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Understanding surgical disease and care for Māori in Aotearoa: Protocol for a scoping review

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Māori, Surgery, Equity, Aotearoa, New Zealand

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Abstract

Introduction

Māori continue to experience inequitable health care and health outcomes compared with other New Zealanders. A narrative review conducted in 2016 described disparities in access to and through the surgical care pathway for Māori from a limited pool of small retrospective cohort studies. This review only targeted studies that specifically investigated surgical care for Māori however, many other studies have performed sub-analyses for Māori as part of bigger ethnographic epidemiological studies and Indigenous Health has become more topical in Australasia since this review was conducted. Health disparities and inequities in surgical care for Māori are still not well understood. This scoping review aims to report the nature and extent of disparities in surgical disease and care for Māori.

Methods and Analysis

A scoping review will be performed in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist. Electronic searches of PubMed, Medline and Embase will be performed without language or date restrictions. Two authors will independently identify and retrieve relevant texts in an iterative manner and examine how responsive each of the included studies are to Māori utilising the recently described Māori framework – a framework designed to guide researcher responsiveness to Māori.

Ethics and Dissemination

Ethical approval has not been sought as our review will only include published and publicly accessible data. We will publish the review in an open access peer-reviewed surgical journal. This protocol has been registered in Open Science Framework (10.17605/OSF.IO/NP4H3).

Strengths and Limitations of this Study

- This study will present an overview of the available evidence on the state of Māori health in surgery with a streamlined focus on access to surgical services and perioperative outcomes

- This scoping review aims to be comprehensive by including all study designs without time period or language restrictions applied A potential limitation is that the population of interest can be difficult to define.

- This study fills a clear gap in the literature related to understanding differences in access to surgery and perioperative outcomes by ethnicity in Aotearoa, New Zealand

Introduction

Māori health is characterised by systematic inequities in health outcomes, exposure to the socioeconomic determinants of health, access to and through the health system and inadequate representation within the health workforce.[1] These longstanding inequities continue to persist due to complex factors that interweave at the patient, healthcare provider and structural levels, and have accumulated over time due to historical and contemporary disadvantages of colonisation.[1, 2] The right to health is inclusive of healthcare and the determinants of health and is ratified in many legally binding national and international human rights covenants.[3, 4] Māori health inequities are unacceptable and are amenable to social policy and government intervention.[1, 5] Equity is an integral component of healthcare policy and must be present to ensure quality care for all patients.[6] Addressing Māori health inequities is challenging due to the many factors that create and sustain them; however, their continued existence breaches basic human rights and rights afforded to Māori as tangata whenua[4, 7, 8] Eradicating health inequities can occur only by addressing any infringements of rights and the unequal distribution of the determinants of health.

In 2015, the Royal Australasian College of Surgeons (RACS) established an Indigenous Health Committee which has since proposed two Māori Health Action Plans to address Māori inequities in surgery, improve the surgical workforce development, support quality research and develop a culturally safe profession.[9] In addition to this, RACS has implemented cultural safety and competence as a 10th core competence. The aspiration is that if surgeons and surgical trainees undergo cultural safety training, this may alleviate systemic racism and other forms of discrimination in surgery.[10] In the most recent Māori health action plan, six priority areas have been proposed including rangahau Māori (research and development) which describes 'using Kaupapa Māori methodology to undertake research that is beneficial for Māori and increases understanding of te Ao Māori and mātauranga Māori'.[11] Currently, the surgical workforce is not fit for purpose to achieve health equity for Māori. Implementing policies that are responsive to Māori have clearly begun to be established in RACS so that a foundation can be been laid to action the goals of the proposed Māori health strategies.

Surgery comprises several different specialties. Whilst RACS is the governing organisation responsible for training surgeons and maintaining surgical standards in Australasia, surgical training in Aotearoa is directly overseen by separate national surgical training bodies. Despite this, the majority of surgical specialties lack comprehensive reports on the state of Māori health in their care. Only one review has been performed outlining disparities in surgical care for Māori which was limited by a lack of robust studies and limited to retrospective audits.[12] It is vital that we outline the gaps in access to and through surgical care pathways as well as understanding the prevalence of surgical disease for Māori. Recent research has shown the Māori experience higher rates of perioperative mortality over a range of operations.[13] Whilst this is not surprising, the lack of Māori led research in this space is concerning. Moreover, a concerning feature of recent research describing ethnic disparities in surgical disease, is the dominance of non-Māori conducting studies on Māori without Māori and therefore producing work that is not responsive to Māori. The aim of this scoping review is to summarise the nature and extent of evidence in Aotearoa on the status of Māori in surgical disease and care and how responsive research really is to Māori using a framework designed by Māori surgeons and Māori health academics.

