

RESEARCH DIRECTIONS

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INTRODUCTION

The potential in clinical research in family medicine is enormous as not enough is known about the common day-to-day problems, which occur outside the hospital. Chronic diseases such as diabetes mellitus, hypertension, hyperlipidaemia and asthma are fertile ground for research for the local family physicians. In fact, the scope for primary care research is wide, ranging from basic and clinical studies to health service and health system evaluation.

A paradigm shift through the initiation of regular research meetings, training, infrastructural support and a collaborative research network development to optimize time and resources, is the way ahead. The establishment of a sound primary care research culture not only confers benefits to the medical profession at all levels but enhance the quality of healthcare for all citizens in Singapore.

Primary care research has benefits. For the family physicians, research enhances the capacity to think logically and precisely so as to determine the roots of the problem and seek the pathways to all the possible solutions. This allows the family physicians to reflect on the problems in their practice and be critical on the deception and fallacies that occasionally exist in medical literature and publicity blitz by pharmaceutical companies. For health organizations, research is the foundation for continuous improvement in the content and delivery of quality health care service to their respective community.

THE STATE OF PRIMARY CARE RESEARCH IN SINGAPORE

More needs to be done

Family physician-initiated studies in Singapore have mainly been small scale, ad-hoc in nature, self-funded and published in local medical journals. The College of Family Physicians, Singapore has been the body instrumental in stimulating family medicine research. An annotated review by Chong¹ showed that from 1971 up to 1987, general practitioners produced a total of 56 papers. Some of these were personal reflections. Some of the bigger studies done and reported in the Singapore Family Physician were that on causes of death, housecalls, diabetic care and the clinic consultation pattern in the practice, and two one-day morbidity studies (Emanuel et al^{2, 3}).

Studies related to family medicine and reported in indexed journals so far have all been from University academics. They cover the subjects of bronchial asthma, diabetes and complications, consultation fees, diet and obesity. Together they totalled less than 50.

The quantity of family medicine research to-date indeed shows a paucity. The scope for family medicine research is therefore wide open for researchers interested in this field.

Mindset and training

The advent of biomedical techniques and progressive sophistication of the basic sciences led to a shift of such observation to the hospitals and laboratory settings. This is translated into a belief that research is the exclusive domain of the research scientists in tertiary institutions. This impression is still prevalent amongst family physicians and needs to be rectified.

The quest for the truth requires an inquisitive mind and personal attributes of persistence,

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curiosity and systematic thinking. Exposure and training are also important. Fortunately, the didactic education system in Singapore is fast undergoing change to a more problem based and discovery learning approach. The SSM (special study modules), UROP (Undergraduate research opportunities programme) provide opportunities for students to exercise organized curiosity, the synonym for research.

THE PRIMARY CARE RESEARCH AGENDA

Scope of primary care research

Primary care research has been categorized and well summarized by Starfield⁴ as to be of four types: basic, clinical, health service and health system. Basic research addresses the development of methods to study subjects relevant to primary care services, regardless of whether they deal with a clinical problem or a characteristic of service delivery. Clinical research involves issues relevant to the processes of delivering services, including recognition of people's problems, diagnostic approaches, and types of therapy and their outcomes. Health services research concerns the relationships associated with the organization, financing and their impact on the processes and outcome of care. Health system research focuses on understanding how the economic, political, and social milieu influence the structures and processes of the health service system, with specific relevance to its primary care infrastructure.

Common day-to-day problems

The fertile ground to start primary care research is in clinical research in the practice. Not enough is known about the common day-to-day problems which occur outside the hospital. Studies conducted in such settings worldwide tend to be small, diffuse and inconclusive.

Take diabetes care for instance. Out of 1200 studies, only 5 could be grouped together in a meta-analysis by Simon Griffiths⁵. The UKPDS has of course given the world, some concrete answers like 1% reduction in HbA1c will result in a drop of 25% of cardiovascular sequelae. It is only as recent as 1997 that conclusive answers on upper respiratory tract infections were provided by Little⁶ and his associates in UK.

