Barriers and solutions to trainee-led research collaboratives in New Zealand

STRATA Collaborative

ABSTRACT

This article seeks to describe our experience enabling large-scale collaborative studies within trainee-led surgical research networks, to highlight systemic barriers to the use of this methodology and to propose solutions that will facilitate trainee-led collaborative research in New Zealand.

The New Zealand Government's Health Research Strategy 2017–2027 aims to create a "vibrant research environment in the health sector" guided by the principles of research excellence, transparency, partnership with Māori and collaboration.[1] This strategy presents a valuable opportunity for us to determine the values and principles that guide collaborative clinical research in New Zealand.

Our experience enabling large-scale surgical studies within trainee-led networks has revealed several systemic barriers to research. What are these barriers and how do we get through them?

Trainee-led collaborative research networks

Trainee-led collaborative research networks are made up of teams of data-collectors, supported by supervisors, national leads and a steering committee. The collaborators range in clinical seniority from medical students to consultants. By working together, novice researchers can access expert mentorship and deliver high-quality research outputs while gaining research expertise, all within the time constraints of combining research with clinical work.[2]

The success of the networks is underpinned by their flat authorship model that encourages contribution from all collaborators and delivers equal recognition to each. This approach recognises that modern research is a team-based endeavour.

The specific trainee-led model of surgical research networks discussed in this article was first developed in the UK in 2007. Adoption of the model was rapid and widespread, such that 238/241 (99%) of the UK's gastrointestinal (GI) surgery centres had been involved in trainee-led collaborative studies by 2017.[3] As well as facilitating collaboration and patient participation, trainee-led collaborative networks in the UK have delivered high-quality, large-volume and practice-changing observational and interventional studies.[4,5]

To support the development and conduct of such collaborative trials and establish trainee-led networks in our region, the Royal Australasian College of Surgeons formed the Clinical Trials Network Australia and New Zealand (CTANZ).

In New Zealand, the Surgical Trainee Research Audit and Trials Aotearoa (STRATA) network successfully designed and enabled the Rural and Urban Risks of Appendicitis Complications (RURAL) study, a prospective multi-centre observational study of outcomes in paediatric appendicitis, and the Rib Fractures in Blunt Thoracic Trauma: New Zealand Management and Outcomes (RiBZ) study, a prospective multi-centre observational study of outcomes in isolated thoracic trauma. We are now designing the next nationwide cohort study to investigate outcomes after cholecystectomy.

New Zealand trainees have also made significant contributions to large international collaborative studies, such as REspiratory COmplications after abdomiNal surgery (RECON),[6] Ileus Management International (IMAGINE),[7] GlobalSurg-CovidSurg Week, and an audit of management of acute CHOLEcystitis during the COVID-19 pandemic (CHOLECOVID).

GlobalSurg-CovidSurg Week was a prospective cohort study that investigated the excess post-operative mortality and morbidity in patients with COVID-19. It is the largest prospective surgical study ever undertaken, with 14,000 collaborators including 99 New Zealanders and over 150,000 patients from 122 countries. The resulting papers have been published in high-impact journals and widely published in the local and international media.[8,9]

By collaborating in national and international cohort studies, New Zealand trainees gained valuable research skills and experience. During this early period of New Zealand's involvement in collaborative research, development of the governance and management structures that underpin the STRATA network has been ongoing and, like the UK networks, the ambition has been to develop and conduct home-grown national and international studies.

National barriers

Clinical studies in New Zealand require national ethical approval and locality approval from the individual district health boards (DHBs) they take place in. We are fortunate to have the New Zealand Health and Disability Ethics Committees (HDEC) that provide a national process ensuring proposed research meets established ethical standards.[10,11] Studies deemed ineligible for HDEC oversight, for example because they are classified as an audit activity, receive ethical review from regional committees. The National Ethics Advisory Board (NEAC) also offers several other pathways for ethical review, like the University of Otago Ethics Committee (Health), which reviews studies deemed "out of scope" by the HDEC.

But this multitude of non-centralised pathways that similar studies may go through, and the diverse national standards, may result in inconsistent reviews and conflicting requirements of study protocols.

This is exemplified by significant variations in the outcomes of the ethics review process. Some methodically similar observational studies that involve New Zealanders have been reviewed and approved by HDEC and others have been deemed out of scope by HDEC. This suggests there are potential inconsistencies in the application of a common ethical framework.

A consistent approach to the ethical assessment of observational studies would streamline study development, reduce the administrative burden for individual trials and increase skills-transfers (eg, in protocol development) between one generation of trainees and the next. We should be building-up New Zealand's national research capacity while still upholding the highest ethical standards.

We recognise the importance of consulting with the local Māori research committees at each DHB in which each study is conducted. Personally we have found this review process invaluable. But the processes and systems that facilitate this consultation vary widely across the country. Often they are under-resourced, and in some regions it is a barrier to effective consultation and implementation of locality-specific values. We believe that improving support, such as allocating more resources, for local iwi and the systems facilitating consultation would reduce this barrier to research participation in some regions.

