



Te Niwaha

Research Project Impact Case Study

Community-based surveillance of severe bacterial pathogens to guide prevention and control

Short Research Title

Community-based Carraige study

Key researchers

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Introduction

Invasive meningococcal disease (IMD) and invasive pneumococcal disease (IPD) are severe infectious diseases caused by *Neisseria meningitidis* and *Streptococcus pneumoniae* respectively. In Aotearoa New Zealand both diseases disproportionately affect Māori and Pacific populations, especially children. These two pathogens can be carried asymptomatically by healthy people in their upper respiratory tract. We will conduct a community-based carriage study in Māori and Pacific households to understand carriage and transmission of these bacteria. These will be the first community-based carriage studies of these pathogens in Aotearoa New Zealand (NZ). The goal of the study is to provide information on circulating meningococcal and pneumococcal bacteria and compare these to isolates identified from people with disease, and to provide insights into transmission patterns, housing factors and behaviours that may influence carriage.

The project objectives are:

- 1) To carry out cross-sectional community-based carriage surveys for meningococcus and pneumococcus in whole households in Māori living in Northland and Pacific people in South Auckland.
- 2) To carry out 6-week longitudinal weekly sampling for carriage in all members of up to 3 households in each of Northland and South Auckland.
- 3) Conduct demographic and behaviour surveys in each cross-sectional study to identify population differences and risk factors associated with carriage of each pathogen.
- 4) Conduct molecular typing and genomic sequencing of the isolated bacteria to understand the diversity of circulating meningococci and pneumococci to provide insights into transmission in the longitudinal studies.

Community engagement, participant recruitment and sampling are being conducted by The Moko Foundation, Kaitiaki and Pasefika Family Health Group, Auckland.

This report is written in conjunction with The Moko Foundation.

Results

The Moko Foundation has completed a two-month engagement strategy ahead of swabbing and surveying for the Carriage Study, designed to maximise participation, promote awareness, and uphold mana-enhancing research practices alongside the Te Hiku o Te Ika community. Our approach supported key research impact areas by promoting infectious disease awareness and prevention through tailored, culturally relevant health messaging using fit-for-purpose tools, including kanohiki-te-kanohi engagement and digital resources. This strategy strengthened understanding of research as a tool for improving hauora Māori locally and nationally, reinforcing the Carriage Study's impact and the value of community-led knowledge mobilisation.

The communication tools used included:

- **Culturally appropriate resources:** We distributed easy-to-understand materials containing key health messages. These resources aimed to educate whānau about infectious disease risks, common symptoms, and scientifically supported prevention methods.
- **Direct community engagement:** Our team maintained a physical presence and held face-to-face conversations with remote and rural communities. These communities often experience greater health and social challenges due to intersecting systemic barriers and limited access to essential services.

Multi-platform dissemination: Health messages were shared through a variety of channels, including Iwi networks, local NGOs, kura, and kōhanga. We also utilised social media, notably delivering an Infectious Disease Webinar via The Moko Foundation's Facebook platform to reach a wider audience.

Impact:

Our strategy has delivered meaningful impact and value to the communities involved in the study. This includes:

Te Niwha Research Project - Impact Case Study

- **Value Extraction from Existing Science:** We applied established scientific knowledge on the risks and symptoms of infectious diseases to inform our health messaging. Research-backed methods for reducing risk were clearly communicated to whānau, helping to support informed decision-making and improved health outcomes.

- **Improved population health, early detection and mitigation of health risks for disadvantaged groups:** Face-to-face conversations with whānau in areas of Te Hiku o Te Ika—where systemic barriers are more prevalent—revealed that these simple yet critical health messages had not been effectively communicated to them prior to our engagement.

Through this strategy, The Moko Foundation has not only strengthened community understanding of health issues and preventative measures among underserved populations but also laid the groundwork for the success of the Carriage Study by building trust, fostering sustained engagement, and supporting early intervention and improved health equity in Te Hiku o Te Ika.