Methods and Analysis

A scoping review will be conducted in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist.[14] A scoping review was deemed more appropriate than a systematic review, as we anticipate, heterogeneity in the available evidence. A checklist has been provided in Appendix B.

Methodology

This study will be informed by Kaupapa Māori research (KMR) methodology. Kaupapa Māori research critiques the social order and its impact on Māori health and wellbeing.[15] It is politically geared to enact social transformation through Māori autonomy and self-development.[16] In addition, KMR seeks to monitor and critique health systems whilst rejecting deficit views that mark Māori as inherently inferior or naturally prone to health adversity.[17] Kaupapa Māori research can be utilised in both quantitative and qualitative research with the primary goal of highlighting and eradicating Māori health inequities.[16, 18-20] This study will be led and conducted by Māori clinical academics making it 'by Māori and for Māori'.

Objectives/scoping review questions

To achieve our aim, we will answer the following questions:

1. What is the nature and extent of the available evidence on surgical care for Māori in New Zealand?
2. What is the available evidence on the incidence and prevalence of surgical disease (including surgical oncological disease) for Māori in New Zealand?
3. What is the available evidence on the state of perioperative care and outcomes for Māori?

Eligibility criteria

Studies will be included if they report ethnic differences among patients in Aotearoa (whether disaggregated by ethnicity or not). International studies will be included if the results are reported separately for Aotearoa. Observational studies (i.e. cross-sectional, case–control and consecutive case series) will be included. Research letters and grey literature, such as District Health Board (DHB) reports will be included, if they report data for at least one of our outcomes of interest. Editorials, perspective pieces, non-consecutive studies and articles for which full texts are not available (i.e. conference abstract) will be excluded. No language or time restrictions will be applied.

Participants

We will include studies of any population group in Aotearoa without age or gender restriction.

Outcomes

Studies that report at least one of the following will be included:

1. The prevalence of surgical disease – surgical disease refers to any disease that requires surgical intervention by surgeons
2. Attendance and access to public and private surgical services including outpatient clinics, acute admission to hospital and elective admission to hospital
3. Perioperative outcomes surgical treatment under any surgical specialty

Search Strategy

An extensive electronic search of MEDLINE, Embase, PubMed and Google Scholar databases will be performed. Initially, a list of key search terms will be formulated in conjunction with a subject librarian at the University of Auckland. The search strategies will be tailored to each electronic database. In addition, the reference lists of all included articles will be scrutinised as well as those studies who have cited any of the final articles included in this study. We will include grey literature that reports data for at least one of our outcomes. General search terms will be used to identify eligible information within each website and relevant links within documents to other sources of information will be pursued. Given the wide scope of this study, two reviewers will independently perform the search and identify eligible texts in an iterative manner followed by verification from a third reviewer (JR). A table of key search terms has been provided in Appendix A. Lastly, a field of key experts and stakeholders will be contacted to share our list of included studies and a request will be made to them to identify further potentially relevant studies for consideration in the review (Māori Health Responsiveness and Māori Surgical committees).

Study selection

Following the electronic database searches, relevant titles and abstracts will be retrieved and managed in Endnote 20 (Clarivate Analytics, United States) reference management software. Two reviewers will independently screen the title and abstract of identified studies to exclude publications that do not meet the inclusion criteria. Full-text articles will be retrieved for review (via the University of Auckland Library) if the citation seems potentially relevant. Any discrepancies between the reviewers will be resolved by discussion and a third reviewer will be consulted if necessary. A PRISMA flow diagram will be completed to summarise the study selection process.

