital, Victoria*

⁹*St George's Hospital, New South Wales*

¹⁰*Te Whatu Ora – Christchurch*

¹¹*Te Whatu Ora – Counties Manukau*

¹²*Blacktown Hospital, New South Wales*

¹³*Box Hill Hospital, Victoria*

¹⁴*The Alfred Hospital, Melbourne*

¹⁵*Australian Centre for Blood Diseases, Melbourne*

BACKGROUND

Treatment of low-risk patients with isolated symptomatic distal deep vein thrombi (IDDVT) is uncertain.

AIMS

Objective: assess whether 2 weeks of therapeutic anticoagulation is efficacious/safe for IDDVT. Primary outcome: symptomatic 3-month venous thromboembolism (VTE) incidence in the 2-week anticoagulation group. Secondary outcomes included post-thrombotic syndrome (PTS) and bleeding.

METHODS

Prospective multi-centre cohort study. Consecutive low-risk IDDVT patients enrolled within 72 hours of diagnosis and treated with therapeutic dose enoxaparin or rivaroxaban. At 2 weeks, patients had repeat complete whole leg compression ultrasound (CUS)/clinical review. If resolution of leg symptoms AND no radiological evidence of thrombus extension, anticoagulation was stopped.

If ongoing symptoms and/or radiographic extension within distal veins, anticoagulation was continued for 4 more weeks. Patients with extension into the popliteal vein on 2-week ultrasound were treated off-study. Patients were reviewed at 3 and 6 months.

RESULTS

Two hundred and forty-one eligible patients received ≥ 2 weeks' anticoagulation. One hundred and sixty-seven out of 241 (69%) were assigned to the 2-week anticoagulation group; 71/241 (30%) to the 6-week anticoagulation group; 3/241 patients (1%) had extension into the popliteal vein on 2-week CUS. Two patients in the 2-week anticoagulation group had symptomatic IDDVT recurrence in ≤ 3 months; VTE recurrence 2/156; 1.3% (95% CI 0.05–4.85%). 69% of patients had complete resolution of symptoms within 2 weeks. Six-month PTS rates were 8/184, 4.4% (95% CI 2.1–8.5%). No major bleeding was reported.

DISCUSSION

We've demonstrated that the majority (69%) of low-risk IDDVT patients can be treated with 2 weeks of anticoagulation with resultant symptom resolution, no proximal DVT/PE and a low rate of VTE recurrence (2/156 or 1.3%; 95% CI 0.05–4.85%).

CONCLUSION

Our findings suggest it's safe/efficacious to stop therapeutic anticoagulation at 2 weeks in low-risk IDDVT patients with resolution of symptoms/no extension on ultrasound. This could replace 6–12 weeks of anticoagulation for ambulatory, low-risk IDDVT patients.

ACKNOWLEDGEMENTS

I would like to thank everyone who has contributed to this study, in particular my PhD supervisors, Dr Huyen Tran and Dr Sanjeev Chunilal, and the recently deceased Dr Mark Smith, who was my mentor when working as a haematology advanced trainee at Christchurch Hospital, New Zealand. I would also like to thank the members of the Data Safety Monitoring Board (Dr Rob Fitridge, Dr Pete Wood and Dr Louise Phillips), the Event Adjudicators (Dr Harry Gibbs, Dr Denise Roach and Dr Peter Blombery) and statistician (Hamish Neave) for their contributions.

The DIAMOND trial—Different Approaches to MOderate and late preterm Nutrition: Determinants of feed tolerance, body

T Alexander, S Asadi, J Harding, M Meyer, Y Jiang, M Muelbert, C Wall, J M Alswailer, F Bloomfield

Te Whatu Ora – Waitematā

BACKGROUND

Optimal nutritional management strategies are unknown for moderate-to-late-preterm (MLPT) babies pending full enteral feeds with mother's own milk.

AIMS

To investigate the impact of different feeding strategies on feed tolerance and body composition in MLPT babies.

METHODS

Multi-centre, factorial, randomised trial in babies born 32+0–35+6 weeks' gestation with intravenous access whose mothers intended to breastfeed. Babies were randomised to combinations of three factors: 1) intravenous (IV) amino acid solution vs IV dextrose until full milk feeds established; 2) milk supplement vs exclusive mother's own milk (MOM); and 3) taste/smell given or not given before gastric tube feeds. The primary outcome for factors 1 and 2 was fat mass (%) at 4 months' corrected age, and for factor 3, time to full enteral feeds (150ml.kg⁻¹ day⁻¹ or exclusive breastfeeding).

RESULTS

Five hundred and thirty-two (55% boys) babies were recruited. Percentage fat mass at 4 months' corrected age (n=324) was not different between babies given IV amino acids or dextrose (factor 1) (mean [standard deviation, SD] 26.0[5.4] vs 26.2[5.2] %, p=0.7) or between babies given milk supplement vs MOM (factor 2) (26.3[5.3] vs 25.8[5.4] %, p=0.3). Time to full enteral feeds (n=526) was not different between babies exposed or not exposed to taste/smell [mean (SD) 5.8(1.5) vs 5.7(1.9) days, p=0.6]. There also was no difference in the time to full enteral feeds for factor 1 (5.7[1.7] vs 5.8[1.8] days, p=0.6) or factor 2 (5.7[1.7] vs 5.8[1.7] days, p=0.1). Time to discharge home was similar between groups (overall 24.8[11.4]).

