Developing family practice to respond to global health challenges

The Besrour Papers: a series on the state of family medicine in the world

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Abstract

Objective To assess family medicine's role in developing strong, coordinated, community-based, integrated health care systems in low-resource settings globally.

Composition of the committee A subgroup of the Besrour Centre of the College of Family Physicians of Canada developed connections with selected international colleagues with expertise in international family medicine practice, health systems and capacity building, and teaching to map family medicine globally and give a bird's eye view of family medicine internationally.

Methods Following a background literature review, the authors collectively reflected on their substantial international experience to attempt to describe best practices for various contexts.

Report With the failure of vertical, disease-oriented models to provide sustained improvements in health outcomes, the need to develop integrated primary care involving the most appropriate health professionals for differing contexts is becoming apparent worldwide. Health system planning is required to develop policies on health professional training to achieve this. Advocating and offering appropriate incentives for, and coordination of, local opportunities within the health system also becomes paramount. The adaptability and generalist nature of family medicine allows it to respond to the unique needs of a given population. Family physicians with adequate financial and physical resources can function most effectively as members of interdisciplinary teams, thus providing valuable, comprehensive health services in any area of the world.

EDITOR'S KEY POINTS

- This article explores the potential role of family medicine in strengthening health systems globally, particularly in low-resource settings. Family medicine has spread in the past half century and can now be found to varying degrees in most regions of the world, yet more than 2 billion people still lack access to comprehensive primary care.

- Challenges include grossly inadequate physician human resources, as in sub-Saharan Africa; rural-urban disparities, which exacerbate such inadequacies; external and internal "brain drain" that sees physicians leave their home countries after training or redistributes scarce resources to the private sector or to well-funded disease-oriented programs of non-governmental organizations; and incorporating the roles of nonphysician care providers.

- The successes of some models, such as the community-oriented primary care and consultant models in South Africa and the polyclinic model in Cuba, might help guide other context-specific solutions.

POINTS DE REPÉRE DU RÉDACTEUR

- Cet article examine le rôle potentiel de la médecine familiale pour renforcer les systèmes de santé à l'échelle mondiale, particulièrement dans les milieux où les ressources sont limitées. La médecine familiale s'est répandue au cours des cinquante dernières années et est désormais pratiquée à divers degrés dans la plupart des régions du monde. Toutefois, plus de deux milliards de personnes n'ont toujours pas accès à des soins de première ligne complets et globaux.

- Les enjeux comprennent le manque flagrant de médecins, comme en Afrique subsaharienne ; les disparités entre les zones rurales et les zones urbaines qui exacerbent de telles lacunes ; « l'exode des cerveaux » externe et interne qui fait en sorte que les médecins quittent leurs pays d'origine après leur formation, ou la redistribution de ressources limitées au secteur privé ou dans des programmes déjà bien financés axés sur la maladie mis sur pied par des organisations non gouvernementales ; et l'inclusion des rôles des professionnels de la santé autres que les médecins.

- Le succès de certains modèles, comme les modèles de soins primaires axés sur la communauté et les modèles de consultants en Afrique du Sud, ainsi que le modèle de polycliniques à Cuba, pourraient aider à guider d'autres solutions adaptées aux milieux.

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Créer des pratiques de médecine familiale pour répondre aux enjeux en santé mondialez

Les Documents Besrour : une série d'articles sur l'état de la médecine familiale dans le monde

Résumé

Objectif Évaluer le rôle de la médecine familiale dans le développement d'excellents systèmes de soins de santé intégrés, communautaires, coordonnés à l'échelle mondiale au sein des milieux où les ressources sont limitées.

Composition du comité Depuis 2012, le Collège des médecins de famille du Canada organise les Conférences Besrour afin d'approfondir sa réflexion sur son rôle dans l'avancement de la discipline de médecine familiale à l'échelle mondiale. Le Groupe de travail sur les documents Besrour, qui a été mis sur pied lors de la conférence de 2013, avait pour mandat de rédiger une série d'articles présentant les enjeux principaux, les leçons apprises et les résultats des diverses activités de la collaboration Besrour. Le Groupe de travail était composé de membres de divers départements universitaires de médecine de famille au Canada et à l'extérieur du pays qui ont assisté aux conférences.