Croughan-Minihane⁷ in their survey of 120 GPs from the UCSF (University of California in San Francisco) Collaborative Research Network and another 85 at Stanford Ambulatory Research Network, the most common topics of interests were disease prevention, communication and compliance, and managed care. Among specific conditions, heart disease, hypertension and respiratory infection were of interests to the majority of the respondents. Chronic diseases such as diabetes mellitus, hypertension, ischaemic heart disease, hyperlipidaemia and asthma should stimulate research interests amongst family physicians in Singapore as these conditions are prevalent in the local population.

Whilst small studies are a start, the pooling of cases together is the way ahead. Only then will there be large enough numbers to give conclusive answers. This speaks for research networks. There is scope for large studies into other common conditions to find conclusive answers in the local setting. The search for the answers to these problems, in the context of their practice, will not only develop new knowledge but also bring benefits for the patients, the other family physicians, the community and the medical profession.

Health system perspectives

The organization of Singapore into two clusters, the experimentation of managed care and the rising

costs of care spawn many primary care research questions from a health system perspective, as for example “what works” in terms of clinical effectiveness within the various components of health care.

THE WAY AHEAD

The way ahead lies in the simultaneous deployment of the strategies of mindset change through regular research meetings, training, infrastructure support, and a collaborative research network development.

Training

It is a sad fact that even with liberal doses of curiosity, an interesting issue and enough time and money, many good research ideas fail to reach the stage of a completed project. We can learn from the Royal Australian College of General Practitioners, which provides the new GP researcher with guidelines on asking the right question, choosing the best method and getting results published. Research in primary care should be made more accessible by “demystifying the jargon, clarifying the statistics and explaining the rules of publication”⁸.

The change of the medical curriculum at the faculty of medicine at the local university towards patient centered, evidence-based approach in problem solving is a step forward towards building a research-friendly environment. Original creative and collateral thinking, together with inductive reasoning should be encouraged in the medical schools. Emphasis should be geared towards clinical observation and investigation, hypothesis testing and critical thinking.

For the medical students with a predilection for family medicine, early involvement in medical school will enrich their experience. They need to be identified and opportunities should be made

available for immersion in research projects during their long vacation. At this stage, effectual tutorship to steer them on the right course of research needs to be strengthened. Hueston⁹ reported that for community-based family physicians, success at conducting and publishing research is enhanced by the availability of mentorship and previous research experience during the undergraduate period.

The momentum should carry forward to postgraduate training. Medical officers especially Family Medicine (FM) trainees, in their posting to the polyclinics or school health service, should be robed in to participate in community studies. Hands-on experience will be the most cost-effective modality to acquire research skills. Refresher courses on epidemiological and statistical methods and updates on statistical computing can be incorporated in their traineeship module or in the continuous medical education (CME) program for non-trainees. FM trainers who have completed their advance training or achieved higher degrees will serve as research mentors for the novice trainees and act as team leaders in research projects.

The Department of COFM in the university and Clinical Trials & Epidemiological Research Unit (CTERU) of the Ministry of Health can be targeted to be research-training ground for family physicians. Lecturers and trained epidemiologists and statisticians can work hand-in-hand to organize and co-ordinate user-friendly training program for the busy family physicians. On-line and distant learning are pragmatic considerations in the near future. Merit points should be rewarded and included in the current on-line CME program.

Mindset change through regular meetings

It is important that, family physicians who have indulged in research, should often and aptly

rewarded with opportunities to present their findings at local, regional or international meetings and conferences. They should lead the way by infecting their colleagues on the value of being involved in primary care research.

Infrastructure

Many studies show that research is not every family physician's cup of tea. There are personal traits, which enable the family physicians to take up research and are succinctly summarized by Dr Curtis¹⁰ (Table 1). It is rare to find an amalgamation of all these attributes in a single family physician. The solution lies in developing a collaborative research network.

