

Medical specialist immersion learning in genomics

Background

The Melbourne Genomics Health Alliance members are at the forefront of introducing genomics into diagnostic laboratory and clinical practice. From the outset it was clear there was an immediate need to instil literacy, skills and confidence in using genomics among medical professionals, particularly those without genetics training.

In emerging fields, practical experience provides an important way of building expertise; hands-on practice was needed to shepherd the use of genomic testing into healthcare. Peer-to-peer learning is also important; thus a 'genomic expert' within a medical speciality can be a key resource to drive the appropriate use of genomics by their colleagues.

Publication

"It's something I've committed to longer term': The impact of an immersion program for physicians on adoption of genomic medicine", Melissa Martyn, Belinda McClaren, Monika Janinski, Elly Lynch, Fiona Cunningham and Clara Gaff, Patient Education and Counselling (2020)

<https://doi.org/10.1016/j.pec.2020.10.013>

Project description and activities

The objective: to catalyse the development of 'genomic experts' within a variety of specialities by providing medical specialists with opportunities to gain hands-on experience in genomics as relevant to their practice.

Specialists were selected by their employing hospital to undertake immersion in genomics through clinical, laboratory or research experience for six months full-time (or equivalent). Hospital-led selection ensured that the individual, their discipline and immersion project met the specific priorities of that hospital. The selection process differed between hospitals.

Between 2017 and 2019, 12 specialists completed immersion projects – either in Melbourne or abroad – focusing on clinical, laboratory, education or knowledge translation aspects of genomic medicine.

The program was evaluated using pre-and post-interviews with trainees and supervisors.

Outcomes

Twelve medical professionals across diverse specialities completed a period of immersion in genomics:

- Aaron Wong* (Palliative care and Oncology, The Royal Melbourne Hospital)
- Carly Hughes (Infectious diseases, Monash Health)
- Daryl Williams* (Anaesthesia, The Royal Melbourne Hospital / The University of Melbourne)
- David Tran* (General medicine and Immunology, WEHI)
- Edward Chew (Haematology, Peter MacCallum Cancer Centre)
- Jason Trubiano (Infectious diseases, Austin Health)
- Jonathan Clark (Medical pathology, Austin Health)
- Joshua Casan (Haematology, Monash Health)

- Mei Lung (Oncology, Peter MacCallum Cancer Centre)
- Richard Leventer (Neurology, The Royal Children's Hospital)
- Simon Chatfield* (Rheumatology, The Royal Melbourne Hospital)
- Zoe MacCallum (Paediatrics, The Royal Children's Hospital)

* four clinicians shared the two RMH positions

This project enhanced the genomic literacy of medical professionals across the Melbourne Genomics Health Alliance. All participants reported gaining knowledge and confidence. Where relevant, their experiences increased their awareness of test ordering processes, managing genomic cases, or interpreting genomic tests.

Participants gained an appreciation of the complexity of genomics and how this may be a barrier to implementation in mainstream healthcare.

Immersion projects enabled medical specialists to establish and/or strengthen their networks. As intended, participants shared their acquired genomic expertise with colleagues, helping coordinate genomic testing and 'leading' genomics in their discipline.

Access to genomic testing for patients improved as a result of changes in practice arising from greater confidence and increased awareness of genomic test providers.

Impact

- This immersion learning model has been adopted at the Melbourne Children's Campus (The Royal Children's Hospital and the Murdoch Children's Research Institute), with six-month fellowships available at Victorian Clinical Genetics Services, funded by the RCH Foundation.
- Continuing education of non-genetic medical professionals has been improved, based on immersion participants' insights into the trajectory of their learning (see separate project summary, Workforce development: 'Genomics in the clinic' workshops).
- Many participants continue to serve as intermediaries between their specialties and genetic testing and clinical services.

Lessons learnt

- Foundational genomics knowledge is necessary to optimise learning from an immersion experience. Some specialists felt they lacked adequate knowledge at the commencement of their immersion.
- The amount of time per week dedicated to immersion influenced outcomes, particularly for those who maintained a clinical load in parallel. Blocks of at least two days a week of dedicated time were more effective than the equivalent time spread over a week.
- Immersion should only commence once a clear plan and structured supervision are in place. The availability of project options, and resources describing key roles and services, would enable a more effective immersion experience.