DISCUSSION

Provision of parenteral nutrition or formula in addition to MOM does not affect body composition at 4 months' corrected age. Early nutritional support strategies do not affect time to full enteral feeds or days in hospital.

CONCLUSION

Providing breastmilk only should be the goal for the nutritional management of MLPT babies.

ACKNOWLEDGEMENTS

DIAMOND study group, AUT and Massey University provided access to equipment, HRC and Counties Manukau Health funded the study.

Patients' understanding of risk—a survey of probability literacy

R Newcombe,¹ G Armstrong,¹ T Wijnjohn,² J Reynolds,¹ S El Jack¹

¹*Te Whatu Ora – Waitematā*

²*The University of Auckland*

BACKGROUND

The central concept of informed consent is communication of the chance of a successful outcome. It is not easy or intuitive to map a population-derived risk estimate to our self as an individual.

AIMS

The aim of this study was to test patient's comprehension of basic probability concepts needed for informed consent.

METHODS

Patients (n=478) completed 5 questions testing risk estimates relevant to informed consent. The questions posed non-medical scenarios, to avoid patients associating them with their clinical care.

RESULTS

Correct answers varied from 36% for Q3 to 83% for Q5. Sixty-four percent of patients could not say that 1:10 is a higher frequency than 1:100 or 1:1,000. Age and ethnicity were independent predictors of overall score, whereas sex and socio-economic decile were not. Māori/Pasifika scored significantly worse than Pakeha/European (total score 3.2 vs 3.6, patients' socio-economic decile was the highest of all groups. This may have been a language issue.

DISCUSSION

Many patients do not grasp risk sufficiently to understand informed consent. Increased comprehension may be achieved by a combination of written documents and unhurried verbal explanations, with time for questions. Risk presented as "2 in a 1,000 chance of a serious complication" may be better comprehended if spelt out in full to patients as: "out of every 1,000 patients undergoing this procedure, around 2 may experience a serious complication". Communication should be culturally appropriate and in the language preferred by the patient.

CONCLUSION

This project has highlighted the need to ensure the information given, in particular about risks, is tailored to the needs of ethnic groups particularly focussing on Māori tikanga practice and appropriate language.

ACKNOWLEDGEMENTS

North Shore Hospital, Lakeview Cardiology Department; Waitakere Hospital, Huia Ward.

Safety of topical lidocaine in awake in-office laryngology procedures

J Allen,^{1,2} J Lim¹

¹*Te Whatu Ora – Waitematā*

²*The University of Auckland*

³*Auckland ENT Group*

BACKGROUND

Local anaesthetic-mediated office-based laryngology procedures have increased due to improvements in technology, improved safety and speed of procedures and reduced expense. Typically, topical lidocaine is utilised with good effect; however, the rate and volume of transmucosal absorption of lidocaine is not known. Given high serum concentrations of lidocaine can result in serious toxicities, we sought to quantify serum levels of lidocaine following administration via the nasal and pharyngeal routes, to ensure safety and provide guidelines for transmucosal use.

AIMS

1) Obtain serum lidocaine concentrations following topical administration to the laryngopharynx to evaluate absorption rate and peak serum levels, and 2) establish that currently used topical doses of lidocaine result in serum levels that are within safe ranges.

METHODS

A prospective case cohort study of 50 subjects undergoing awake laryngopharyngeal procedures under local anaesthesia was conducted. A combination of 2% lidocaine gel, topical nebulised 4% lidocaine and cophenylcaine sprays were used in the nose and oral cavity to provide anaesthesia. Exact lidocaine dose administration was recorded and correlated with blood serum levels taken at specific time points (5, 15, 30, 45 and 60 minutes) following lidocaine administration.

RESULTS

Serum lidocaine concentrations following topical administration for awake laryngopharyngeal procedures fall well below the toxic levels. All results were below 1.8mcg/mL. However, time to reach peak plasma concentration is longer than expected at 50–60 minutes. No serious lidocaine-related adverse events were found during observed procedures.

CONCLUSION

This study demonstrates feasibility of topical lidocaine for awake laryngopharyngeal procedures and that absorbed dose and serum levels remain well below toxic levels. Clinicians performing such procedures should be aware of the risk of lidocaine toxicity and mindful of current dosing volumes, and note longer time to peak concentration.

New Zealand Pacific parents' perspectives on skin-to-skin with their preterm infants on a neonatal unit

C Taylor

Te Whatu Ora – Waitematā

University of Otago

BACKGROUND

Prematurity is the leading cause of death in children under 5 years of age worldwide. Infants who survive this period have greater risk of neurodevelopmental impairments than their full-term peers. Skin-to-skin is an intervention during the neonatal period that improves physiological stability, decreases infant mortality and morbidity and improves neurobehavioral and psychosocial outcomes. Within New Zealand, the infant death rate is highest among Pacific infants born less than 28 weeks gestation, warranting further investigation into all aspects of care for this population.

AIMS

The purpose of this study was to explore Pacific parents' lived experiences of skin-to-skin with their preterm infants while in New Zealand-based neonatal units to inform culturally responsive care and service delivery.

METHODS

Interpretive phenomenological analysis informed by talanoa research methodology was used to guide this qualitative study. Recruitment and data collection took place between November 2020 and July 2021 in the neonatal units across Auckland. Interviews took place with Pacific parents of preterm infants born less than 33 weeks.