Data Charting

An electronic data form will be developed in Microsoft Excel 2020 for data collection. The form will be piloted on three studies and required amendments agreed by consensus between the two independent authors conducting the electronic searches. As we anticipate a broad scope of studies, data collection will be iterative with the data form undergoing changes as required. Each included study will be charted independently by two reviewers and any discrepancies between the reviewers will be resolved by discussion. Should consensus not be met, a third reviewer will be consulted if necessary. We plan to contact study authors in the case of unclear information and will make up to three attempts by email.

Data Variables

1. Published data—author(s), year of publication, title, journal and study design.
2. Grey literature—author (organisation, eg, Ministry of Health), year of publication, source website (eg, government/non-government organisation), type of literature (report, thesis, technical report, statistic, other).
3. Study characteristics: year(s) of data collection, sample size, age group of study population, demographics of study population such as gender and ethnicity. Geographic area (eg, city, district) and study setting (eg, facility level).
4. Outcomes as outlined above. We will extract all outcomes at the aggregate level, as well as disaggregated by ethnicity, gender, DHB and area level deprivation wherever available.

Assessment of responsiveness to Māori

Under the guidance of a Māori health responsiveness committee, each included study will be assessed as to its responsiveness to Māori in accordance with the Māori framework (Figure 1).[21] The pool of kaupapa Māori health clinical academics is very small and so a committee was deemed important to adequately critique the included studies in assessing their responsiveness to Māori. Where more information is required, for instance, whether there is uncertainty on whether co-authors on included studies identify as Māori, attempts to contact the corresponding authors of included articles will also be made.

Data Synthesis

Firstly, findings will be summarised in tables and where possible, information for each outcome will be disaggregated by cause of impairment, surgical disease, ethnicity, age, geographic region and area level deprivation where these are available. Level 2 main categories for ethnicity as per Statistics New Zealand (European, Māori, Pacific people, Asian and Middle Eastern/Latin American/African) will be used.[22] Additionally, a narrative report of the findings will be described under subheadings of each surgical specialty (Figure 2). Depending on the level of evidence, each specialty description will include epidemiological, access rates to surgical interventions, perioperative outcomes and Māori perspectives of surgical care. The key findings will be disseminated to our two committees to get feedback on our summary of results.

Patient and Public Involvement

Patients or the public were not involved in the design of this protocol. They will not be involved in the conduct, reporting or dissemination plans of this research. However, the findings of this review will be published in a peer-reviewed scientific journal and will be compiled into a public report for the benefit of clinicians and health policy workers.

Ethics and Dissemination

Ethical approval has not been sought as our review will only include published and publicly accessible data. We will publish the review in an open access peer-reviewed surgical journal. This protocol has been registered in Open Science Framework (10.17605/OSF.IO/NP4H3).

Research Team

Our research team is comprised of Māori surgical trainees and non-trainees over a range of surgical specialties where some have considerable experience in undertaking scoping and systematic reviews (WM, JR). Additionally, two research committees comprised of Māori clinicians, public health physicians and surgeons will be established to ensure adequate supervision of Kaupapa Māori processes and scientific rigour.

Author Contributions

JR and JT drafted the protocol with suggestions from WM, AW, JK and MH who reviewed the protocol and provided feedback on the draft. JR constructed the search. The final version of the protocol was approved by all named authors.

Competing Interests

None

Funding
JR is supported by a Health Research Council (HRC) Research Activation Grant (21/860). The HRC did not have an active role in the development of this protocol.

Figure Legends

Figure 1: The Māori Framework

Figure 2: Surgical specialty subheadings

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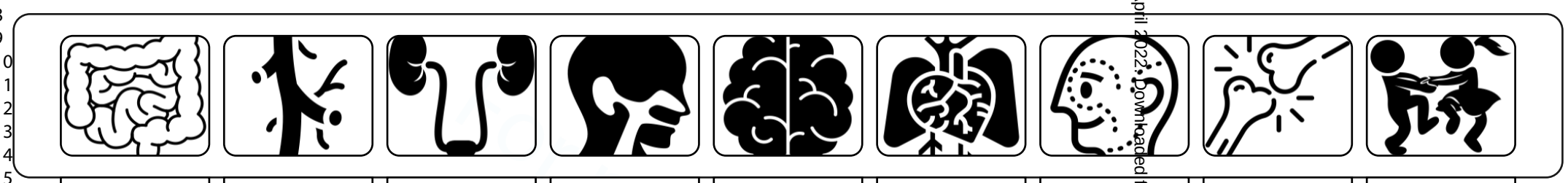
Figure 1: The Māori Framework

