Second Online Conference
19–21 July 2023

Public health ethics, implementation, communication

Speakers bios and abstracts

Day 1
Wednesday 19 July
Public Health Ethics

Sir Ashley Bloomfield trained in medicine at the University of Auckland and specialised in public health medicine. He has 25 years experience in public policy and health leadership, including at the World Health Organization in Geneva. His professional areas of interest are non-communicable disease prevention and control and addressing health inequities. He was New Zealand's Director-General of Health from June 2018 to July 2022 and led the country's health response to the COVID-19 pandemic. He was appointed a Knight Companion of the New Zealand Order of Merit (KNZM) in the 2023 New Year Honours for services to public health.

Professor Sir Ashley Bloomfield
KNZM, University of Auckland

Opening Presentation
The importance of intelligence in the health system

Professor Lisa Lee
PhD, MA, MS, Director, Scholarly Integrity and Research Compliance, Virginia Tech, USA

Professor Lisa Lee serves as Associate Vice President for Scholarly Integrity and Research Compliance at Virginia Tech. She also holds a faculty appointment in the department of Population Health Sciences. Prior to joining Virginia Tech, she served as the inaugural Chief of Bioethics at Walter Reed Army Institute of Research where she served as IRB Chair, Research Integrity Officer, and Chair of the Bioethics Consultation Service. During the Obama administration, she was appointed to serve as Executive Director of the Presidential Bioethics Commission.

For over 25 years, Lisa has worked in public health and ethics at the local, state, federal, and global levels, including 14 years at the US Centers for Disease Control and Prevention. At CDC, she served in a number of leadership roles, including the agency's Assistant Science Officer, director of the Office of Scientific Integrity, and Chief Science Officer in the office of surveillance and epidemiology. She has served on public health and ethics working groups for the World Health Organization, the Wellcome Trust, and Chatham House, a think tank in the UK.

Lisa is the lead editor of *Principles and Practice of Public Health Surveillance*, 3rd edition (Oxford University Press). She has authored numerous publications in both science and ethics and serves as associate editor for the Journal of Bioethical Inquiry and Public Health Reports. The focus of her current work is research ethics pedagogy and public health ethics. Dr Lee serves as Chair of the executive board of the Association for Practical and Professional Ethics, and served as the inaugural chair of the Ethics Section of the American Public Health Association. In 2014 she was honored with the Pellegrino Medal for excellence in bioethics.

Lisa holds a PhD in public health from Johns Hopkins University, an MA in educational psychology and an MS in bioethics. She is an epidemiologist, bioethicist, and ethics educator.

Presentation
Ethical dimensions of public health
Public health is a field of action and our decisions to act are based on what we can do as well as what we should do. What we can do is driven by data, evidence, and technology. What we should do is driven by the ethics of our work—what our profession values and the lived experience of the communities we serve. The American Public Health Association underwent a 4-year, field-wide deliberation to summarize public health's values and provide a guidance for a decision-making process for public health professionals. The six values and eight considerations help anchor all aspects of our work.

Associate Professor Angela Ballantyne
PhD, University of Otago

Associate Professor Angela Ballantyne teaches medical ethics at the University of Otago, Wellington. Her research interests include research with human subjects, justice, vulnerability, reproductive technologies, and data ethics. She has served Te Whatu Ora on expert committees for COVID immunisation policy and research ethics review and is currently on the National AI and Algorithm Expert Advisory Group and the Ethics Committee on Assisted Reproductive Technologies. She has been President of the International Association of Bioethics; has worked in global health policy and ethics at the World Health Organization in Geneva, and is a regular Visiting Scholar at Yale University and the National University of Singapore.

Presentation
Consent, inclusion, and trust in big data research
Big data research in public health needs to balance the competing ethical demands of consent, inclusion, and trust. Low trust populations opt-out of data research at a higher rate, are more conservative about sharing and reuse of health and genomic data and prefer greater individual control of data. Mistrust typically results from previous breaches of trust and scepticism of research in these contexts is reasonable. Nonetheless, it is often impracticable to get individual consent for the reuse of large datasets, research may address important health questions, and representative data may be necessary to avoid perpetuating health inequities. In this talk I will consider whether it is more problematic to build AI models without representative data or to use data in low trust settings without consent. I will also consider alternatives to individual consent, such as governance models that demonstrate trustworthiness.