RESULTS

Data analysis identified five superordinate themes and 13 subordinate themes. This included “overcoming fear and anxiety”, “connection”, “words matter”, “actively managing racial bias” and “spirituality and religious beliefs facilitates resilience”. Skin-to-skin promoted connection and strengthened all four pou of the Fonofale model. Communication styles of individual nurses greatly influenced the vā (relational space) experienced by families, which subsequently affected their experience of skin-to-skin.

CONCLUSION

Findings indicate the need for Pacific cultural competence training in order to provide culturally safe care when supporting an intervention like skin-to-skin. Intentionally encouraging and facilitating Pacific parents' spirituality within the newborn intensive care unit (NICU) is another key strategy to optimise skin-to-skin. Within the stressful NICU

environment, supporting nurses in their communication and actions when facilitating skin-to-skin has the potential to affect the initiation, uptake and experience of skin-to-skin.

ACKNOWLEDGMENTS

Te Whatu Ora – Waitematā; PDF funding Otago University; supervisors Dr Fiona Graham and Dr Dawn Elder; cultural supervisor Anveli Brown Purcell.

What caregivers say about sleep systems for children with complex neurodisability

J Hamer

*Te Whatu Ora – Waitematā
University of Otago*

BACKGROUND

Children with complex neurodisability typically experience limited mobility, hip displacement, scoliosis, and contractures which impact on pain, sleep and functional aspects of everyday life for children and families. While 24-hour postural management is recommended to moderate these negative effects, adherence is variable, with limited research into caregiver's experience.

AIMS

Develop understanding of caregivers' experience of implementing sleep systems for children with complex neurodisability to help inform clinical practice and improve care.

METHODS

Interpretive descriptive methodology guided this study. Recruitment occurred within the Auckland metro area, with data collection between July 2020 and March 2021, with interviews of nine caregivers. Data were analysed with themes developed.

RESULTS

Theme one, "It's a complex night", addressed the night-time health challenges caregivers experienced that impacted their ability to implement sleep systems. Theme two, "This is what I know", with subthemes "What I know about my child" and "What I know about sleep systems" addressed caregivers' knowledge and beliefs of sleep systems regarding purpose, comfort and future prevention of problems. Theme three, "Support me to support my child", identified the therapeutic relationship as critical to successful implementation of sleep systems.

DISCUSSION

Multiple factors contribute to night-time complexity, with caregivers prioritising their child's

sleep, health and comfort needs. Findings suggest that current sleep-system intervention does not fully account for this complexity, resulting in support that does not meet their beliefs, priorities and needs. Findings indicate therapeutic relationships were central to their experience, with timely ongoing support and open non-judgmental communication critical to developing desired collaborative therapeutic partnerships. Family-centred care principles guide care; however, findings suggest these principles are not fully integrated within current practice.

CONCLUSION

This study provides insight into caregivers' experience of implementing sleep systems, identifying barriers and challenges, with strategies to improve implementation and engagement. Co-design work with families and clinicians are recommended as next steps.

ACKNOWLEDGEMENTS

Professional Development Fund, Waitematā District Health Board.

Factors that influence nurses' attitudes towards working with older adults: a qualitative descriptive study

S Fisher,¹ S Rasmussen²

¹*Te Whatu Ora – Waitematā Nursing*

²*Auckland University of Technology
– Department of Nursing*

BACKGROUND

In line with global trends, the population in New Zealand is ageing with approximately 20% to be aged 65 years and older by the late 2020s. To meet their needs, there will need to be an increased number of nurses who specialise in the care of older adults. The concern is that not enough nursing graduates are choosing to specialise in gerontology, resulting in a nursing workforce that may be challenged to meet increasing future demands of older adults within the healthcare system.

AIMS

The purpose of this study is to ascertain the factors that influence new graduate nurses in New Zealand when making choices to work with older adults.

METHODS

Using a qualitative descriptive methodology, eight participants were interviewed; four student nurses from Auckland nursing schools and four experienced RNs from a regional Auckland hospital.

RESULTS

Two main themes emerged from the data: pre-

existing factors (sub-themes—previous experiences with older adults, ageism and older adults as other), and the second is specific factors related to nursing education (sub-themes—undergraduate clinical placements, visibility of older adults, perceptions of less skill required).

DISCUSSION

The findings of this research have implications for how specialist knowledge around nursing older adults is delivered at undergraduate level. It is hoped the recommendations could lead to a beneficial impact on how student nurses understand and perceive the complexity of nursing older adults, increasing the numbers choosing this area of nursing as a practice destination.

CONCLUSION

Understanding the factors influencing nurses' likeliness to choose working with older adults may help Te Whatu Ora – Waitematā better meet the workforce requirements to meet the healthcare needs of this population. Working collaboratively with tertiary education providers can help shape students' perceptions and support equitable health outcomes for older adults.

ACKNOWLEDGEMENTS

We are grateful to the study participants who shared so generously and to Te Whatu Ora – Waitematā colleagues for supporting Sharon in completing this Masters research.

Posters

Systematic review of the efficacy and purpose of student surgical interest groups

V Murphy, J Koea, P Chao, S Srinivasa

Te Whatu Ora – Waitematā

BACKGROUND

Medical termination of pregnancy (MTO) is routinely performed at North Shore Hospital. MTO in second trimester is associated with high rates of retained products of conception (RPOC) up to 30.8%.