Figure 2: Surgical specialty subheadings



General	Vascular	Urology	Otorhino-laryngology	Neuro-surgery	Cardio-thoracic	Plastic and Reconstructive	Orthopaedic	Paediatric
• Colorectal • Breast • Skin/Abscesses • Abdominal Wall • Upper GI • Endocrine								

Appendix A: Search Strategy Key Search Terms

Ethnicity	Disparities	Surgical		NZ
Ethnic*	Disparities	**General Surgery**	Colorectal	New Zealand
Māori	Differences	Breast	Colon*	Aotearoa
Maori	Equity	Gallbladder	Rectal	NZ
Racial	Equitable	Liver	Rectum	
Race	Inequities	Cholecystectomy	Trauma	
	Inequity	Hepatectomy	Traumatic	
	Inequitable	Gastrectomy	Abscess*	
		Weight loss surgery	Hernia*	
		Pancrea*	Bariatric	
		Oesophag*	Thyroid	
		Orthopaedics	Ulcer	
		Arthoplasty	Amputation	
		Joint replacement	Fracture	
		ENT	Throat	
		Otolog*	Nasopharynx	
		Pharyng*	Ear	
		Nasal	Neck	
		Nose		
		Vascular	Revascular*	
		Amputation		
		Aneurysm*		
		Plastic surgery	Recon*	
		Burn*	Trauma*	
		Congenital		
		Urology	Cyst*	
		Prostat*	Renal*	
		Bladder	Kidney	
		Neurosurgery	Shunt	
		Aneurys*	Carotid	
		Brain*	Endarterec*	
		Clot	Emboli*	
		Cardiothoracic Surgery	Coronary artery bypass graft*	
		CABG	Lung*	
		Aorta and Aortic	Coronary artery	
		Mitral		
		Paediatric Surgery		

Pubmed Search Terms

(((ethnic* OR Māori OR racial OR race) AND (disparities OR difference* OR different OR inequit* OR equit)) AND (surg* OR vascular OR aort* OR breast OR gallbladd* OR liver OR hepatic* OR hernia* OR amput* OR burn* OR reconstruc* OR fracture* OR arthroplast* OR joint OR urol* OR prosta* OR bladder OR cyst* OR neurosurg* OR traum*)) AND (New Zealand OR NZ OR Aotearoa)

Appendix B: Reporting Checklist PRISMA-ScR

Reporting checklist for protocol of a systematic review and meta analysis.

Based on the PRISMA-P guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

Upload your completed checklist as an extra file when you submit to a journal.

In your methods section, say that you used the PRISMA-Preporting guidelines, and cite them as:

Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1.

		Reporting Item	Page Number
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	1
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	2
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	2 and 7
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	9
Amendments			
	#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	NA
Support			
Sources	#5a	Indicate sources of financial or other support for the review	9
Sponsor	#5b	Provide name for the review funder and / or sponsor	9

Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	9
Introduction			
Rationale	#6	Describe the rationale for the review in the context of what is already known	4
Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	5
Methods			
Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	5
Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	5-6
Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	10
Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	6
Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	6
Study records - data collection process	#11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	6
Data items	#12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	6
Outcomes and prioritization	#13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	6
Risk of bias in individual studies	#14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	6
Data synthesis	#15a	Describe criteria under which study data will be quantitatively synthesised	7
Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of	NA

		handling data and methods of combining data from studies, including any planned exploration of consistency (such as I2, Kendall's τ)	
Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	7
Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of summary planned	7
Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	NA
Confidence in cumulative evidence	#17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	7

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Strengths and Limitations of this Study

- A scoping review utilising Kaupapa Māori research (KMR) methodology will be performed
- To the best of the authors' knowledge, this is the first scoping review to provide an extensive overview of surgical disease and care for Māori
- A limitation of this study is that the findings for Māori in New Zealand may not be generalisable to other Indigenous populations, although we would expect there would be some relevance.

