

A retrospective review of primary care research projects completed by medical students at University of New South Wales Medicine

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Background and objective

It is important for medical students to learn how to conduct sound medical research by implementing their own research projects. This study describes the primary care research projects conducted by fourth-year medical students for their Independent Learning Project/Honours (ILP/Honours) at University of New South Wales (UNSW) Medicine.

Methods

A review was conducted of research projects undertaken by medical students at UNSW to determine the number and themes of projects on primary care topics, and the departments that supervised these projects.

Results

Of 3116 student research projects, 482 (15.5%) were on primary care topics. Major themes were mental health and substance abuse (90; 18.7%), aged care issues (67; 13.7%), common chronic diseases (63; 13.1%), and issues facing Aboriginal and Torres Strait Islander people or people from culturally and linguistically diverse communities (59; 12.2%). Only 134 (4.3% of the total 3116) research projects were supervised through departments with primary care academics.

Discussion

The ILP/Honours program gives medical students at UNSW Medicine an opportunity to conduct research on primary care topics. There needs to be more attention given to growing the research capacity of primary care academic departments.

IN AUSTRALIA AND INTERNATIONALLY, MEDICAL SCHOOLS are increasingly integrating the teaching of research skills into the curriculum by providing opportunities to design and implement student independent research projects. The Australian Medical Council requires that medical graduates should, as part of their scholarly capability, be able to appraise evidence from the literature, formulate research questions, select study designs and generate new medical knowledge.¹ The Association for Medical Education in Europe (AMEE) guideline suggests that ‘... medical students need to be made aware that research is an important part of scholarship and professional practice’.² With figures from the Bettering the Evaluation and Care of Health (BEACH) database for 2015–16 showing that nearly 87% of Australians visited a general practitioner (GP) at least once in that year,³ and with primary care being the gateway to medical services, exposure to research on primary care topics should be a high priority for students at Australian medical schools.

There is a need to promote primary care research to provide evidence on best clinical practice and health service delivery in the setting of general practice – the cornerstone of primary healthcare, and particularly primary medical care delivery, in Australia.^{4,5} The support needed includes sustained maintenance of primary care databases, research networks and primary care research funding and, critically, the development of primary care researchers.^{6,7} A recent analysis of primary care research internationally has shown that between 1974 and 2017 there was an increase of over 1000% in publications of primary care research in Australia as well as in two regions in Europe. This very encouraging increase has been ascribed to a number of factors, including recognition of the importance of primary care in healthcare networks and universities, increases in training and funding of primary care researchers, and the establishment of data collection networks.⁸ One of the key aspects that has been described to develop physician researchers is to involve medical students in research projects during their degree, and there are data to suggest that research in a particular field does influence students’ subsequent career pathways.^{9–12} However, there has been little focus on the potential to encourage students to pursue a career in primary care research by involving them in primary care research projects during their studies. One recent

report from Johns Hopkins Medical School does describe the incorporation of a longitudinal primary care research project as part of curriculum reform aimed at training primary care leaders in the university's medical program.¹³

The University of New South Wales (UNSW) Medicine course is a six-year undergraduate program organised into three phases. Phase 1 comprises two years of scenario-based learning on campus; Phase 2 comprises practice-based learning integrated across campus, clinical placements in Year 3 and an Independent Learning Project/Honours (ILP/Honours) program in Year 4; and Phase 3 comprises independent reflective learning based in different clinical placements.¹⁴ The ILP/Honours independent research program in Year 4 is unique among Australian medical schools. It is a nine-month module, dedicated primarily to the research project, requiring all students in Year 4 to design and implement their own research project supervised by experienced mentors. This program is aligned with recommendations from AMEE that medical students should conduct an independent research program with the support of experienced supervisors.²

The aim of this study was to review the topics of student research projects conducted during the ILP/Honours year from 2006 to 2019 inclusive at UNSW Medicine, and answer the following questions:

- What percentage of the ILP/Honours projects were on primary care research topics?
- What were the major themes explored in these projects?
- Which schools and departments had supervised students conducting research on primary care topics?

Methods

The study was a retrospective review of all research projects conducted by medical students in the undergraduate program at UNSW as part of their ILP/Honours program from 2006 – the year the program began – up to and including 2019. Data on the topic of the project, the year it was conducted and the

department in which it was conducted were drawn from the Faculty of Medicine ILP/Honours database. Student and supervisor names were removed before the researchers accessed the data. This study received ethics approval from the UNSW Human Research Ethics Advisory Panel (HC190182).

The criteria used for selecting topics as primary care were broad and based on the Australian Government Department of Health's definition of primary care as:¹⁵

... the full range of health care services that are provided in the home and community setting. This includes health promotion, prevention and screening, early intervention, treatment, support for independent living, management of chronic health conditions, such as diabetes, mental illness, and cancer, and lifestyle factors including obesity, smoking, and diet. It also recognises the needs of specific population groups, including: parents and children, young people, older people, people living in rural and remote areas, Aboriginal and Torres Strait Islander people, people of lower social or economic circumstances, refugees and people from culturally and linguistically diverse backgrounds.