Dr Chris Galloway
Massey University

Dr Chris Galloway's key disciplines are public relations and crisis communication – but in recent years he has become more and more immersed in the world of AI, both writing about it and giving presentations and interviews. He is enthusiastic about "extended" AI i.e. the use of AI-enabled technologies to support and extend human capabilities, rather than completely to supplant them.

Presentation
AI and public health: Changing the conversation
Artificial Intelligence (AI) is already being used in Aotearoa/New Zealand in innovative, potentially transformative ways, including public health-linked applications. As we explore what AI can do for patients now and in the near future, so fast is the pace of development, it's vital we grasp the concept of Explainable AI and it implications for public health practice. Explainable AI is variously defined, but IBM's summary is a good one: [it is] "used to describe an AI model, its expected impact and potential biases. It helps characterize model fairness, transparency and outcomes in AI-powered decision-making". The rub for public health clinicians and associated practitioners is that as we seek to deploy AI-enabled systems, we cannot avoid explaining something of how they work, and both their risks and benefits – that is, if we wish to create trust in the solutions we are delivering. How, then, are we to achieve "explainable" AI-driven public health outcomes? This presentation offers suggestions: ideas that might help change the public discourse from "AI is scary, risky and to be avoided" to a more nuanced and informed approach that seeks to exploit the benefits while being open-eyed about the risks.

Dr Mat Walton
PhD, Institute of Environmental Science and Research

Dr Mat Walton is Science Leader for Social Systems at ESR and has previously been a lecturer in public health and a policy analyst in local and central government. Mat's research focuses on application of systems thinking to public health policy, intervention design and evaluation.

Presentation
A systems thinking view on public health intelligence
What is the role of public health intelligence in achieving equitable health gains within the complex health and wellbeing system? This presentation will provide two different perspectives on public health intelligence, drawing upon two different systems thinking approaches. The first perspective considers different purposes of intelligence and coordination between these purposes. The second provides a lens upon ethics of different public health intelligence purposes. Both perspectives ask questions about governance and design of public health intelligence for equitable health gain.

Associate Professor Anna Matheson
PhD Te Kura Tātai Hauora – School of Health, Te Herenga Waka – Victoria University of Wellington.

Associate Professor Anna Matheson has a background in public health with a focus on health inequality and the social determinants of health. She has a particular interest the relationship between policy systems and communities and the application of complexity theory to social change. Currently Anna teaches health policy and systems to Bachelor of Health students at Te Herenga Waka, and for eight years previously, convened the Master of Public Health at Massey University. She is also a Principal Investigator with Te Pūnaha Matatini - the Aotearoa New Zealand Centre of Research Excellence (CoRE) in complex systems.

Anna leads the evaluation of Healthy Families NZ - a policy-initiated but community-led initiative aimed at strengthening the prevention system in 11 place-based communities around Aotearoa, to improve health and well-being.

Presentation
Complexity theory and 'whole' systems: Lessons for public health action
Complexity and systems thinking are becoming more widely used in public health. From modelling infectious disease spread, to mapping the dynamics of systems that produce population health outcomes, we are finding better tools to cope with the non-linearity inherent in many of our health challenges. But we are also seeing systems thinking increasingly used to guide action and practices to achieve intended change. My talk will touch on how complex systems are different from complicated ones, and why 'whole systems' matter. Insights into pathways to achieve public health goals will be discussed drawing from the implementation of a public health multi-community initiative that has explicitly been guided by complex systems thinking - Healthy Families NZ.

Alex is a Data Analyst, currently working at the Health Quality and Safety Commission where she analyses data for the patient experience survey. She has a Bachelor of Pharmacy and a Postgraduate Diploma in Public Health/ Epidemiology, and is passionate about public health and equity.

Alex Mintoft-Jones
Health Quality and Safety Commission

Presentation

How to improve public health through decreasing meat consumption
The 2019 global burden of disease study estimates that, globally, 1,700,000 deaths and 44,000,000 disability-adjusted life years lost are attributable to diets high in red and processed meat. Consumption of meat increases the risk of heart disease, diabetes, and some cancers. As such, evidence-based nutrition guidelines, such as those from the Harvard School of Public Health recommend reducing meat consumption.

