

# The 21<sup>st</sup> Century: The Age of Family Medicine Research?

Cindy L. K. Lam, MD, FRCGP,  
FHKAM

Family Medicine Unit, Department of  
Medicine, The University of Hong Kong,  
Hong Kong, SAR

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## ABSTRACT

Family medicine has matured as an academic and scientific discipline with its own core concepts, knowledge, skills, and research domains. It has acquired much expertise in studying common illnesses; the integration of medical, psychological, social, and behavioral sciences; patient-centered care; and health services delivery. Many health care challenges in the 21st century will place a great demand on primary care, which can serve its purpose only if it is of high quality and evidence based. Family medicine research can contribute to many areas of primary care, ranging from the early diagnosis to equitable health care. Stakeholders, such as the World Health Organization, governments, and funding agencies, are becoming more supportive to family medicine research because they recognize its key importance in improving the quality of primary care and bridging the gap between biomedical research and clinical practice. Family medicine can play a leading role in shifting the paradigm of medical research from the laboratory to the person.

The 21st century should be a golden age of family medicine research because the time is right for the discipline, the health care environment is most suitable, and stakeholders are supportive. Family medicine must prepare for it by building up its research track record and capacity.

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## INTRODUCTION

Dr. Sun Yat-Sen, the father of modern China and a general practitioner, overthrew the Manchu Dynasty and created the Republic of China in 1911. Many historians think that he succeeded because the time was right, the environment was suitable, and stakeholders were supportive of the revolution. Learning from the same Chinese wisdom, we should have a high chance of success in turning the 21st century into the age of family medicine research.

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## THE TIME IS RIGHT FOR FAMILY MEDICINE RESEARCH

The discipline of family medicine/general practice has finally established itself as an academic and scientific discipline after struggling for nearly one half of the 20th century. It has matured since Leeuwenhorst's definition of the work of the general practitioner.<sup>1</sup> The core concepts, knowledge, and skills of family medicine/general practice have been largely defined, although debate still exists on the fine details of the content of our work, and different names may be used in different parts of the world.<sup>1-5</sup> In this article the term *family medicine* is used interchangeably with general practice and family practice, and the term *family physicians* includes family physicians and general practitioners.

Family medicine is now well recognized as an academic discipline and plays an increasingly important role in the medical curricula of most universities.<sup>6-8</sup> University departments of family medicine are common,

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### CORRESPONDING AUTHOR

Cindy L. K. Lam, MD  
3<sup>rd</sup> Floor, Ap Lei Chau Clinic  
161 Main Street  
Ap Lei Chau, Hong Kong, SAR  
cklam@hku.hk

not only in western Europe and North America, but also in central and eastern Europe and Asia, where it was rarely heard of 10 to 20 years ago. Family medicine training is essential before independent primary care practice in several developed countries and is encouraged in many developing countries.<sup>5,9,10</sup> The development has been rapid in Asia and central Europe in the last 2 decades. Family medicine was almost nonexistent before 1986 in China, but in 1997 the Chinese government made it a policy to promote family medicine training for primary care doctors.<sup>11</sup> In Hong Kong, the number of family medicine training posts has increased by more than 17 times from 20 in 1993 to 346 in 2002. In Lithuania the number of trained and retrained family physicians increased from 30 in 1992 to 1,500 by the end of 2002.<sup>10</sup>

Scientifically, family medicine has developed its own research domains and methods. In an attempt to articulate our body of knowledge, we have become experts in studying diagnostic process, natural history of common illnesses, and the integration of medical, psychological, social, and behavioral sciences.<sup>2,4,12-17</sup> In bridging the gap between medical knowledge and clinical practice, we have established a track record in the research on interventions tailored to the patient's context, patient-centered outcomes, the process of the consultation, the doctor-patient relationship, alternative models of health care, health needs of disadvantaged groups, and preventive care.<sup>14,15,17-22</sup>

Family medicine has successfully integrated different research methods, ranging from qualitative interviews to economic analysis, to answer complex health care questions. It is time for the discipline to build up its research to further advance the knowledge and art of the practice of medicine.