The research team consisting of a primary care physician (KU), a medical educationalist (MPI) and a Professor in Primary Care (JH) used this broad definition of primary care to review all ILP/Honours student research project topics from 2006 up to and including 2019. In the initial review, two members of the research team (KU and MPI) independently reviewed the topics of all the research projects and compiled a list of all projects they had identified as being primary care research topics. All projects identified as having primary care research topics by both researchers were then selected. Where there was a discrepancy with projects being identified as having a primary care research topic by only one of the two researchers, the third member of the research team (JH) reviewed these project topics and made the final decision on whether the topic was a primary care research topic and

should be selected. On review there was agreement by all members on the final list of projects selected as being primary care research topics. All the titles of the projects selected as primary care research topics were then scrutinised and classified under broad themes by the researchers, again using the above definition of primary care. A descriptive analysis of the final list of projects identified as having primary care research topics was undertaken to answer the research questions.

Results

A total of 3149 students completed a research project during their ILP/Honours year in the study period. Data for 2008 were incomplete in that the topics and departments for all 33 students who completed Honours were missing, leaving 3116 projects in the study.

Of the 3116 projects, 482 (15.5%) were on primary care research topics. In the first round of evaluation, the two researchers agreed that 441 projects were on primary care research topics and a further 84 projects were identified as primary care research topics by only one of the two researchers. In the second round of evaluation, the third member of the research team agreed that 41 out of these 84 were on primary care research topics, reaching a final total of 482 projects on primary care research topics.

Of the 482 primary care research topics selected, the four most common themes were mental health and/or substance abuse (90, 18.7%), aged care (67; 13.9%), common chronic diseases (63, 13.1%) and health issues facing Aboriginal and Torres Strait Islander people or people from culturally and linguistically diverse communities (59; 12.2%; Table 1). Some examples of the topics included in the four most common themes are given in Table 2.

Supervisors of these student research projects came from a wide range of UNSW medical school and external departments (Table 3). The largest group were from the five Sydney clinical schools (SCSs) with 211 (43.8%). The next three departments with substantial contribution to supervision were the School of Public Health and Community Medicine

(SPHCM) with 69 (14.3%), the five rural clinical schools (RCSs) with 37 (7.7%) and the Centre for Primary Health Care and Equity (CPHCE) with 20 (4.1%). Of note was the contribution of community-based primary care groups in the local Primary Health Network General Practitioners (PHN GP) group with eight topics (1.7%). The following are examples of primary care research projects from each of these groups:

- ‘Patient perceived treatment burden of COPD [chronic obstructive pulmonary disease]’ (SCSs)
- ‘Experiences of rural pathway general practitioner registrars of advance care planning in NSW’ (SPHCM)
- ‘Rates of infectious disease in refugees settled in rural areas’ (RCS)
- ‘Health literacy and access to health services for recently arrived refugees’ (CPHCE)

- ‘Treating comorbid depression and nicotine dependence in primary care: Providing effective preventive care to patients with low levels of health literacy in primary care settings’ (PNH GP)

There were 134 primary care research projects supervised by the four departments with substantial numbers of primary care academics (SPHCM, RCS, CPHCE and PHN GP group). These 134 represent 27.8% of the total 482 primary care research projects, but only 4.3% of all 3116 student research projects.

Discussion

Involving medical students in research has been identified as a priority by the Australian Medical Council and international medical education associations. This study was able to

describe the involvement of medical students in primary care research at UNSW during their ILP/Honours research program, quantify the percentage of primary care research topics, and identify the major themes of the topics and the departments conducting research in primary care topics.

The study shows that the ILP/Honours program at UNSW between 2006 and 2019 has provided a viable platform for medical student involvement in primary care research projects in Australia, with 15.5% of research topics in this program being primary care research topics. This is an encouraging finding confirming that a structured research program in the medical curriculum can provide a supportive network to promote primary care research. Of the primary care research studies conducted, the two most common themes addressed were mental health and substance abuse, and issues in aged care. These issues are very pertinent for primary care in Australia. In 2019, mental health problems were reported by GPs to be the most common ailments they deal with in general practice, and that mental health and aged care are two of the top four issues in healthcare provision that GPs are concerned about in Australia.¹⁶ The four most common themes identified were also high on the lists of research priorities in primary care identified by GP researchers in a recent Australian survey.³

The data available for this study did not allow us to identify whether individual supervisors were primary care academics. However, what is of concern in the findings is the relatively low number of primary care research projects that are being supervised by departments known to have substantial numbers of primary care academics. The largest percentage of primary care research projects (43.8%) were being supervised by academics from SCSs. There are no departments of primary care in the urban teaching hospitals attached to UNSW Medicine. As it was not possible to access data on the methodology of these research projects, it was also not possible to ascertain whether the research project investigated the provision of care in a primary care setting or a hospital setting.