Méthodes Après un examen de la documentation, les auteurs ont réfléchi ensemble à leur expérience internationale substantielle pour tenter de décrire les meilleures pratiques pour divers milieux.

Rapport Avec l'échec des modèles verticaux axés sur la maladie relativement à l'amélioration continue de la santé, la nécessité de mettre au point des soins de première ligne intégrés en faisant appel aux professionnels de la santé les plus appropriés pour différents milieux devient évidente partout dans le monde. Une planification du système de santé est nécessaire pour élaborer des politiques sur la formation des professionnels de la santé afin d'atteindre cet objectif. La promotion des intérêts et l'offre d'incitatifs appropriés pour créer et coordonner des occasions locales au sein du système de santé prennent également plus de place. L'adaptabilité et la nature généraliste de la médecine familiale lui permettent de répondre aux besoins uniques d'une population donnée. Les médecins de famille qui possèdent les ressources financières et physiques adéquates peuvent être efficaces au sein d'équipes interdisciplinaires, fournissant ainsi des services de santé complets, globaux et utiles dans toutes les régions du monde.

Over the past half century family medicine has spread and can now be found to varying degrees in most regions of the world.[1] Nevertheless, more than 2 billion people still lack access to comprehensive primary health care services.[2] In recent decades, most health investments in the Global South have been through the silos of vertical, single-disease–oriented aid programs (including programs for HIV, tuberculosis, malaria, and, most recently, Ebola). While these programs are temporarily effective to address specific targets, this approach to global health funding does not strengthen the long-term capacity of health systems. Even Bill Gates recently recognized the importance of investing in infrastructure for horizontal, coordinated, community-based, integrated health care systems.[3] Can family medicine play a main role in developing such services in low-resource settings?

Composition of the committee

Since 2012, the Besrour Centre of the College of Family Physicians of Canada has hosted the Besrour Conferences to reflect on its role in advancing the discipline of family medicine globally. The Besrour Papers Working Group, which was struck at the 2013 conference, was tasked with developing a series of papers to highlight the key issues, lessons learned, and outcomes emerging from the various activities of the Besrour collaboration. Members of this subgroup collaborated with international colleagues with expertise in teaching and family medicine capacity building to develop this paper and an editable webpage mapping global family medicine.

Methods

Beginning with meetings at Besrour conferences and a previously described literature search,[4] the authors, whose extensive international experience spans decades of work promoting family medicine across 5 continents, initiated discussions to reflect on lessons learned (see also **http://family-medicine.ca/global**). Through e-mails, conversations on Skype, further review of the literature, and revisions of a Google document, a final product was achieved.

Report

What can family medicine offer? Family physicians are trained to adapt to, serve, respond to, and be accountable to the context and needs of communities, depending on the epidemiology of diseases, demographic realities, and socioeconomic resources of the population. Family medicine is "holistic"—a specialty dealing with the breadth of human need. Family physicians are the only medical doctors trained at the postgraduate level to provide care for patients of all ages and both sexes to address most common conditions, most of the time, in the context of patients' families, and in

community settings. Family physicians also evaluate, stabilize, and coordinate care with other health professionals for patients who might require community, hospital, or subspecialty services. Although the core of family medicine includes comprehensiveness, continuity, and community-based provision of health care services, FPs can adapt their practices to the context and needs of populations served. As family medicine is a pluripotential specialty, it can respond to the unique predominant needs of a given population.