Collaborations with other family physicians and nurses and working in teams can overcome this shortcoming. Littlewood¹¹ in a survey of all GPs in an inner city area in UK showed that 61% of GPs carried out research in collaboration with nurses. Nonetheless, it is vital to recognize the above attributes of the co-investigators so that each member play a complementary role to ensure efficiency and competency in the execution of research projects.

The establishment of practice-based research network is a logical development of collaborative research projects by family physicians. This has been done in many of the developed countries e.g. UK. (Thomas P et al¹² 2001) and in the US (Nutting¹³ 1996). Collaborative research by family

physicians is "practical, feasible, personally and professionally rewarding, and likely to contribute important primary care knowledge"¹⁴.

Identification of network physicians' interest can help in focused research, minimize duplication of efforts, optimize resource utilization and facilitate funding application. This allows the pooling of resources and works on a larger patient population base; a critical mass of researchers can be assembled to take on larger, more intensive research projects. In Singapore, a practice-based research network can be created through collaborations between the two clusters of polyclinics and the larger GP groups. Individual family physicians can overcome the constraints of size by working hand-in-hand with the research committee of the College of Family Physicians (CFPS). The GP groups must recognize the importance of research to primary care and elevate its priority status in the organization. As a service to the community, the groups need to motivate their doctors to undertake research as part of their continuous professional development, thus philosophically and physically commit themselves to research.

The research "laboratory" for family practice will be located in three areas:

- 1. University medical school setting where resources, teaching and inter-disciplinary activities are conducted.
- 2. Clinical trials epidemiological resource center (CTERU) and the research committees of the polyclinics and GP groups where there is a congregation of trained personals, specialists and experienced staff to facilitate research.
- 3. Ambulatory "practices" involving healthy and unwell people in their homes, communities and workplaces.

Table 1. Desired Personal Traits of Researchers

Research activity	Individual Main Attributes
Data collection	Compulsive – cooperative
Data coordination	Compulsive – organized
Data Analysis/interpretation	Compulsive, mathematical, clarity of thought
Study design	Compulsive, curious, conceptualize
Distribution of ideas and concepts	Persistence, enthusiasm, writing and speaking skills
Generation of ideas	Curious, creative, lateral thinking
Development of original concepts	Clarity of thought, creativity, genius?

Source: Curtis P, 2000 (Reference 16)

Training courses and manuals are also part of the infrastructure. Course manuals and notes should be written and updated with good and not so good examples of primary care research.

Ethics

A joint ethics committee between the Department of COFM and CFPS should be set up to safeguard the interests and safety of human subjects in family physician-initiated studies. Being a small island, it makes sense to establish a single centralized ethics committee to cater to these needs.

Thus, collaborations between the Department of COFM and CFPS will optimize human resource development in primary care research. A research association to integrate resource management may be set up once primary care research matures in Singapore. Community-based and university-based family practice researchers must come together and merge into a synergistic partnership. Family physicians often need the expertise of university statisticians, epidemiologists and the enthusiasm of fellow family physicians. University researchers look to the community for subjects and the key factor of generalizability.

CONCLUSION

Primary care research has a good research agenda. Researchers can start with clinical research into day-to-day problems. Health systems research is another fertile area. Infecting colleagues on the value of such research and the part they can play as part of a research network is important. The infrastructure needs to be developed urgently to provide for training, network collaboration and research process support.

Serendipity alone is insufficient to bring community and university-based researchers together. Family physicians must acknowledge their needs and actively seek out assistance. The university-based departments can respond by deliberately starting outreach programs, setting buddy systems, engaging pro-research family physicians, and tracking and urging their medical officers to continue to do research¹⁵. This trans-disciplinary depth of involvement will lead to a creative interrelationship that will be rewarding and contributory to a sound primary care research culture in Singapore.

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