Table 1. Summary of the main themes of University of New South Wales Independent Learning Project/Honours students conducting a research project on a primary care topic during the period 2006–19

Themes	Number	Percentage of total (n = 482)
Mental health and substance abuse	90	18.7
Aged care	67	13.9
Common chronic diseases	63	13.1
Aboriginal and Torres Strait Islander and culturally and linguistically diverse communities	59	12.2
Child health	33	6.8
Vaccination	31	6.4
Health services	26	5.4
Adolescent health	25	5.2
Cancer care	22	4.6
Sexual health	21	4.4
Emergency care	16	3.3
Lifestyle	12	2.5
Prisoner health	10	2.1
Eye health	5	1.0
Medical education	2	0.4

There is a need to conduct primary care research in primary care settings to find evidence of best practice in primary care settings.^{4,5} The four departments where there are substantial numbers of primary care academics were supervising 27.8% of the 482 primary care projects,

but this was only 4.3% of the total of 3116 projects. These four departments were the SPHCM (14.3%), where the medical undergraduate primary care academics are based; the CPHCE (4.1%), a dedicated primary care research centre; the RCSs (7.7%), which do have

a substantial number of primary care academics; and the PHN GP group (1.7%), which is a group of primary care physicians in the community involved in a primary care research network. Australia needs a vibrant primary care research community conducting research to deliver best practice patient care in primary care settings.^{5,17} Increasing the number of medical students conducting primary care research in primary care settings is an important strategy to develop primary care researchers. To do this, primary care research conducted by primary care academics needs to be very visible to medical students as an option for the research component of their undergraduate curriculum. There is an ongoing need to build strong primary care academic departments⁴ and to establish and support vibrant sustainable primary care research networks of general practices in the community in Australia.¹⁸

The strength of this study is that it reviews all the research studies conducted by medical students over 14 years since the inception of the ILP/Honours project at UNSW Medicine. There are several limitations to this study. There are data

Table 2. Examples of primary care research topics for the four most common themes

Theme	Examples of student research project topics
Mental health and substance abuse	<ul style="list-style-type: none"> • 'Understanding the effectiveness of suicide prevention training for healthcare professionals' • 'Patient acceptability and attitudes to receiving alcohol use enquiry from general practitioners'
Aged care	<ul style="list-style-type: none"> • 'Experiences of rural pathway general practitioner registrars of advance care planning (ACP) in NSW' • 'Quality use of medications in nursing homes'
Common chronic diseases	<ul style="list-style-type: none"> • 'Driving and epilepsy: Attitudes, behaviour and risk' • 'Development and pilot testing of an algorithm for primary care in diabetes management'
Aboriginal and Torres Strait Islander and culturally and linguistically diverse communities	<ul style="list-style-type: none"> • 'Exploring beliefs about hereditary depression amongst Chinese-Australians' • 'Comprehensive primary health care for Indigenous offenders from Aboriginal and Torres Strait Islander Community Controlled Health Organisations'

Table 3. University of New South Wales (UNSW) medical school departments supervising Independent Learning Project/Honours students conducting a research project on a primary care topic during the period 2006-19

Department	Number of primary care topics	Percentage of all primary care topics (n = 482)	Percentage of total topics (n = 3116)
Sydney clinical schools	211	43.8	6.8
School of Public Health and Community Medicine	69	14.3	2.2
Rural clinical schools	37	7.7	1.2
Centre for Primary Health Care and Equity	20	4.1	0.6
Kirby Institute	19	3.9	0.6
Black Dog Institute	16	3.3	0.5
National Drug and Alcohol Research Centre	15	3.1	0.5
School of Medical Sciences	12	2.5	0.4
Dementia Collaborative Research Centre UNSW	12	2.5	0.4
Primary Health Network General Practitioners group	8	1.7	0.3
Neurosciences Research Australia	8	1.7	0.3
Sexual health centres	5	1.0	0.2
Other	50	10.4	1.6

missing for 33 students in 2008, but this gap is unlikely to influence the present findings. The identification of primary care projects and the themes was based on the opinion of the researchers. To overcome this response bias, a systematic approach of independent assessment was used by the researchers. All discrepancies identified were discussed and the final topic list was confirmed by all members of the research team. The decisions of the researchers regarding which projects were selected as primary care research topics and which broad theme they addressed were based only on the topic registered in the database, and there was no data on methodology. It is therefore possible that the selection of topics and classification of broad themes may have been inaccurate. The researchers also had no access to the names of supervisors within these departments, so there was no way to confirm whether the supervisor from that department was a primary care academic or not.

Conclusion

The ILP/Honours program at UNSW Medicine provides opportunities for students to conduct research on primary care topics. Encouraging student involvement in primary care research projects conducted in primary care settings and supervised by primary care academics is one strategy that could encourage the development of more primary care researchers. Further research is needed to document research outputs of student primary care research projects.

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