In a broader public health sense, additional human lives are also lost from the effect of meat production on climate change and air pollution. Meat production also has much higher rates of work-place injury and deaths than other types of food manufacturing, as well as historically triggering multiple pandemics such as COVID-19, HIV, swine flu and bird flu.

Considering these risks, how can we encourage people to reduce their meat consumption? In this presentation, I will talk about the results of a meta-review of randomized-control trials trying to find answers to this question. The main findings indicate that providing information on environmental consequences and health risks have a substantial amount of evidence supporting their effectiveness. Highlighting the changing social norms of decreased meat consumption and providing smaller meat portions may also be effective.

Paul Keymer recently assumed the role of Te Whatu Ora's National Quarantine Capability (NQC) Manager. Prior to this, he was the Managed Isolation and Quarantine (MIQ) Future Strategy Team (FST) Manager where he focused on the fusion of intelligence and strategy, ensuring MIQ benefited from strategic future-looking advice. He led FST support to several multi-agency projects which supported New Zealand's wider COVID-19 response, for example 'Reconnecting New Zealanders.' Prior to MIQ, he served in intelligence leadership roles both in New Zealand and the UK.

Paul Keymer
Te Whatu Ora

Presentation

Fusing intelligence and strategy: The MIQ experience
NZ's Managed Isolation and Quarantine ('MIQ') was a rapidly established, distributed isolation and quarantine capability, designed to maintain the restricted international movement of people into New Zealand between April 2020 and August 2022 and to provide some of these services to those in our communities. The MIQ Future Strategy Team (FST) was established in August 2021 to enhance MIQ leadership's ability to make robust future-focused strategic decisions. It successfully achieved this by (uniquely) establishing an intelligence and strategy 'fused' capability, delivering integrated planning and predictive analysis in a manner not achievable via a single discipline. Its success demonstrated the compound value of fusing complementary business functions and adopting intelligence functionality within business environments unfamiliar with these concepts. This talk explores how this was achieved, conveys lessons identified through this journey and describes case studies which highlight FST outputs.

Dr John Battersby
FFPH FHEA,
Department of Health
and Social Care, UK

Dr John Battersby is a Deputy Director in the Public Health Analysis Unit in the Office for Health Improvement and Disparities where he leads the Enabling Public Health Analysis Team. He is also the Head of the School of Public Health in the Eastern Region. His work in recent years has focused on the development of public health and analytical skills, including data science within the general and analytical public health communities. John has worked in health intelligence since 2009 and before then spent six years as a Director of Public Health.

A Kiwi at heart, John was born in Wellington but taken to the UK in infancy. Covid permitting, he returns whenever he can to catch up with family who are spread along the length of the country from Auckland to Wanaka.

Presentation
Building public health intelligence capability and capacity
This presentation will outline the approaches taken in England to build public health intelligence capability and capacity. It will reflect on the learning that this has generated and discuss what might be generalisable in other settings.

Dr Chris Skelly
PhD, Department
of Health and
Social Care, UK

Dr Chris Skelly has been working in and out of public health intelligence since 1997 (starting with the NZ Ministry of Health), but he got his first taste of supporting public health actions in Townsville, Queensland's dengue outbreaks in the early 1990s (as an academic). The early part of his career was focussed on developing the right data, information or knowledge and getting it to the right people to best support public health intervention. At some point in this journey the feeling that "it's not making much of a difference" began to grow, resulting in a change of focus. Consequently, the later part of his journey (currently in the UK's DHSC) has been seeking a different approach to public health intelligence known as 'systems thinking'.

Presentation
A more effective public health practice is a pathway to healthcare demand management
Who doesn't want a 'more effective public health practice'? The effectiveness of all public health interventions can be quantified by three numbers: reach, compliance and efficacy. If we are interested in being more effective, we need to improve these numbers — these are the indicators that public health intelligence needs to focus on if we are going to increase public health effectiveness and drive down health care demand. This will require the adoption of a systems-based approach — one that public health intelligence should be leading.