Local barriers

We have found the application process for locality approval varies widely. Some DHBs use electronic pathways and others required paper forms. Similar variance exists in the user-friendliness of approval processes, with most systems being streamlined and transparent but others being opaque and difficult to navigate. Our concern is that this means some regions may be more likely to be included in projects than others, creating differential inclusion and representation of participants according to geography and funding. This may perpetuate inequity because those living in certain, particularly rural, districts may be less likely to participate in research or have a voice in the design of projects.

With the dissolution of DHBs due to occur in 2022, we have a unique opportunity to

develop a single system for the application and assessment of locality ethics approvals.

Targeting inequity

Research has traditionally been centred around academic institutions. In contrast, collaborative networks can breakdown historical barriers to research participation by including communities, clinicians and institutions nationwide. Importantly, research questions and study leadership could originate anywhere within a network unshackled from the traditional restraints of geography and hierarchy.

The New Zealand Health Research Strategy acknowledges the health inequity suffered by Māori and prioritises the Treaty of Waitangi's principles of partnership, participation and protection. Collaborative research networks represent a powerful mechanism through which Māori leadership in health research can emerge, like from among our medical student and trainee collaborators. Engagement with Māori health stakeholders is essential for identifying and answering pertinent research questions.

Research support

Large studies, particularly interventional studies, require support services including staff, facilities and equipment. The success of collaborative research networks in the UK was underpinned by stable funding for support services via the National Institute of Health Research (NIHR) Clinical Research Network.[12] This contrasts starkly against the episodic project-based funding currently available in New Zealand. It is critical that the funding review taking place as part of the New Zealand Health Research Strategy prioritises the establishment of stable research infrastructure. This may take shape in the form of distributed funding for research support staff, facilities and equipment.

Another way to support research is by funding Academic House Officer and Research Registrar positions similar to the Academic Foundation Positions in the UK. Ultimately, prioritising research at the local level can facilitate trainee-led collaborative networks, but sustained national funding would optimise the opportunity for New Zealand to drive the surgical research narrative through leadership of local, regional and global studies.

Trainee-led collaboratives are emerging in New Zealand, and there is an eager population of trainees with the willingness and capacity to deliver high-quality research. They offer a unique opportunity to build research capacity through the transfer of research skills and to begin addressing health inequities. New Zealand must be responsive to this changing research environment and leverage collaborative networks by supporting their development and facilitating their endeavours.

Conclusion

Here we present several challenges faced by collaborative networks in New Zealand. The key requirements include distributed research funding and development of consistent locality assessment processes. Research should be a core tenet of all DHBs, and engagement with Māori, rural and socioeconomically deprived communities must be prioritised.

Competing interests:
The authors CV and BE are members of the Surgical Trainee Research, Audit, and Trials Aotearoa (STRATA) Steering Group, and DW is a member of the STRATA Advisory Committee.

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www.nzma.org.nz/journal-articles/barriers-and-solutions-to-trainee-led-research-collaboratives-in-new-zealand

REFERENCES

1. Ministry of Business, Innovation and Employment and Ministry of Health [Internet]. New Zealand Health Research Strategy 2017-2027. Available from: https://www.health.govt.nz/system/files/documents/publications/nz-health-research-strategy-jun17.pdf
2. Collaborative HS, et al. Trainee- and student-led research networks: promoting research skills and competency through collaboration. ANZ Journal of Surgery. 2020; 90:2177-79.
3. Nepogodiev D, et al. The effect of trainee research collaboratives in the UK. Lancet Gastroenterol Hepatol. 2017;2: 247-8.
4. COVIDSurg Collaborative. Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study. Lancet. 2020; 396:27-38.
5. Nepogodiev D, et al. Appendicitis risk prediction models in children presenting with right iliac fossa pain (RIFT study): a prospective, multicentre validation study. The Lancet Child & Adolescent Health. 2020;4:271-80.
6. STARSurg Collaborative. Electronic address: collaborate@starsurg.org & STARSurg Collaborative. REspiratory COmplications after abdomiNal surgery (RECON): study protocol for a multi-centre, observational, prospective, international audit of postoperative pulmonary complications after major abdominal surgery. British journal of anaesthesia. 2020;124:e13–e16.
7. Collaborative E, et al. Ileus Management International (IMAGINE): protocol for a multicentre, observational study of ileus after colorectal surgery. Colorectal Dis. 2018;20:O17-O25.
8. COVIDSurg Collaborative, GlobalSurg Collaborative. SARS-CoV-2 vaccination modelling for safe surgery to save lives: data from an international prospective cohort study. Br. J. Surg. 2021. doi:10.1093/bjs/znab101
9. COVIDSurg Collaborative & GlobalSurg Collaborative. Timing of surgery following SARS-CoV-2 infection: an international prospective cohort study. Anaesthesia. 2021. doi:10.1111/anae.15458
10. New Zealand Legislation [Internet]. New Zealand Public Health and Disability Act 2000. http://legislation.govt.nz/act/public/2000/0091/latest/DLM80493.html
11. National Ethics Advisory Committee – Kāhui Matatika o te Motu [Internet]. National Ethical Standards for Health and Disability Research and Quality Improvement. Available from: https://neac.health.govt.nz/node/107
12. National Institute for Health Research [Internet]. Clinical Research Network. Available from: https://www.nihr.ac.uk/explore-nihr/support/clinical-research-network.htm