Introduction

Māori health is characterised by systematic inequities in health outcomes, exposure to the socioeconomic determinants of health, access to and through the health system and inadequate representation within the health workforce.[1] These longstanding inequities continue to persist due to complex factors that interweave at the patient, healthcare provider and structural levels, and have accumulated over time due to historical and contemporary disadvantages of colonisation.[1, 2] The right to health is inclusive of healthcare and the determinants of health and is ratified in many legally binding national and international human rights covenants.[3, 4] Māori health inequities are unacceptable and are amenable to social policy and government intervention.[1, 5] Equity is an integral component of healthcare policy and must be present to ensure quality care for all patients.[6] Addressing Māori health inequities is challenging due to the many factors that create and sustain them. However, their continued existence breaches basic human rights and rights afforded to Māori as tangata whenua.[4, 7, 8] Eradicating health inequities can occur only by addressing any infringements of rights and the unequal distribution of the determinants of health.

In 2015, the Royal Australasian College of Surgeons (RACS) established an Indigenous Health Committee which has since proposed two Māori Health Action Plans to address Māori inequities in surgery, improve the surgical workforce development, support quality research and develop a culturally safe profession.[9] In addition to this, RACS has implemented cultural safety and competence as a 10th core competence. The aspiration is that if surgeons and surgical trainees undergo cultural safety training, this may alleviate systemic racism and other forms of discrimination in surgery.[10] In the most recent Māori health action plan, six priority areas have been proposed including rangahau Māori (research and development) which describes 'using Kaupapa Māori methodology to undertake research that is beneficial for Māori and increases understanding of te Ao Māori and mātauranga Māori'.[11] Currently, the surgical workforce is not fit for purpose to achieve health equity for Māori. Implementing policies that are responsive to Māori have clearly begun to be established in RACS so that a foundation can be been laid to action the goals of the proposed Māori health strategies.

Surgery comprises several different specialties. Whilst RACS is the governing organisation responsible for training surgeons and maintaining surgical standards in Australasia, surgical training in Aotearoa is directly overseen by separate national surgical training bodies. Despite this, the majority of surgical specialties lack comprehensive reports on the state of Māori health in their care. Only one review has been performed outlining disparities in surgical care for Māori which was limited by a lack of robust studies and limited to retrospective audits.[12] It is vital that we outline the gaps in access to and through surgical care pathways as well as understanding the prevalence of surgical disease for Māori. Recent research has shown the Māori experience higher rates of perioperative mortality over a range of operations.[13] Whilst this is not surprising, the lack of Māori led research in this space is concerning. Moreover, a concerning feature of recent research describing ethnic disparities in surgical disease, is the dominance of non-Māori conducting studies on Māori without Māori and therefore producing work that is not responsive to Māori. The aim of this scoping review is to summarise the nature and extent of evidence in Aotearoa on the status of Māori in surgical disease and care and how responsive research really is to Māori using a framework designed by Māori surgeons and Māori health academics.

Methods and Analysis

A scoping review will be conducted in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist.[14] A scoping review was deemed more appropriate than a systematic review, as we anticipate, heterogeneity in the available evidence.

Methodology

This study will be informed by Kaupapa Māori research (KMR) methodology. Kaupapa Māori research (KMR) critiques the social order and its impact on Māori health and wellbeing.[15] It is politically geared to enact social transformation through Māori autonomy and self-development.[16] In addition, KMR seeks to monitor and critique health systems whilst rejecting deficit views that mark Māori as inherently inferior or naturally prone to health adversity.[17] Kaupapa Māori research can be utilised in both quantitative and qualitative research with the primary goal of highlighting and eradicating Māori health inequities.[16, 18-20] This study will be led and conducted by Māori clinical academics making it 'by Māori and for Māori'. Lastly, KMR is concerned with constantly reflecting with Māori communities and equipping them with a critically informed language so that they may articulate their ideas and aspirations in ways the system may understand and therefore support.

Objectives/scoping review questions

To achieve our aim, we will answer the following questions:

1. What is the nature and extent of the available evidence on surgical care for Māori in Aotearoa, New Zealand?
2. What is the available evidence on the incidence and prevalence of surgical disease (including surgical oncological disease) for Māori in Aotearoa, New Zealand?
3. What is the available evidence on the state of perioperative care and outcomes for Māori?