Professor Barry Borman is Professor of Epidemiology at Massey University, Wellington and Director of Environmental Health Intelligence NZ. He has over 30 years of experience in applied epidemiology, perinatal epidemiology, surveillance, and invesetigating disease clusters. He has previously been Senior Epidemiologist in the Ministry of Health and Public Health Commission, and Manager of Public Health Intelligence (PHI), the epidemiology group of the Ministry of Health.

Barry has been the Director of the New Zealand Congenital Anomalies Register (NZCAR) since 1987, and represents NZ at the International Clearinghouse for Birth Defects Surveillance and Research. Since the late 1990s, he has advised governments, crown agencies and the health sector on issues around folic acid fortification to reduce the risk of babies being born with neural tube defects (eg, spina bifida, anencephaly).

Associate Professor Deborah Read is a public health medicine specialist and Co-Director of Environmental Health Intelligence NZ, Massey University Wellington. Her public health work has mostly been in environmental health, public health surveillance and public health regulation. Her experience includes as a consultant in the public sector, Medical Officer of Health in District Health Boards and positions in the Ministry of Health and other central government agencies. She has held several governance and regulatory decision-making roles including in the former Environmental Risk Management Authority and the statutory hazardous substances and new organisms decision-making committee of the Environmental Protection Authority, Medical Council of New Zealand, Health Practitioners Disciplinary Tribunal, and Veterans' Entitlement Appeal Board.

Professor Barry Borman and Associate Professor Deborah Read
Massey University

Presentation
Health intelligence: NZ's final frontier

The New Zealand health system is data-rich, information-poor, and intelligence meagre. Data is not information, and information is not intelligence. Like many jurisdictions, we continue to collect and collate vast quantities of data at an increasing rate. As evident in the current COVID-19 pandemic, a plethora of tools are available to "analyse" the deluge of data at great speed, often in the mistaken expectation that "intelligence" will be produced. Consequently, there has been a proliferation of models, dashboards, and other visual aids (graphs, tables etc.) for data visualisation. However, analysis of data only produces information. Naively, the data-driven, machine-analysed paradigm is often thought to produce the "evidence" for decision-making and policy development. Continuing such a blinded approach poses potential health risks to New Zealanders and remains a major impediment to improving our health status.

Only through the human-driven evaluation of intelligence-based decisions and policies will our knowledge about NZ's population health increase and ultimately yield better health outcomes.

Michelle Mako
Tākai Aranui, Hauora Māori Tūmatanui – Director Māori Public Health, Ministry of Health

Michelle Mako originally trained as a cardiac nurse, completed her Master of Public Health at Otago University and has spent most of her career focused on public health and Māori health inequities. Apart from a short term at the National Cancer Society, over the last 25 years Michelle has worked in a range of government health sector organisations including the Ministry of Health and the Health Promotion Agency. More recently Michelle worked as the Equity Director for Te Aho o Te Kahu – the Cancer Control Agency, and her current role is Tākai Aranui, Hauora Māori Tūmatanui – Director, Māori Public Health in the Public Health Agency. She is also currently completing her Professional Doctorate at Te Herenga Waka – Victoria University Wellington.

Presentation
Whaowhia te kete mātauranga – fill the baskets of knowledge. Building Māori data into public health knowledge systems

New Zealand has recently completed a transformational health system reform process that has led to the establishment of new agencies and created a new opportunity to improve system performance in relations to public health outcomes. The Public Health Agency and Te Aka Whai Ora are co-sponsoring the Public Health Knowledge and Surveillance System (PHKSS), which is continuous improvement programme that enables us to track system performance in identifying and responding to public health priorities and outcomes.

This presentation will identify the levers and approaches for change being enabled to embed equity and Te Tiriti o Waitangi principles into the DNA of the PHKSS architecture through partnership and deliberate design, to enable us to track system progress and performance towards Pae Ora for Māori.

Associate Professor Robyn Mildon
PhD, Centre for Evidence and Implementation, Melbourne

Associate Professor Robyn Mildon is an internationally recognised figure in the field of implementation science, evidence synthesis and knowledge translation, and program and policy evaluations in health, education and human services. She is the Founder and Chief Executive Officer of the **Centre for Evidence and Implementation**, a global social purpose organisation whose work now spans across 8 countries. She is an Adjunct Associate Professor at Monash University, a Visiting Professor at the Yong Loo Lin School of Medicine, National University of Singapore, Co-Director of the recently established Behavioural and Implementation Science Interventions (BISI), National University of Singapore, and was the Chair of the **Evidence and Implementation Summit** 2021.