## THE HEALTH CARE ENVIRONMENT IS MOST SUITABLE FOR FAMILY MEDICINE RESEARCH

The rapid development of many life-saving technologies during the 20<sup>th</sup> century has ironically perpetuated sick lives more than healthy ones, which Ernest Gruenberg<sup>23</sup> calls "the failures of success." This result is compounded with increasing health care cost and unequal access to care (especially high-technology secondary and tertiary treatments). There are many new challenges to patient care, health services delivery, and professional development in the 21<sup>st</sup> century (Table 1). The importance of high-quality primary care in meeting these challenges to improve health outcomes and assure equitable care is becoming increasingly apparent.<sup>21,22,24-26</sup> In the World Health Organization World Health Report 2000, countries that have well-developed and accessible primary care

systems tend to be ranked higher in overall health system performance than those that do not.<sup>24</sup> The demand for high-quality primary care is increasing.

High-quality health care should be evidence based. Most of the available medical evidence has come from the laboratory or hospital, which is often not applicable to the primary care context.<sup>2,17,27-31</sup> An audit on antithrombotic treatment for patients with atrial fibrillation in our family practice in Hong Kong showed that all doctors in the clinic were against the use of warfarin in our setting because immediate laboratory support was not available, even though warfarin was highly recommended by hospital specialists. Thirty-three patients with atrial fibrillation were found: fewer than one half (16) were taking aspirin; 4 had spontaneous remission; 3 were older than 90 years, for whom the evidence of treatment is not clear; and 10 were eligible but not taking aspirin. Only 2 of these latter 10 patients were willing to try the drug when it was offered to them. This audit was only one of the many examples of the mismatch between hospital-based research evidence and primary care patients.<sup>31</sup> Extrapolation of evidence on diagnostic tests from the hospital to primary care is often inappropriate because the illness prevalence and disease spectrum are different. In a recent paper Sackett et al illustrated how the positive predictive value of B-type natriuretic peptide (BNP) for left ventricular dysfunction decreased from 95% in the hospitalized patient population to 35% among patients in family practice.<sup>32</sup>

As Mant et al have indicated, there is a need for more research in the primary care setting to provide evidence for the improvement of primary care services.<sup>29</sup>

**Table 1. Health Care Challenges in the 21st Century**

Domain	Specific Challenges
Patient care	Influence of behavioral, psychological, and social factors on illnesses Medically unexplained illnesses POEM (patient-oriented evidence that matters) Increasing need for patient participation Increasing complexity of interventions Patient-centered outcomes
Health services delivery	Rising demand with limited resources Accountability of services Alternative methods and models of care Integration of different services
Professional development	Variation in practice Adherence to management guidelines Practice of evidence-based medicine Critical appraisal Information overload

Family medicine is the leading discipline in primary care research and can contribute a great deal in the following areas<sup>15,16,22,29,30</sup>: the pathogenesis and natural history of common illnesses<sup>13-15,33,34</sup>; the effectiveness of clinical care in relation to diagnostic tests and interventions in the real patient context<sup>17,32,35</sup>; the impact of the doctor-patient relationship and communication on the process and outcome of care<sup>19,20,36,37</sup>; health care services that are cost-effective in meeting the needs of the local community, in relation to epidemiology, help-seeking behavior, and organization of care<sup>21,38-40</sup>; and medical education and training that can influence practice and improve quality of care.<sup>41-44</sup>

### STAKEHOLDERS ARE SUPPORTIVE

The World Health Organization (WHO) declared that primary health was the key to "health for all by the year 2000" at the Alma-Ata Conference on Primary Health Care in 1978, but unfortunately the role of family medicine was not clarified.<sup>45</sup> In a joint WHO-Wonca (World Organization of Family Doctors) conference in 1994, WHO formally endorsed the contribution of family medicine to medical practice and education.<sup>43</sup> Access to comprehensive, essential, high-quality health care was described as an indicator of "health for all in the 21<sup>st</sup> century" at the World Health Assembly in 1998.<sup>46</sup> Increasingly governments realize the importance of high-quality primary care in achieving this goal and the need for family medicine training for doctors to assure the quality of primary care.<sup>25</sup> Family medicine must not miss this second opportunity to show how its research can further enhance the quality of health care.

