Research Project Impact Case Study

December 2025

Preventing recurrent admissions for preschool wheeze respiratory infections – ARROW

ARROW: Aiming for a healthier tomorrow for our children and environment

Professor Cameron Grant[1]
Mrs Marisa van Arragon[1]
[1]Department of Paediatrics: Child & Youth Health, The University of Auckland, Auckland, Aotearoa New Zealand

A. Introduction

1) Research purpose: Preschool wheeze is a leading cause of hospitalisation during childhood, particularly affecting Māori and Pacific children in New Zealand. Current asthma-based treatments are ineffective, highlighting the urgent need for more effective prevention strategies. This project aims to determine if an oral medicine with an excellent safety profile, called OM-85, prevents wheezy illness hospitalisations in preschool-aged children with recurrent wheeze. If shown to work, this intervention could improve health outcomes for children, addressing respiratory health disparities and advancing equitable health in New Zealand.

2) Research approach: This is a multi-centre, randomised, double-blinded, placebo-controlled trial. We enrol children aged 1-<6 years experiencing wheezy illnesses and at least one hospitalisation due to wheeze. Participants receive the study medication, either OM-85 or placebo, administered daily for the first 10 days of each month over a 12-month period. We are enrolling 1088 children in this trial.

The project involves collaboration between seven New Zealand hospitals and 45 Australian hospitals, alongside various community organisations supporting preschool-aged children. These include Plunket, Asthma New Zealand, Kōhanga Reo, preschools and schools, libraries, pharmacies, and Māori and Pacific primary care organisations in the Tāmaki Makaurau and Waikato regions, and iwi across multiple regions of New Zealand.

Funding partners include the Australian National Health and Medical Research Council, Cure Kids, Starship Foundation, Auckland Medical Research Foundation, University of Auckland, Te Niwha, Lottery Health, and the Health Research Council of New Zealand.

3) Alignment with Te Niwha: We align with the Te Niwha mission by addressing infectious diseases that are the most frequent cause of hospital admissions in preschool-aged children. Most childhood wheezing illnesses occur in this age group. Therefore, we need treatments and preventive strategies specifically tailored to preschool-aged children.

The project aligns with Te Niwha's Investment Objectives through its research approach (Tiakitanga). It fosters existing relationships and builds local and international collaborations (Hononga) and partnerships (Tūhonotanga) among academic sites, hospitals, Māori and Pacific healthcare organisations, and community settings. People have come together and collaborations strengthened by learning from one another, by respecting each other's culture and contributions, and above all, by developing trusty relationships. The ARROW whānau includes >30 researchers, doctors and nurses in New Zealand working towards improving the health of our children. There have been many opportunities for emerging researchers and leaders to be mentored and supported (Rangatiratanga) throughout. New strategies are being implemented to enhance the knowledge and understanding of local communities, guided by their input and suggestions. These strengthened partnerships will extend beyond this project.

B. Summary of Results and Key Achievements

1) Science Excellence: The ARROW trial represents a landmark effort in paediatric respiratory research in Aotearoa New Zealand and Australasia. It is a multi-centre, randomised, double-blinded, placebo-controlled trial enrolling 1,088 preschool-aged children with recurrent wheeze and prior hospitalisation. This rigorous design ensures high-quality, reliable evidence on whether OM-85—a safe oral immunomodulator—can prevent wheezy illness hospitalisations.

The project brings together leading paediatric researchers, clinicians, and nurses across seven New Zealand hospitals and 45 Australian hospitals, supported by community organisations such as Plunket, Asthma NZ,

Kōhanga Reo, and Māori and Pacific health providers. ARROW exemplifies best-practice methodology, transparency, and collaboration, fostering a strong research network that prioritises equity, cultural partnership, and wellbeing. Over 30 researchers in New Zealand have contributed, creating mentoring opportunities for emerging leaders and embedding Vision Mātauranga principles throughout.

2) Outcomes: Recruitment has progressed strongly, with 941 children enrolled to date, including 271 from New Zealand—approximately half identifying as Māori or Pacific. In 2025, two new sites (Christchurch and Wellington) joined the platform, expanding reach and strengthening national collaboration. Community engagement has deepened through initiatives led by Mrs Tania Milne (Ngāti Hāua), securing endorsements from Whānau Āwhina Plunket NZ, Asthma NZ, pharmacies, and primary care networks. These efforts ensure equitable access and participation for whānau across regions.

ARROW researchers have shared expertise internationally, presenting at the Pediatric Academic Societies meeting in Hawaii and contributing to the CIRCAN collaboration in Australia. These activities reinforce ARROW-CIRCAN's role as a contributor of global paediatric research networks and a driver of collaborative innovation.

C. Impact

1) Current Contributions: The trial has already generated economic and social benefits by creating new roles for nurses and doctors and strengthening links between primary, secondary, and tertiary care. These collaborations enhance healthcare infrastructure and foster enduring partnerships across hospital and community settings.

2) Future Impact: If OM-85 proves effective, the benefits will be seen in multiple areas:

- Health and Wellbeing: Reduced hospitalisations for preschool wheeze will improve outcomes for vulnerable children.
- Economic Impact: Preventing repeated hospital admissions for preschool-aged children leads to lower healthcare costs.
- Environmental Benefits: Reduced reliance on metered-dose inhalers containing hydrofluoroalkane propellants will help alleviate the harmful environmental impact of these propellants on the atmosphere.
- Vision Mātauranga: Fostering partnerships with Māori communities impacted by preschool wheeze has been a project cornerstone. Community Hauora and well-being remain central to our strategy.

Looking ahead, ARROW enters its follow-up and data analysis phase in 2026–2027, with findings expected to inform national and international guidelines. This project stands as a model of science excellence, equity, and sustainability—delivering health, economic, and environmental benefits while honouring Māori partnerships and community priorities.