Over her career, Robyn's work has helped to advance the implementation of better evidence in policy and practice settings, improving the quality and effectiveness of health, education and human services. She has been a keynote speaker at multiple events around the globe and designed and led a number of workshops to train students, policy makers and practitioners in implementation science and evaluation methods. Robyn has authored or co-authored multiple peer-reviewed publications, commissioned evidence reviews and book chapters. She is also a co-author of an edited book "Implementation Science 3.0" (Springer, 2020). In 2021 Robyn was honoured with the Campbell Collaboration's John Westbrook Award for contributions to knowledge translation & the dissemination and implementation of evidence.

Presentation

**Accelerating the implementation of public health intelligence:
How Implementation Science can help**

The field of Implementation Science can support systematic improvements in the implementation of public health intelligence. Implementation science studies how changes are successfully introduced, implemented and scaled within a system. This can help health and public health leaders maximize efforts to improve outcomes by providing strategies to ensure that implemented policies and programs have a greater likelihood of success. This talk will focus on the success factors and challenges for effectively implementing and scaling innovations. We will describe key implementation concepts and strategies and outline the field of implementation science and practice, particularly as it relates to health and public health settings.

Jacinta is Chief Executive Officer of Moana Connect and has extensive leadership and management experience in health research, public health and Pacific wellbeing in Aotearoa New Zealand. As the founding Managing Director of Moana Connect, Jacinta empowers the importance of Pacific world views, and the prominence of self-determination in all Moana Connect work, including evaluation, research and advocacy.

Jacinta has worked for Pacific health provider WestFono as Manager Pacific Health Research with the Health Research Council, and as Senior Advisor, Pacific for the Public Health Group in the Ministry of Health. After the Ministry of Health, Jacinta was shoulder-tapped to manage TAHA Pacific Maternal and Child Health Service at the University of Auckland.

Having completed her Master of Public Health (Honours), Jacinta is undertaking a PhD at the Centre for Longitudinal Studies – Growing Up in New Zealand Study, investigating the concept of Resilience among Pacific families within the cohort.

Jacinta Fa'alili-Fidow
**Moana Connect,
Auckland**

Presentation
Pacific data sovereignty: making data matter

Ron King is the Intelligence Programme Manager at Auckland Regional Public Health Service. Before taking on this role he was the service's sole Intelligence and Surveillance Specialist and worked across the health promotion, environmental health, and communicable disease streams. During this time Ron developed Serval, the service's integrated health surveillance and intelligence system which provides a single source of truth for all surveillance, geospatial, and intelligence products.

The change into a management role also involved the creation of a new centralised cross-functional intelligence team that incorporates data and digital, geospatial, analytics, reporting, and dashboarding. With a distant background in health geography and health psychology and more than 20 years' in public health intelligence he has experienced many technologies, structures and challenges in the field.

Ron King
Te Whatu Ora

Presentation
Reimagining geospatial in public health intelligence

Despite public health being concerned with spatially mediated health risks and determinants, and populations themselves being geographically defined, geospatial remains a niche capability in the sector.

We revisit the promise of GIS to public health, suggest why after more than 20 years it has failed to deliver its potential, and consider an effective alternative to the traditional GIS implementation.

Professor Neil Pearce
London School of Hygiene and Tropical Medicine & Hygiene, UK

Professor Neil Pearce joined the LSHTM at the beginning of 2011, after working in New Zealand for the last 30 years. He originally trained in biostatistics, before moving over to do a PhD in epidemiological methods. Since the completion of his PhD in epidemiology in 1985 Neil has been engaged in a wide range of public health research activities. His current research interests focus on epidemiological and biostatistical methods, and their application to studies of non-communicable diseases (NCDs), including occupational and environmental health, asthma, kidney disease and neurological disease. Neil has a particular interest in global epidemiological studies. He is a Fellow of the Royal Society of New Zealand (FRSNZ) and the Academy of Medical Sciences (FMedSCi) and Past-President of the International Epidemiological Association (IEA).