Research funding bodies are starting to recognize the importance and relevance of investing in primary care and health services research, which provides great opportunities for family medicine researchers.<sup>12,16,21,29,47-50</sup> Since 1994, the National Health Services and Medical Research Council in the United Kingdom explicitly identified primary care as a priority area for research.<sup>12,29,50</sup> In the United States, the Agency for Healthcare Research and Quality at the National Institutes of Health (NIH) and some private foundations, such as the Robert Wood Johnson Foundation, have given notable support to family medicine research.<sup>16,47</sup> The Australian government has earmarked A\$50 million from 2000 to 2004 to fund family medicine research.<sup>48</sup> A growing number of clinical trials need to recruit patients from primary care, which can be an additional source of research funding for family physicians.

Our discipline has the largest number of members, although it does not have as many full-time academics as many other disciplines.<sup>4</sup> There is great potential for the

research capacity of family medicine to expand if more practicing family physicians can be involved, as in the case of vocational training and undergraduate teaching. All family physicians can raise the impact of family medicine research by using and disseminating the results, many can collaborate in research studies, and some can be motivated to initiate their own projects. Practice-based networks can produce very high quality research with a great impact on patient care.<sup>16,47,48,50,51</sup>

### SHIFTING THE PARADIGM OF MEDICAL RESEARCH

According to McWhinney,<sup>2</sup> "our value to medicine lies in the differences (from other medical disciplines). Eventually, the academic mainstream will become more like us than vice versa." Family medicine research has a short history. Dissemination of results of family medicine research is often limited because many family medicine journals are not indexed, and there is no separate specialty heading for family medicine in Index Medicus. The research questions and methods of family medicine are often different from those of the mainstream. It is not surprising, therefore, that some editors and academics are slow to accept family medicine research.<sup>22</sup> The paradigm of medical research, however, is likely to change in the 21<sup>st</sup> century in response to a growing concern that the huge amount of money invested in biomedical research is not translated to clinical care and therefore never benefits people's health.<sup>52</sup> Family medicine research, with its focus on the person's health and effective delivery of care, has a key role to play in bridging the gap between the laboratory and practice.

Multidisciplinary research is now the trend. Collaboration with other medical disciplines in research is an effective and nonthreatening way of informing others about our role in research. It will also enable family medicine to share the large amount of funds allocated to biomedical research and clinical trials. The age of family medicine research will come when all medical research will require the input from family medicine to assure its validity, relevance, applicability, and generalizability.

The discipline needs to prepare for the age of family medicine research by building up research capacity. Practice-based networks linked with university academic departments have great potential, and there are many successful examples.<sup>47,48,50,51</sup> International and national research fellowships are good ways of nurturing young researchers.<sup>16,53</sup> Organizations such as Wonca, NAPCRG (North American Primary Care Research Group), and the European Academy of Teachers in General Practice can play key roles in the

promotion and facilitation of training and mentoring programs in family medicine research, especially for developing countries, where the need is the highest but resources are least available.

Last but not least is to disseminate the results of family medicine research more widely, not only to family physicians but also to the stakeholders. A comprehensive family medicine research database administered by an international organization such as Wonca may be an interim solution before a better system is established in Index Medicus. Eventually, the production of more high-quality work will gain the trust from editors that publishing and indexing family medicine research will increase their impact on patient care as well as citations.

## CONCLUSION

The 21<sup>st</sup> century should be a golden age of family medicine research because the time is right for our discipline, the health care environment is most suitable, and stakeholders are supportive. The world is watching us with high expectation. If we do it right, we may lead a paradigm shift in medical research; otherwise, we will be forced to continue to practice medicine in ways that are out of context of our patients in the 21<sup>st</sup> century and beyond.

*The Revolution has not yet succeeded, we still need to work very hard.*

Dr. Sun Yat-Sen

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