Based on expert opinion, there appears to be a significant number of RPOC with the current protocol at North Shore Hospital. Given the burden of this complication on patients and medical services, proper study is needed to quantify this.

AIMS

To identify the incidence of RPOC and its contributing factors in patients who underwent MTO between 13–20 weeks of gestation in the Hine Ora ward from January–December 2020.

METHODS

Retrospective case series study on all patients admitted to North Shore Hospital for MTO between 13–20 weeks of gestation in time period of January–December 2020. Twenty-six patients met the study protocol. All study data were analysed using SPSS v22.

RESULTS

Mean age of patients was 32.8 with a mean gestational age of 16.3. Most common ethnicities were Pākehā (34.3%), other European (30.8%) and Māori (7.7%). Main reason for MTO was foetal anomalies (84.6%).

On most recent maternity ultrasound, all foeti had heartbeat and their mean crown rump length (CRL) was 58.3mm.

In 17 patients (65.4%), the procedure went without any complications. A total of eight patients (30.8%) ended up with a clinically significant RPOC.

There was no statistically significant relationship between failure of second trimester MTO and age, BMI, ethnicity, gestational age, CRL or previous maternity history.

DISCUSSION

Incidence of RPOC post second trimester MTO at North Shore Hospital is comparable with the available literature. Unlike previous literature, we could not find any relationship between incidence of RPOC with foetomaternal characteristics. This could be because of small sample size of this study.

CONCLUSION

Current local guidelines for second trimester MTO is resulting in acceptable incidence of RPOC.

Feasibility and acceptability of telehealth and contactless delivery of human papillomavirus (HPV) self-testing for cervical screening with Māori and Pacific women in a COVID-19 outbreak in Aotearoa New Zealand

K Bartholomew,^{1,2} J Grant,^{1,2} A Maxwell,^{1,2} C Bromhead,⁶ F Gillett,^{1,2} R Saraf,^{1,2} K Moodabe,⁷ S M Sherman,⁸ G McPherson,² D Flower,¹ J Kathuria,³ S Crengle,⁹ R Massey,¹⁰ N Scott,^{4,5} P Coote¹¹

¹*Te Whatu Ora – Te Toka Tumai, Auckland*

²*Te Whatu Ora – Waitematā*

³*Te Whatu Ora – Counties Manakau*

⁴*Te Whatu Ora – Waikato*

⁵*The University of Auckland*

⁶*Massey University*

⁷*Total Healthcare*

⁸*Keele University*

⁹*University of Otago*

¹⁰Pathlab¹¹AwahiMai Consultancy**BACKGROUND**

There are persistent inequities in cervical screening coverage, worsened during the COVID-19 lockdowns. Self-collected human papilloma virus (HPV) samples can facilitate continued screening during care disruptions and can also be used to accelerate catch-up screening as we move out of pandemic-related crisis care.

AIMS

To determine the feasibility and acceptability of an offer of a telehealth and contactless delivery of HPV self-test for cervical screening during a COVID-19 outbreak.

METHODS

During the August 2021 COVID-19 outbreak and associated Alert Level 4 lockdown in metro Auckland, never screened, due or overdue Māori and Pacific women aged 30–69 years enrolled in a Tamaki Health clinic were invited by text message to have an HPV self-test. Study invitation, active follow-up, nurse-led discussions, result notification and post-test questionnaire were all delivered through telehealth with contactless delivery.

RESULTS

From the primary care enrolment lists, 197 eligible Māori and Pacific women were invited to take part. We were able to contact 86 women, of whom 66 agreed to take part (35 from initial text and 31 after a round of active follow-up). Five were subsequently found to be ineligible. Overall uptake was 61 samples returned (31.8%) and uptake of all contactable women was 70.9%. Six of the 61 HPV self-tests (9.8%) were positive.

DISCUSSION

COVID-19 has impacted on the delivery of preventative healthcare, particularly face-to-face activity such as primary care and screening. This study provides further policy-relevant information on the utility of a telehealth and mail-out model (courier, contactless) for the National Screening Unit as it moves to change to primary HPV testing (including self-testing) this year.

CONCLUSION

The offer of HPV self-testing during COVID-19 lockdown was feasible and acceptable for Māori and Pacific women. HPV self-testing via telehealth and mail-out, alongside other options, offers a potential pro-equity approach for addressing inequitable participation and deferred screens.

ACKNOWLEDGEMENTS

This proof-of-concept study was funded by the previous Auckland, Waitematā and Counties Manukau

District Health Boards and by Total Healthcare PHO (Tamaki Health).

Systemic lupus erythematosus (SLE) Te Whatu Ora – Waitematā patients in Auckland: epidemiology and attainment of Lupus Low Disease Activity State (LLDAS)

N Prashar,¹ S Austin,² K Ng²

¹Te Whatu Ora – Counties Manukau

²Te Whatu Ora – Auckland

BACKGROUND

There is significant lack of lupus research in New Zealand. The Asia Pacific Lupus Collaboration (APLC) is an international collaboration of lupus experts. New Zealand became a member of the APLC in 2018. Te Whatu Ora – Waitematā (TWOW) is the lead site for the APLC treat-to-target (T2T) Lupus Low Disease Activity State (LLDAS) prospective study.