Presentation
Why we need to keep doing surveillance using population surveys

Professor Michael Baker
University of Otago

Professor Michael Baker is a public health physician and Professor in the Department of Public Health, University of Otago, Wellington where he has worked fulltime since 2003. He is currently on study leave as a visiting Fellow at the Norwegian Centre for Advanced Study (CAS).

His work during 2020-22 was dominated by assisting with the COVID-19 pandemic response. Michael is a member of the Ministry of Health's COVID-19 Technical Advisory Group and has been a leading architect and advocate for the COVID-19 elimination strategy. He established a programme of research on the epidemiology, prevention, and control of COVID-19 in NZ and internationally (Co-Search), which has generated a large amount of published research and commentary aimed at improving the pandemic response and preparedness.

Michael has a wide range of public health research interests, with a focus on infectious diseases, environment al health, and improving housing conditions. See website for more details: **www.otago.ac.nz/wellington/departments/ publichealth/staff/otago024831.html**

Michael has a strong interest in science communication. In Feb 2023 he launched the Public Health Communications Centre, where he is its inaugural director.

Presentation
Why public health communication matters
New Zealand's new Public Health Communication Centre (PHCC) was launched in February 2023. It is supported by a philanthropic endowment, giving it a high degree of independence. This presentation makes the case for why such a Centre is needed.

The purpose of the PHCC is: *To promote policy, practice, and public awareness that protect and improve the health, wellbeing, and equity of the people of Aotearoa New Zealand and the health of the environment in which we live.*

The Centre is focussed on three broad areas:

1. Supporting evidence-informed policy – Including assisting with evidence translation from research to policy and practice, agenda setting through highlighting opportunity for public health gain, reframing issues from a public health perspective, and tracking and updating evidence on key issues.
2. Improving Government decision-making processes – Such as supporting a shift to long-term thinking, a greater focus on high-level global health and development goals, and improving transparency and integrity when managing the commercial determinants of health.
3. Informing the public on health issues and providing some protection from disinformation – This process is largely about supporting mass media and social media to increase their content of accurate public health information. Such information can in turn improve health literacy, trust in science, and the social licence for public health measures. Ultimately, such knowledge provides some protection from disinformation.

Michael acknowledges the highly effective and dedicated co-directors, staff, and board of the PHCC. He encourages interested people to subscribe to the PHCC *Briefing* and consider writing for it. See website for details: **www.phcc.org.nz**

Associate Professor Siouxsie Wiles
MNZM, University of Auckland

Associate Professor Siouxsie Wiles MNZM heads up the Bioluminescent Superbugs Lab at the University of Auckland where she and her team are on the hunt for new antibiotics. Siouxsie is also a firm believer that research doesn't end with a peer-reviewed publication. She has spent more than a decade learning how to communicate and demystify science, winning multiple awards along the way. When COVID-19 arrived, Siouxsie joined forces with Spinoff cartoonist Toby Morris to make the science of the pandemic clear and understandable. Their award-winning graphics have been translated into multiple languages and were even used by governments and organisations. Siouxsie was the Supreme Winner of the Stuff Westpac 2020 Women of Influence Award, named by the BBC as one of their 100 influential women of 2020, and the 2021 Kiwibank New Zealander of the Year.

Presentation
What the COVID-19 pandemic taught me about science communication
When the COVID-19 pandemic arrived, Dr Siouxsie Wiles – an infectious diseases expert and award-winning science communicator – began to feel like she'd spent a decade training for a marathon she never knew she was going to run. In her presentation, Siouxsie will talk about her award-winning collaboration with cartoonist Toby Morris and reflect on the lessons the pandemic has taught her about science communication.

Associate Professor Sir Collin Fonotau Tukuitonga
KNZM, University of Auckland

Sir Collin Fonotau Tukuitonga KNZM is a Niuean-born New Zealand doctor, public health academic, public policy expert and advocate for reducing health inequalities of Māori and Pasifika people. He has held several positions in public health and government in New Zealand and internationally.

He was appointed a Knight Companion of the New Zealand Order of Merit, for services to Pacific and public health, in 2022.