Eligibility criteria

Studies will be included if they report ethnic differences among patients in Aotearoa (whether disaggregated by ethnicity or not). International studies will be included if the results are reported separately for Aotearoa. Observational studies (i.e. cross-sectional, case–control and consecutive case series) will be included. Research letters and grey literature, such as District Health Board (DHB) reports will be included, if they report data for at least one of our outcomes of interest. Editorials, perspective pieces, non-consecutive studies and articles for which full texts are not available (i.e. conference abstract) will be excluded. No language or time restrictions will be applied.

Participants

We will include studies of any population group in Aotearoa without age or gender restriction.

Outcomes

Studies that report at least one of the following will be included:

1. The prevalence of surgical disease – surgical disease refers to any disease that requires surgical intervention by surgeons
2. Attendance and access to public and private surgical services including outpatient clinics, acute and elective admissions to hospital

3. Perioperative outcomes surgical treatment under any surgical specialty

Search Strategy

An extensive electronic search of MEDLINE, Embase, PubMed and Cumulative Index to Nursing and Allied Health Literature (CINAHL) Plus databases will be performed. Initially, a list of key search terms will be formulated in conjunction with a subject librarian at the University of Auckland. The search strategies will be tailored to each electronic database. In addition, the reference lists of all included articles will be scrutinised as well as those studies who have cited any of the final articles included in this study. We will include grey literature that reports data for at least one of our outcomes. General search terms will be used to identify eligible information within each website and relevant links within documents to other sources of information will be pursued. Given the wide scope of this study, two reviewers will independently perform the search and identify eligible texts in an iterative manner followed by verification from a third reviewer (JR). A table of key search terms has been provided in Appendix A. Lastly, a field of key experts and stakeholders will be contacted to share our list of included studies and a request will be made to them to identify further potentially relevant studies for consideration in the review (Māori Health Responsiveness and Māori Surgical committees).

Study selection

Following the electronic database searches, relevant titles and abstracts will be retrieved and managed in Endnote 20 (Clarivate Analytics, United States) reference management software. Two reviewers will independently screen the title and abstract of identified studies to exclude publications that do not meet the inclusion criteria. Full-text articles will be retrieved for review (via the University of Auckland Library) if the citation seems potentially relevant. Any discrepancies between the reviewers will be resolved by discussion and a third reviewer will be consulted if necessary. A PRISMA flow diagram will be completed to summarise the study selection process and a scoping review checklist has been provided in Appendix B.

Data Charting

An electronic data form will be developed in Microsoft Excel 2020 for data collection. The form will be piloted on three studies and required amendments agreed by consensus between the two independent authors conducting the electronic searches. As we anticipate a broad scope of studies, data collection will be iterative with the data form undergoing changes as required. Each included study will be charted independently by two reviewers and any discrepancies between the reviewers will be resolved by discussion. Should consensus not be met, a third reviewer will be consulted if necessary. We plan to contact study authors in the case of unclear information and will make up to three attempts by email.

Data Variables

1. Published data—author(s), year of publication, title, journal and study design.
2. Grey literature—author (organisation, eg, Ministry of Health), year of publication, source website (eg, government/non-government organisation), type of literature (report, thesis, technical report, statistic, other).
3. Study characteristics: year(s) of data collection, sample size, age group of study population, demographics of study population such as gender and ethnicity. Geographic area (eg, city, district) and study setting (eg, facility level).

4. Outcomes as outlined above. We will extract all outcomes at the aggregate level, as well as disaggregated by ethnicity, gender, DHB and area level deprivation wherever available. Source of ethnicity data collection for each included article will be recorded. Where this information is not explicitly detailed, the authors will attempt to retrieve this information directly from the lead research contact.

Assessment of responsiveness to Māori

Under the guidance of a Māori health responsiveness committee, each included study will be assessed as to its responsiveness to Māori in accordance with the Māori framework (Figure 1).[21] The pool of kaupapa Māori health clinical academics is very small and so a committee was deemed important to adequately critique the included studies in assessing their responsiveness to Māori. Where more information is required, for instance, whether there is uncertainty on whether co-authors on included studies identify as Māori, attempts to contact the corresponding authors of included articles will also be made.