AIMS

To assess epidemiology, LLDAS attainment, lupus damage index and clinical characteristics in lupus patients from the TWOW APLC Auckland cohort.

METHODS

All patients who fulfilled either the American College of Rheumatology (ACR) or Systemic Lupus International Collaborating Clinics (SLICC) criteria were invited to participate in the study. At each study visit (3 to 6 monthly), patients are assessed for flares using SLEDAI-2K. Information on clinical manifestations, medication use and laboratory data is collected.

RESULTS

Sixty-two patients were recruited during 2018–2020. The incidence of SLE in TWOW is 5.72 per 100,000. The ethnic breakdown was Asian (n=27, 44%), European (n=25, 40%), Pacific Island (PI) (n=5, 8%) and Māori (n=3, 5%). Arthritis was the most common clinical feature (n=51, 82%), followed by photosensitivity (n=31, 50%). Fourteen patients (23%) had renal disease. In terms of medications used, 35 patients (56%) had used prednisone at some point with the majority of patients (n= 52, 84%) on hydroxychloroquine. LLDAS attainment at any time point was achieved in 56 patients (90%). About 1/3 of patients flared at least once during study (n=24, 39%). Six patients (9.6%) had a severe lupus flare. The average SLICC-ACR Damage Index was 0.22 (range 0–47).

CONCLUSION

This is the first New Zealand prospective study

on TWOW lupus patients. The majority of patients were able to achieve LLDAS, a clinical state associated with better outcomes. Corticosteroid use occurred in more than half of the cohort indicating the lack of effective lupus therapeutics.

Vancomycin use for haemodialysis patients—development of a new dosing protocol

E Ho, S Gleeson, S Roberts, K Bondesio, A Salmon

Te Whatu Ora – Waitematā

BACKGROUND

Summary at a glance: Vancomycin is commonly used in haemodialysis patients, but it is readily cleared by high-flux dialyzers. We developed a novel dosing and monitoring protocol for the use of vancomycin on haemodialysis. Following its implementation, there was an improvement in therapeutic levels with fewer doses being withheld.

AIM

To develop a dosing and monitoring protocol to achieve therapeutic vancomycin levels on intermittent haemodialysis.

METHODS

We identified 15 vancomycin treatment courses received by patients on intermittent haemodialysis in Waitematā District in Auckland, New Zealand. Demographic, biochemical and clinical parameters were gathered from their health records. We subsequently devised and implemented a new vancomycin protocol consisting of weight-based loading dose, and subsequent dose titration according to same-day measured pre-dialysis levels. We then re-audited 16 vancomycin treatment courses to assess the performance of the protocol.

RESULTS

A significantly higher proportion of vancomycin levels were within the target range (15–20 mg/L) following the implementation of protocol, from 23% to 46% ($p < .005$). Additionally, a greater proportion of treatment courses had >50% of pre dialysis levels within the target range, rising from 13% to 56% ($p < .01$). In the pre-protocol group, 19 out of 117 doses of vancomycin were withheld during treatment, compared to 1 out of 118 doses in the post-protocol group. A total of 62% of total maintenance doses were administered in adherence to protocol. Length of hospital stay and number of positive blood cultures while on treatment were reduced.

CONCLUSIONS

Our initial audit revealed deficiencies in our clin-

ical practice in the absence of a local vancomycin protocol for patients receiving intermittent haemodialysis. Following the implementation of our novel protocol, there was an improvement in therapeutic levels and fewer doses were withheld. Our sample size was too small to allow for interpretation of clinical outcome data.

Quality Performance Indicators compliance for the surgical treatment of gastric cancer at North Shore Hospital

Y Wang, S Kulasegaran, S Srinivasa,

J Koea, A MacCormick

Te Whatu Ora – Waitematā

BACKGROUND

This is the first retrospective study of its kind undertaken in New Zealand to investigate the adherence rate of Quality Performance Indicators of gastric adenocarcinoma (GA) management and its barriers. This is in keeping with the recent focus on the importance of Quality Performance Indicators (QPIs) in surgical care: these are objective measurements used to highlight elements of patient care that perform strongly and poorly.

AIMS

Primary aim was to establish the achievement rate of the selected QPIs. The secondary aims were to identify areas of GA care requiring improvement and to comment on potential barriers, as well as to document the change in treatment practice by including both historic and recent data.

METHODS

All patients with gastric adenocarcinoma treated at North Shore Hospital between 1 January 2010 and 31 December 2015 were included. Electronic data in the form of clinic letters, operation notes, and histology and radiology reports were reviewed with ethics approval. Adherence rate was collected in binary form.

RESULTS

A total of 125 patients were included; 61 patients (48.8%) received operative management. Almost 40% were diagnosed with Stage 4 GA at time of referral. QPIs with high compliance rate include pre-operative radiological staging and histological diagnosis, subspecialty surgeon training and pathology report documentation. Those with low compliance include perioperative chemotherapy (32.7%), post-operative radiological surveillance (32.5%) and minimally invasive approaches to surgical resection (12.5%).

DISCUSSION

QPIs could be the foundation to establish treatment pathway for all newly diagnosed GA such as ERAS protocols. We look at individual QPIs that could be improved and assess reasons for poor rates.