Sir Collin has held several highly influential offices, including Director General of the Pacific Community (SPC), Commissioner and Co-ordinator for WHO Geneva, Chief Executive of the Ministry of Pacific Island Affairs and Director of Public Health, Ministry of Health. He was also instrumental in establishing Pacific Language weeks as an Aotearoa New Zealand government initiative, and in his home of Niue, he established the biannual Niue Culture and Arts Festival.

Sir Collin is one of our most prominent Pacific figures in the health sector in Aotearoa and globally. His voice was crucial in advocating for Pasifika during the COVID crisis in Aotearoa, and he has been consistently vocal in pointing to inequities for Pasifika in the health system and pushing for policy to impact Pasifika in better ways.

His current positions at the University of Auckland are Associate Dean Pacific, Faculty of Medical and Health Sciences Administration; Associate Professor, Population Health; and Director – University Research, Centre for Pacific and Global Health.

Presentation
TBC

Lou Wickham and Kylie Mason
Emission Impossible and Massey University

Lou Wickham is a Director and Senior Air Quality Specialist with Emission Impossible Ltd, an air quality consultancy in Auckland. Lou has a bachelor's degree in chemical and materials engineering, a master's degree in environmental law and more than 25 years' experience working on air quality issues for both private and public sectors in New Zealand, Australia and the United Kingdom. Prior to joining Emission Impossible Ltd in 2011, Lou was the technical lead at the Ministry for the Environment, developing, implementing and reviewing the national environmental standards for air quality. Since then, Lou has contracted primarily to the public health sector, as well as being a Commissioner and Chair in numerous public hearings under the Resource Management Act 1991.

Lou is a co-author of the soon to be published "Air Pollution and Social Inequity in Aotearoa" study and a study quantifying the health benefits of air quality improvements during COVID-19 lockdowns in Auckland.

Kylie Mason is a Principal Analyst in the Environmental Health Intelligence NZ team **www.ehinz.ac.nz** at Massey University (Wellington). EHINZ is funded by the Ministry of Health to monitor the effects of the environment on the health of New Zealanders. As part of this team, Kylie has been involved in a variety of projects, including developing social vulnerability indicators for natural hazards, and environmental burden of disease studies. Kylie has a Master's degree in Applied Statistics and a postgraduate certificate in public health (environmental health), and has previously worked at the Ministry of Health. Kylie is a co-author of the soon to be published "Air Pollution and Social Inequity in Aotearoa" study.

Presentation

Social inequity and air pollution in Aotearoa

This study investigates exposure to air pollution in Aotearoa by socioeconomic deprivation and ethnic group.

In 2016, less than a third of New Zealanders were exposed to annual levels of nitrogen dioxide above the WHO guideline. We found this exposure was not shared evenly.

On average, people living in the most deprived areas (NZDep2013 decile 10 areas) were exposed to long-term concentrations of NO_2 that were 34% higher than people living in the least deprived areas (NZDep2013 decile 1 areas).

Asian, Pacific peoples and Middle Eastern/Latin American/African (MELAA) ethnic groups were more likely to be exposed to annual concentrations of NO_2 above the WHO guideline (49-58% of the population) than NZ European (23% of the population) or Māori (26% of the population). The disparity remained when considering Auckland urban-only exposure.

In addition to exploring differences in exposure to air pollution, we used the HAPINZ national exposure model (Kuschel et al., 2022) to quantitatively estimate health impacts associated with exposure to long-term pollution. We found that estimated air pollution health impacts associated with both anthropogenic $PM_{2.5}$ and NO_2 exposure were substantially higher in more deprived areas.

For example, the rate of premature mortality (among 30+ years) associated with exposure to NO_2 and $PM_{2.5}$ in the most deprived areas (NZDep2013 decile 10) is double that of the least deprived areas (NZDep2013 decile 1). We found the rate of respiratory hospitalisation associated with exposure to NO_2 is four times higher in the most deprived areas, compared with the least deprived areas.

Of note, we found the greatest health impacts, in both relative and absolute terms, were associated with chronic exposure to NO_2. These impacts vary by geography, with the Counties Manukau District Health Board area disproportionately impacted. This means policy that targets air pollution improvements in more deprived areas would deliver bigger health benefits, especially policy to reduce motor vehicle emissions (the main source of NO_2).