Data Synthesis

Firstly, findings will be summarised in tables and where possible, information for each outcome will be disaggregated by cause of impairment, surgical disease, ethnicity, age, geographic region and area level deprivation where these are available. Level 2 main categories for ethnicity as per Statistics New Zealand (European, Māori, Pacific people, Asian and Middle Eastern/Latin American/African) will be used.[22] Additionally, a narrative report of the findings will be described under subheadings of each surgical specialty (Figure 2). Depending on the level of evidence, each specialty description will include epidemiological, access rates to surgical interventions, perioperative outcomes and Māori perspectives of surgical care. The key findings will be disseminated to our two committees to get feedback on our summary of results.

Patient and Public Involvement

Patients or the public were not involved in the design of this protocol. They will not be involved in the conduct, reporting or dissemination plans of this research. However, the findings of this review will be published in a peer-reviewed scientific journal and will be compiled into a public report for the benefit of clinicians and health policy workers.

Ethics and Dissemination

Ethical approval has not been sought as our review will only include published and publicly accessible data. We will publish the review in an open access peer-reviewed surgical journal. This protocol has been registered in Open Science Framework (10.17605/OSF.IO/NP4H3).

Research Team

Our research team is comprised of Māori surgical trainees and non-trainees over a range of surgical specialties where some have considerable experience in undertaking scoping and systematic reviews (WM, JR). Additionally, two research committees comprised of Māori clinicians, public health physicians and surgeons will be established to ensure adequate supervision of Kaupapa Māori processes and scientific rigour.

Author Contributions

JR and JT drafted the protocol with suggestions from JK and MH who reviewed the protocol and provided feedback on the draft. JR constructed the search. The final version of the protocol was approved by all named authors.

Competing Interests
None

Funding
JR is supported by a Health Research Council (HRC) Research Activation Grant (21/860). The HRC did not have an active role in the development of this protocol.

Glossary

Te Ao Māori	The Māori world
Mātauranga Māori	Māori knowledge
Tangata Whenua	Māori as people of the land (Indigenous)
Rangahau Māori	Māori research

Figure Legends

Figure 1: The Māori Framework

Figure 2: Surgical specialty subheadings

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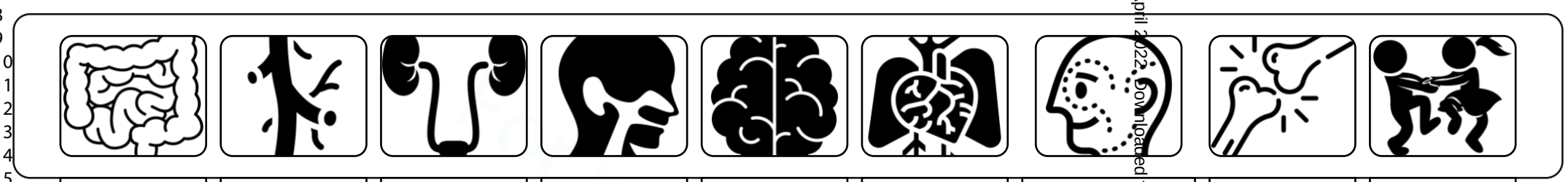
Figure 1: The Māori Framework

Figure 2: Surgical specialty subheadings



General	Vascular	Urology	Otorhino-laryngology	Neuro-surgery	Cardio-thoracic	Plastic and Reconstructive	Orthopaedic	Paediatric

Appendix A: Search strategies

PubMed

((Aotearoa OR New Zealand OR NZ) AND (disparit* OR access* OR differen* OR inequit* OR equit*) AND (ethnic* OR Māori OR Maori OR Indigen*)) AND (surg* OR general surgery OR breast OR gallbladder OR chole* OR liver OR hepatect* gastrec* OR weight loss OR pancrea* OR eesophag* OR colorectal OR colon* OR rect* OR appendi* OR trauma* OR abscess* OR hern* OR bari* OR thyroid* OR parathyroid* OR orthopaed* OR arthroplast* OR joint OR ulcer OR amput* OR fract* OR ENT OR sinus* OR otolog* OR pharyng* OR nasal OR nose OR nostri* OR throat OR nasopharyn* OR ear OR neck OR vasc* OR aneurys* OR revasc* OR plastic surgery OR burn* OR congen* OR recon* OR trauma* OR urolog* OR prostat* OR bladder OR cyst* OR renal* OR calcul* OR kidney OR neurosurg* OR brain OR clot OR shunt OR carot* OR endarter* OR embol* OR cardiothorac* OR CABG OR bypass OR lung* OR coronary OR mitral OR aort* OR paediatric* OR paediatric surgery)