CONCLUSION

Indicators are variably implemented in clinical practice. With this established baseline, we hope to achieve a standardised perioperative protocol for GA care at our locale and to investigate its implementation with mortality rate.

Selective use of radiological staging in node-positive Stage II breast cancer patients may have a role in treatment

C Leem, Y Wang, J Kirkpatrick, E Juhasz

Te Whatu Ora Health New Zealand – Waitematā

BACKGROUND

Advanced staging radiography is used inconsistently for early stage (Stage I + II) breast cancer (Bca) patients. However, accurate and appropriate staging of newly diagnosed Bca may significantly impact on treatment decisions.

AIMS

Our primary aim is to determine the proportion of node-positive Stage II Bca patients who have distant metastases at initial evaluation prior to treatment. Our secondary aim was to evaluate the radiological staging pattern across Bca patients at North Shore Hospital.

METHODS

Four hundred and ninety-nine Stage II and III Bca patients who were seen in the breast service at North Shore Hospital from 2013 to 2018 were enrolled in the study and audited for radiological staging.

RESULTS

One hundred and two Stage II patients had computed tomography (CT) at baseline. Eighty-eight of 102 (86%) of Stage II patients were node positive ($\geq N1$); 6 patients (6.8%) had distant metastatic disease and were upstaged to stage IV. Fifty-two Stage III patients out of 72 (72%) had baseline staging CTs. Nine out of 52 patients (17%) of Stage III patients were upstaged to Stage IV. Despite guideline recommendations, baseline staging for T4 disease (Stage IIIB) was poor, with only 7 out of 13 patients with Stage IIIB disease radiologically staged.

DISCUSSION

Our result shows a higher rate of distant metastasis detection in node-positive patients. This corresponds to the hypothesis metastases from Bca

may transit through regional lymph nodes first. The modality of baseline staging is open for further discussion; however, CT staging has been the most frequent choice at our locale.

CONCLUSION

Consideration for baseline radiological staging should be given to Stage II and III cN1 Bca patients, in whom diagnosis of distant metastatic disease would change the treatment plan. Regional guidelines for baseline radiological staging for Bca patients may have an impact on patient management in Bca patients.

Cancer screening services: what do Indigenous communities want? A systematic review.

E Han,¹ S Srinivasa,^{1,2} J Gurney,³ J Koea^{1,2}

¹*Te Whatu Ora – Waitematā*

²*The University of Auckland*

³*University of Otago*

BACKGROUND

Indigenous communities experience worse cancer outcomes compared to the general population partly due to lower cancer screening access. “One size fits all” screening programmes are unsuitable for reaching Indigenous communities.

AIMS

In this review we summarise available evidence on the perspectives of these communities with a view to informing the improvement of cancer screening services to achieve equitable access.

METHODS

We undertook a systematic review according to the PRISMA guidelines, using the databases MEDLINE, Scopus, PubMed and Google Scholar. The search terms used were: “*indigenous community or indigenous communities*”, “*cancer screening*”, and “*facilitators, enablers, desires, or needs*”. Qualitative studies published up to 30 August 2022 investigating the perspectives of Indigenous communities on factors encouraging screening participation were included into the study. The included studies were reviewed and analysed inductively by two independent reviewers, and key themes regarding Indigenous access to cancer screening were then extracted.

RESULTS

A total of 204 unique articles were identified from the search. The title and abstracts of these studies were screened, and 164 were excluded based on the exclusion and inclusion criteria. The full texts of the remaining 40 studies were examined and 18 were included in the review. Four key themes were iden-

tified pertaining to culturally tailored education and information dissemination, community involvement, positive relationships with healthcare providers and individual empowerment and autonomy.

DISCUSSION

Current cancer screening programmes have failed to provide equitable screening access for Indigenous communities worldwide. Interventions aimed at addressing the four themes identified from this review, as expressed by Indigenous communities, should be considered to improve cancer screening for Indigenous communities.

CONCLUSION

Improvements, based on the key themes identified from this review, must be made at all levels of the healthcare system to achieve equitable screening participation in Indigenous communities.

Risk and protective factors of self-harm and suicidality in adolescents—an umbrella review

R Richardson,¹ T Connell,¹ M Foster,¹ J Blamires,¹ S Keshoor,¹ C Moir,² I SL Zeng¹

¹Auckland University of Technology

²University of Otago

BACKGROUND

Suicide remains the second most common cause of death in young people aged 10–24 years and is a growing concern globally. The literature reports a vast number of factors that can predispose an adolescent to suicidality at an individual, relational, community or societal level. There is limited high-level research in identifying and understanding these risk and protective factors of suicidality in adolescents.

AIMS

To use a systematic method to synthesise recent review literature on adolescent mental health outcomes (self-harm and suicidality) and their risk and protective factors.

METHODS

An umbrella review method and meta-analysis was used to synthesise evidence from the literature in the past 20 years on risk and protective factors of self-harm and suicidal attempts in adolescents. It derived the population attributable fraction (PAF) of the identified exposure based on the data synthesis.

RESULTS

Bullying victimisation was the most attributed environmental exposure with PAF 22.16% for suicide ideation and 31.12% for suicide attempts; the pooled odds ratio for suicide attempt was 3.0 (95%

C.I. 2.58–3.53, <.0001). The other significant school and individual factors were sleeping disturbance, school absenteeism and exposure to antidepressants. Several major vulnerable young populations were identified with significant higher prevalence of suicide attempts and ideation, including LGBT youth and those with mental health disorders, problem behaviours, previous suicidality, self-harm and gender (female).