Professor Heather McLeod
Heather McLeod & Associates

Professor Heather McLeod is an actuary by training and has worked on healthcare financing, health policy and social security policy for 30 years. Heather is originally from South Africa, where she consulted to the National Treasury and Department of Health, served on statutory bodies, and developed post-graduate courses in healthcare financing.

Heather married a Kiwi who whakapapas to Te Rarawa, and has lived in Aotearoa since 2010. She worked for the Ministry of Health, supporting the Palliative Care Council from 2012 to 2015. She has consulted to the Ministry of Health, District Health Boards, Hospice New Zealand, the New Zealand Aged Care Association, and Te Whatu Ora on the impact of an ageing population on healthcare at the end of life.

Heather recently completed a Master in Climate Change Science and Policy and increasingly works on climate change issues. She is a country girl at heart and lives in Hanmer Springs, Te Waipounamu. Heather is also Adjunct Professor, Actuarial Science, University of Cape Town, and Extraordinary Professor, Department of Statistics and Actuarial Science, University of Stellenbosch.

Presentation
"There be dragons": Definitions matter
There is rightly a strong focus on equity by ethnicity, deprivation, and rurality. Yet the data underpinning our analysis is not as solid as we might think. We share results from an analysis of mortality data for Te Whatu Ora for the period 2000-2018. Ethnicity held in the MORT records is compared to that in the NHI records, with 18.4% of people found to have a different ethnicity. Assigning deprivation and rurality requires geo-coding and this is typically at domicile level in the national collections. Differences in assignment using Stats NZ SA1 and SA2 geographies are outlined and a "gold standard" for research recommended.

Dr Kaaren Mathias is a public health physician and researcher with a focus on participation, inclusion, equity and mental health in communities. She is a Senior Lecturer in the Faculty of Health, University of Canterbury. She is also a Training programme supervisor with the NZ College of Public Health Medicine. Kaaren uses participatory methods and does both quantitative and qualitiative research.

Dr Annabel Ahuriri-Driscoll is a Māori academic and researcher, whose specialisation is hauora Māori from a public health perspective. Her research career has spanned positions at the University of Otago, ESR Ltd, and the University of Canterbury, where she has been involved in a diverse range of research kaupapa focused on Māori development and advancement. Current projects include climate change and child health, the geospatial dimensions of air pollution and respiratory health inequities, and lived experience in mental health service design and delivery.

Dr Kaaren Mathias and Dr Annabel Ahuriri-Driscoll
Te Kaupeka Oranga – Faculty of Health, University of Canterbury

Increasing equity in health care for children – what's working

Background

There are inequities in the design, implementation, evaluation and contracting of child and youth healthcare in Aotearoa and a limited understanding of how integrated child and youth services achieve their outcomes. This limits the ability to scale up effective services. Our aim was to use a realist lens to examine the practices and processes that increase equitable access to care and health outcomes for children and young people in Waitaha, Aotearoa.

Methods

This qualitative case study used a realist evaluation lens to explore what works, for whom and under what circumstances synthesising primary and secondary data from multiple sources. We selected three case study services widely recognised as effective in the Waitaha (Canterbury) region and conducted 13 in-depth interviews with service leaders, front-facing staff and whānau members. Data were coded and thematic analysis considered context, interventions, mechanisms and outcomes.

Six context – outcome – mechanism hypotheses emerged from the data:

1. When families were visited frequently and consistently by kaimahi (context) then they felt safe (mechanism) and could take actions towards their future (outcome).

2. When families and kaimahi shared their life experiences with each other (context), then they formed a trusting and supportive relationship (mechanism) and then acted towards their future (outcome).

3. When kaimahi engaged in culturally embedded ways (context), rangatahi and family felt their mana (value and agency) was enhanced (mechanism) and then more easily participated in sports and social activities (outcome).

4. When kaimahi supported positive whānau parenting (context), parents felt encouraged and effective (mechanism), and then took further initiatives to parent actively (outcome).

5. When kaimahi responded to practical priorities of families (context) then family members felt freed up from immediate concerns (mechanism) and then were better able to act for the wellbeing of themselves and their family (outcome).

6. When family members felt connected with a community (context) they built new relationships (mechanism) which then improved their individual wellbeing and collective wellbeing (outcome).