Global South challenges: burden of disease and human resources in sub-Saharan Africa. Sub-Saharan Africa, with 25% of the world's burden of disease, but less than 3% of the health care work force, is a different context than that of the Global North, where family medicine originated. Malawi and Ethiopia, at least until recently, have had physician-to-patient ratios of 1:50 000, and Liberia, even before Ebola, had just 1 doctor for every 90 000 people.[5] While these averages seem shocking, the rural-urban disparities in these countries make the picture even more stark. Ratios of physicians in urban areas can be 5 to 20 times greater than in rural areas. Despite recent urbanization, most of the population remains rural, and many people in such areas will never see a physician.[6]

In this context the burden of communicable disease is considerable, the prevalence of chronic noncommunicable diseases is rising, and population and individual health needs exceed available resources in the number and the ability of health providers. This imbalance between the burden of disease and available health resources, specifically FPs, raises questions about whether patient-centredness and continuity of care can really be achieved with the contribution of FPs.

As Ray Downing, former Chair of Family Medicine at Moi University in Kenya, asserted,

> First contact care and "gate-keeping," for example, is not a common characteristic of African family medicine; this is often done by nurses or physician assistant–level providers. Longitudinal care is very difficult where chronic disease is uncommon, and the majority of patients come for acute episodic care. Comprehensive care is a goal, but African family physicians do not rank "preventative medicine" as their first priority. Rather, they are concerned with being good generalists, and in most African settings, this involves not only inpatient care but also major emergency surgery.[7]

Global South systems challenges: external and internal brain drain. Physicians are among the most expensive human resources for health in terms of their training and remuneration. Therefore, it is not surprising that countries or communities with a relative abundance of economic resources are more likely to be able to recruit, retain, and reimburse physicians for first-contact and continuity of care services.

Many factors contribute to the external and internal "brain drain" away from priority health work force needs.[8] Educational, legal, socioeconomic, and cultural factors, as well as financial incentives often described as "push and pull" factors, all influence the supply, recruitment, and retention of health professionals. Confronted with few postgraduate training opportunities, demanding working conditions, and few opportunities for their families, many physicians seek alternate practice settings and leave their home countries for environments they deem more advantageous. The result is that, in some countries, up to 80% of physicians migrate shortly after finishing specialized training. For example, in South Africa, the proportion of doctors residing abroad in the better-off Organisation for Economic Co-operation and Development countries is 37% of the number of doctors within the country.[9] Canada, the United States, Britain, and Australia actively recruit foreign-trained medical doctors to meet work force gaps. In Britain, 63% of medical doctors were trained in Britain, but 25 000 (9.4%) were trained in India, almost 10 000 in Pakistan, and more than 5000 in South Africa, and 4000 qualified in Nigeria.[10]

Less known is the *internal* brain drain that is created when well-funded, vertical, disease-oriented programs of internationally known, non-governmental organizations pay better salaries to attract a high-quality work force, thereby removing substantial numbers of care providers from the comprehensive public health care infrastructure. Physicians might prefer the flexibility of work in the private sector, even part time to supplement income. A more hidden drain occurs when full-time public sector employees set up parallel private sector clinics, diminishing the services they provide in the public sector.

Consequently, areas with high rates of poverty or dispersed rural populations with scarce economic resources often have populations with the greatest inequities in health outcomes and require strong incentives to retain health professionals.

Role of other primary care professionals. When physicians are not available for first-contact community, clinical, and emergency care, other types of primary care providers must fill that role. Examples include clinical officers, medical officers, nurse practitioners, physician extenders, and even traditional healers. Public health or community lay health workers might skillfully provide services otherwise offered by family doctors.[11] Although family doctors provide valuable services, there is mounting evidence that task shifting, even of basic emergency procedures, away from physicians to other primary health care providers within interdisciplinary

teams is cost-effective.[12] In African countries such as Tanzania, Kenya, Uganda, and Ethiopia, clinical officers with 3 years of training have the opportunity to further their qualifications with additional training to become assistant medical or surgical officers and be able to perform basic surgeries and procedures. If nurses, nurse practitioners, and clinical officers offer care for basic needs that is as good as the care physicians provide, with training costs and salaries a fraction of those of physicians, should we not be promoting them in environments with limited resources?