DISCUSSION

Health professionals working in population health, school settings and community mental health should consider these risk factors when assessing and treating vulnerable young people. A person-centred approach with an emphasis on connectiveness and bully-free school environments should be a priority focus for schools, health professionals and public health policy makers.

CONCLUSION

To reduce the suicide behaviour and ideation in adolescents and youth, it is vital to create bully-free environments, eradicate school-related exposures and provide protective interventions within schools.

ACKNOWLEDGEMENTS

AUT Faculty of Health and Environmental Science, Research Office 2023 Summer Scholarship Fund.

Designing a spiral curriculum—navigating inter-professional prescribing education

A Lee,^{1,2} TC Kuo,¹ L Gray,^{1,2} K Turner,² H Nakano²

¹Te Whatu Ora – Waitematā

²The University of Auckland, School of Medicine

BACKGROUND

The Equip study (UK) highlighted that most prescribing errors occurred among first (postgraduate Year 1 [PGY1]) and second year (postgraduate Year 2 [PGY2]) doctors. Our prescribing program at Waitematā District is built on recommendations from this study and our own research. Waitematā has developed an inter-professional workplace education programme supporting safe prescribing through inter-professional scholarship, programme development and collaboration between medicine, pharmacy and nursing. This has helped design a “fit for purpose” spiral curriculum with experience specific objectives. The programme pipeline is contextualised to the level of experience of the learner across 5 years of training: 3 undergraduate years of clinical students learning about medication histories and safe prescribing, to PGY2 doctors learning

about subspecialised medication safety.

AIMS

To measure the impact of the final undergraduate year as participants undertake the challenging transition from student to clinician (PGY1).

METHODS

All PGY1 doctors that were former students at Waitematā in 2021 were invited to participate in an anonymous retrospective self-reported survey. Participants graded each statement on a 4-point Likert scale from strongly disagree to strongly agree.

RESULTS

One hundred percent (n=22) found the prescribing workshops helpful in preparing for PGY1, boosting confidence for prescribing. Thirteen point six percent (3) did not feel confident using protocols and 4.5% (1) did not enjoy the workshops. Ninety-five percent agreed that working with pharmacists in the workshops improved their working relationship with them.

DISCUSSION

It is challenging to measure any meaningful impact of the programme. We do not have a consistent cohort as learners move across hospital sites and districts during this 5-year period. This attempt was aimed at readiness for practice, prescribing confidence and perception of pharmacists. Near peer teaching, role-modelling, collaborative practice and the pipeline of educational strategies should play a role in sequentially improving prescribing practice.

CONCLUSION

We are on the right path, with more to achieve.

ACKNOWLEDGEMENTS

Pharmacy Department and Medical Education and Training Unit, Te Whatu Ora – Waitematā.

Providing a pro-active response to COVID-19 demands: Totara Club Dementia day stay.

G Ansell

Te Whatu Ora Health New Zealand – Waitematā

BACKGROUND

Equip Totara Club is a community dementia day-care service contracted to Te Whatu Ora Health New Zealand – Waitematā District Health Board that provides interactive daycare for people diagnosed with mild to moderate dementia. Due to COVID-19 shutdowns, this service was unable to continue, which resulted in members and carers being isolated and where stress increased significantly, with this and other supports diminished or non-existent.

AIMS

To provide a proactive response to COVID-19 demands.

METHODS

The delivery of service changed and evolved during both lockdowns to provide a continuation of predictable, structured, meaningful activities. Members were allocated between the team and tasked to keep a minimum of 2 -weekly phone support with email follow-up, along with virtual activities/video links and hard copy activities where needed. These were also shared with Equip Older Adult Service. Pandemic Risk Plans for all members were kept current. These different contacts were captured on CRM system SharePoint as a COVID-19 response.

RESULTS

Lockdown 1, 19 March 2020–12 June 2020: 36 members contacted over 313 contacts. Lockdown 2, 13 August 2020–22 September 2020: 20 members were contacted over 77 contacts. The team's dedication and adaptability ensured that their members continued to receive the support they needed during these challenging times.

DISCUSSION

The Zoom meetings gave us time to connect as a team. After each meeting we could chat about how things were going for us personally, and how we were coping with supporting all the members and their family /whānau. Our flexible structure enabled us to have a break for ourselves if needed. Specific learnings were noted such as new technology including Zoom, PowerPoint and virtual activities; deeper insight into family/whānau connections and needs; and deeper understanding of members' needs in their home environment.

Inter- and intra-rater reliability for assessment of swallowing using a hand-held portable ultrasound device

R Hammond,^{1,2} A Dimmock,² K Winiker,¹ ML Huckabee¹

¹University of Canterbury

²Te Whatu Ora – Waitematā

BACKGROUND

Ultrasound (US) assessment of swallowing has been documented as reliable in both healthy and dysphagic participants, but has not been translated into standard clinical practice. This may be due to cost and accessibility of US devices. Recent innovations have produced inexpensive, wireless portable US technology that may overcome these barriers. This project explored reliability of image acquisition and

measurement of US images obtained with this technology in a pressured clinical environment.