Medline and Embase

1. exp Cardiac Surgical Procedures/ or *Humans/ or exp Postoperative Complications/ or exp Thoracic Surgery/ or exp Thoracic Surgical Procedures/890452
2. exp General Surgery/
3. Ethnic* or Maori or racial or race).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
4. Exp Healthcare Disparities/ or exp Health Status Disparities/
5. (equity or equitable or inequit* or differen*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
6. **4 or 5**
7. exp Orthopedics/
8. exp Otolaryngology/
9. exp Surgery, Plastic/
10. exp Neurosurgery/
11. Vascular Surgical Procedures/
12. exp Urology/ or exp Urologic Surgical Procedures/
13. Specialties, Surgical/ or Pediatrics/
14. (breast or gallbladder or chole* or liver or hepatect* gastrec* or weight loss or bariatric* or pancrea* or eesophag* or colorectal or colon* or rect* or trauma* or abscess* or hern* or thyroid* or arthroplast* or joint or ulcer or amput* or fract* or otolog* or pharyng* or nasal or nose or nostri* or throat or nasopharyn* or ear or neck or vasc* or aneurys* or revasc* or burn* or congen* or recon* or trauma* or prostat* or bladder or cyst* or renal* or kidney or brain or clot or shunt or carot* or endarter* or embol* or CABG or bypass or lung* or coronary or mitral or aort*).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

15. 1 or 2 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14
16. New Zealand or Aotearoa or NZ).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
17. 3 and 6 and 15 and 16

Cumulative Index to Nursing and Allied Health Literature (CINAHL) Plus

(Ethnic* or Maori or racial or race) AND (new zealand or aotearoa or NZ) AND (surgery or operat* or surg* or proced*) AND (disparities or disparity or inequities or inequality or bias or disproportionality or equit* or inequit* or equal*)

Appendix B: Reporting Checklist PRISMA-ScR

Reporting checklist for protocol of a systematic review and meta analysis.

Based on the PRISMA-P guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

Upload your completed checklist as an extra file when you submit to a journal.

In your methods section, say that you used the PRISMA-Preporting guidelines, and cite them as:

Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P, Stewart LA. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 statement. Syst Rev. 2015;4(1):1.

		Reporting Item	Page Number
Title			
Identification	#1a	Identify the report as a protocol of a systematic review	1
Update	#1b	If the protocol is for an update of a previous systematic review, identify as such	2
Registration			
	#2	If registered, provide the name of the registry (such as PROSPERO) and registration number	2 and 7
Authors			
Contact	#3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contribution	#3b	Describe contributions of protocol authors and identify the guarantor of the review	9
Amendments			
	#4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	NA
Support			
Sources	#5a	Indicate sources of financial or other support for the review	9
Sponsor	#5b	Provide name for the review funder and / or sponsor	9
Role of sponsor or funder	#5c	Describe roles of funder(s), sponsor(s), and / or institution(s), if any, in developing the protocol	9

Introduction			
Rationale	#6	Describe the rationale for the review in the context of what is already known	4
Objectives	#7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	5
Methods			
Eligibility criteria	#8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	5
Information sources	#9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	5-6
Search strategy	#10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	10
Study records - data management	#11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	6
Study records - selection process	#11b	State the process that will be used for selecting studies (such as two independent reviewers) through each phase of the review (that is, screening, eligibility and inclusion in meta-analysis)	6
Study records - data collection process	#11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	6
Data items	#12	List and define all variables for which data will be sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	6
Outcomes and prioritization	#13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	6
Risk of bias in individual studies	#14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	6
Data synthesis	#15a	Describe criteria under which study data will be quantitatively synthesised	7
Data synthesis	#15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from	NA

		studies, including any planned exploration of consistency (such as I2, Kendall's τ)	
Data synthesis	#15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	7
Data synthesis	#15d	If quantitative synthesis is not appropriate, describe the type of summary planned	7
Meta-bias(es)	#16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	NA
Confidence in cumulative evidence	#17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	7