On the other hand, nonphysician health care providers might find themselves caring for patients with needs beyond their skills. They might perform well in antenatal or well-baby checks. However, training that is based on algorithms rather than critical thinking can result in inaccurate diagnoses and improper treatment of complex patients with comorbid illnesses or diagnostic uncertainty. This might result in inappropriate or delayed referrals to specialists or regional centres, which ultimately would result in higher costs to the patient and system. A World Health Organization report states, "It is not acceptable that, in low-income countries, primary care would be synonymous with low-tech, non-professional care for the rural poor who cannot afford any better."[13]

Fulton and colleagues found evidence for each of these possibilities.[14] Nonphysicians, including assistant surgical officers or clinical officers, appeared to be able to provide high-quality surgical obstetric care in Malawi and Mozambique; nurses could adequately substitute for physicians in the management of diabetes and hypertension in sub-Saharan Africa; and community health workers provide cognitive-behavioural therapy in Pakistan. Fulton and colleagues' review found studies with equivalent outcomes for patients in East Africa with HIV-AIDS who received either clinic-based treatment or care from community-based peers using preprogrammed personal digital assistants with decision support. However, other sub-Saharan African studies found quality and safety concerns, professional and institutional resistance, and the need to sustain motivation and performance. A program in Mozambique with nonphysician clinicians delivering HIV antiretroviral treatment was suspended until retraining could be done, and there were mixed data around community health workers in Kenya treating children; they were largely able to follow guidelines but were missing a substantial number of lifesaving interventions for dealing with complex patients.[14]

Competing or complementary primary care models for the Global South. Sidney and Emily Kark developed the concept of community-oriented primary care (COPC) in South Africa in the 1940s, later transplanting this model to Jerusalem at the Hadassah School of Public Health and Community Medicine. The Karks describe COPC as health care that should be available to all, with effective health services congruent with the needs of a community. Aspects of COPC include providing health care to the whole community; unifying community medicine and primary care; integrating preventive and curative care; addressing behavioural, socioeconomic, and cultural determinants of health; using epidemiology as a tool to identify health needs; involving community members to create services around the country; and integrating research and education.[15]

Losing half of its doctors in the aftermath of the revolution, Cuba accelerated training for creating new rural physicians. However,

> waiting times to see physicians were too long and time with doctors too short and superficial, preventive and curative services were not well integrated, coordination and continuity of medical care were inadequate, the system was still too hospital-oriented, and physicians preferred specialization over primary care.[16]

Given their limited success, Cuba developed a comprehensive polyclinic model in 1974, with gynecologists, pediatricians, and internists doing primary care and integrating public health personnel, social work, and laboratory services in teams.[16]

In the 1980s, FP-nurse teams were added to the system. Now there are more than 500 polyclinics serving most communities. Each polyclinic cares for 30 000 to 60 000 people and has 20 to 40 associated FP-nurse offices, each designed to care for 600 to 1500 people. Thus, more than 36 000 GPs work in Cuba within 3000 clinics providing 100% coverage of the population of more than 11 million people.[16,17] These personnel often live close to the clinic and know the neighbourhood extremely well. Current medical training involves an internship year followed by 2 years of postgraduate training in family medicine, after which other specialties can be chosen. This national integrated model, with its well-known success in reducing infant mortality and increasing life expectancy, is now being promoted throughout Latin America. In addition Cuba has a tradition of sending more than 20 000 physicians abroad (primarily to Africa and Latin America, along with training foreign students at the Latin American School of Medicine) to treat underserved populations.[16]

The 2009 WONCA (World Organization of Family Doctors) Africa meeting in Rustenburg, South Africa, saw Africa's family doctors as the "consultants" for the primary care multidisciplinary team to coordinate care and enhance the scope and quality of primary care.[18] Thus, while in high- and middle-income countries FPs might deliver primary-level care (first-contact, continuity

of care for a defined population), in lower-income countries of Africa and Asia, with their scarcity of health human resources, FPs might be more appropriately placed at the secondary (consultant) level. These leadership positions, whether in inpatient or outpatient settings, will involve coordinating with subspecialty physicians within their district and referral centres, as well as providing supervision or support for nurses, midwives, clinical officers, social workers, and therapists, who provide most front-line primary health care services. Family physicians can support and encourage these cadres toward ever improving individual care and systems that make care more holistic and responsive to a broader range of human needs.[19]

Can these models guide the family medicine of the future in global contexts?