METHODS

Portable US was used to acquire images of hyoid excursion, thyro-hyoid approximation, tongue thickness and cross-sectional area of submental muscles on eight dysphagic patients. Data were independently collected by two investigators within the same day and measured online (during the exam). Inter-rater reliability was calculated with inter-class correlation coefficient (ICC). Comparison of acquisition and measurement reliability was made to explore the impact of methods on reliability. Offline inter- and intra-rater measurement was completed with a minimum of 11 days between measures.

RESULTS

For all online acquisition measures, reliability ranged from poor (ICC <.50) to moderate (ICC .50–.75). ICC of live versus offline measurement was also analysed which ranged from moderate (ICC .50–.75) to high (ICC >.75) However, reliability of offline measurement was high (ICC >.75).

CONCLUSION

The high reliability of offline measurement of US images is comparable to previous studies. Reduction in reliability is noted when acquiring or analysing the images dynamically. It is hypothesised live data analysis may be affected by the pressure of a clinical environment, lighting and lower resolution of the device. This finding suggests that in order to achieve clinical translation, exploring methods to improve reliability of live analysis is important.

Kaumātua have the ability, desire and right to control their medicines journey

J Hikaka,^{1,2} R Jones,¹ C Hughes,³ N Martini¹

¹The University of Auckland

²Te Whatu Ora – Waitematā

³Queen's University, Belfast

BACKGROUND

Understanding patient experience is a vital component of health service development. Pharmacist-led medicines review services can improve the quality use of medicines. These services, developed internationally, are under-utilised in Aotearoa and may currently increase health disparities. Utilising kaumātua knowledge to develop medicines review services may support the achievement of Māori health equity.

AIMS

Explore kaumātua (Māori older adults) experiences of medicines and medicines-related services

in Aotearoa.

METHODS

Semi-structured interviews were conducted with 10 kaumātua. Reflexive thematic analysis was used to generate themes using a kaupapa Māori theoretical framework. Themes were presented to participants and kaumātua groups. Themes were then developed into key messages for lay audiences. Key messages were visualised through working with a Māori artist. Eligibility criteria: Māori, 55 years or older, 5+ medicines, community dwelling in Waitematā District Health Board.

RESULTS

Four themes were identified: medicines have positive and negative impacts on mind, body and social connections; medicines supply appears to be a business transaction rather than an act of care; kaumātua have the ability, desire and right to make their own medicine decisions; caring, authentic health partnerships to support medicines decisions are valued.

DISCUSSION

This research has been used, in part, to develop a medicines review intervention for kaumātua that was tested in a feasibility study. An important aspect of this research was developing information to feed back to Māori communities and practising pharmacists to better inform everyday practice and support to the achievement of Māori health equity.

Association between socio-economic deprivation and community antibiotic dispensing in the Northern Region of New Zealand using a new measure of deprivation

M Walsh,¹ D Exeter²

¹Te Whatu Ora – Waitematā

²The University of Auckland

BACKGROUND

With the rise of antibiotic resistance, once treatable infections are becoming difficult to cure. This has led to rising costs to healthcare systems as well as individual and societal costs. Consumption of antibiotics in New Zealand has increased by as much as 49% between 2006 and 2014. It has also been shown to be higher than in 22 other European countries. By 5 years of age, 97% of New Zealand children have had at least one course of antibiotics. Māori and Pacific children have been shown to have received more antibiotic courses than New Zealand European children, as well as children living in areas of high socio-economic deprivation (a Census-based mea-

sure of deprivation) compared with children in least deprived areas.

AIMS

To examine the relationship between area deprivation measured by the newly developed New Zealand Index of Multiple Deprivation (IMD) and antibiotic dispensing within the primary health-care-enrolled population of the Northern Region of New Zealand in 2016.

METHODS

Non-identifiable PHO data of individuals residing in the Northern Region of New Zealand were matched to antibiotic dispensing data for 2016. Multivariate logistic regression was used to calculate unadjusted and adjusted odds ratios for the association between deprivation and the dispensing of antibiotics.

RESULTS

A total of 1,676,332 individuals were included in the analysis, of which 715,141 (42.7%) had one or more antibiotics dispensed and 175,905 (10.5%) had three or more dispensed. The prevalence of having three or more antibiotics dispensed varied throughout the Northern Region. Area deprivation was strongly associated with increasing odds of having three or more antibiotics dispensed with an increas-

ing trend as area deprivation increased. Pacific (adjusted OR 1.82; 95% CI: 1.65–2.01) and Māori (adjusted OR 1.64; 95% CI: 1.51–1.77) ethnicities were more likely to have three or more antibiotic dispensed than individuals of Asian ethnicity. Compared with quintile 1, individuals living in quintile 5 data zones were 87% more likely to have three or more antibiotics dispensed. Individuals residing in employment, health, income and education quintile 5 data zones were over 80% more likely to have three or more antibiotics dispensed than individuals residing in quintile 1 data zones within the same domains.

CONCLUSION

In this study, differences in the prevalence of antibiotic dispensing can be seen throughout the Northern Region of New Zealand. Deprivation, as measured by the IMD, and individuals of Pacific or Māori ethnicity were found to have a strong and consistent association with increased odds of antibiotic dispensing. Further research is required to better understand the factors that lead to ethnic and socio-economic differences. These findings may have implications for antimicrobial stewardship and public health campaigns.