The way forward

With the failure of vertical, disease-oriented models to provide sustained improvements in health outcomes, the need to develop integrated primary care involving the most appropriate health professionals for each context is becoming apparent worldwide. This parallels the search for technical solutions with subspecialists, new drugs, and improved diagnostics that, with few exceptions, has also had limited effects on population health in the Global North in the past quarter century.

Health system planning is required to develop policies on health professional training to supply the right numbers of health professionals with the right skills, distributed according to the needs of the population. Offering appropriate incentives, advocacy, and coordination for local opportunities within the health system becomes paramount. The "missing link" has been the postgraduate-trained coordinator of these primary care services.

Family medicine can be practised in various forms: the relationship-focused FP who works primarily in the outpatient setting of Europe and of North America; the population-based COPC model; the hospitalist overseeing the health system in sub-Saharan Africa; or the Cuban community care model. Family physicians with adequate financial and physical resources can function most effectively as members of interdisciplinary teams, thus providing valuable, comprehensive health services in any area of the world.

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Contributors
All authors contributed to the literature review and interpretation, and to preparing the manuscript for submission.

Competing interests
None declared

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References

1. Kidd M, editor. *The contribution of family medicine to improving health systems: a guidebook from the World Organization of Family Doctors.* 2nd ed. London, Engl: Radcliffe Health Publishing; 2013.
2. Collier P. *The bottom billion.* New York, NY: Oxford University Press; 2007.
3. Doughton S. After 10 years, few payoffs from Gates' 'Grand Challenges.' *The Seattle Times* 2014 Dec 21. Available from: **www.seattletimes.com/seattle-news/after-10-years-few-payoffs-from-gatesrsquo-lsquogrand-challengesrsquo**. Accessed 2015 Jul 2.
4. Arya N, Gibson C, Ponka D, Haq C, Hansel S, Dahlman B, et al. Family medicine around the world: overview by region. The Besrour Papers: a series on the state of family medicine in the world. *Can Fam Physician* 2017;63:436-41.
5. Sieff K. Liberia already had only a few dozen of its own doctors. Then came Ebola. *Washington Post* 2014 Oct 11. Available from: **www.washingtonpost.com/world/africa/liberia-already-had-only-a-few-dozen-of-its-own-doctors-then-came-ebola/2014/10/11/dcf87c5c-50ac-11e4-aa5e-7153e466a02d_story.html**. Accessed 2015 May 23.
6. Lemiere C, Herbst C, Jahanshahi N, Smith E, Souca A. *Reducing geographical imbalances of health workers in sub-Saharan Africa. World Bank Working Papers.* Washington, DC: World Bank eLibrary; 2010. Available from: **https://elibrary.worldbank.org/doi/abs/10.1596/978-0-8213-8599-9**. Accessed 2015 Jul 2.
7. Downing R. African family medicine. *J Am Board Fam Pract* 2008;21(2):169-70.
8. Cometto G, Tulenko K, Muula A, Krech R. Health workforce brain drain: from denouncing the challenge to solving the problem. *PLOS Med* 2013;10(9):e1001514.
9. Chen L, Evans D, Evans T, Sadana R, Stilwell B, Travis P, et al. *The world health report 2006: working together for health.* Geneva, Switz: World Health Organization; 2006. Available from: **www.who.int/whr/2006/whr06_en.pdf?ua=1**. Accessed 2015 Aug 22.
10. General Medical Council. *List of registered medical practitioners-statistics.* London, Engl: General Medical Council; 2015. Available from **www.gmc-uk.org/doctors/register/search_stats.asp**. Accessed 2015 Aug 22.
11. Cochrane Collaboration. *Using lay health workers in primary and community health care for maternal and child health-evidence and opportunities.* London, Engl: Cochrane Collaboration.
12. Starfield B. *Primary care: balancing health needs, services and technology.* New York, NY: Oxford University Press; 1998.
13. World Health Organization. *The world health report 2008. Primary health care. Now more than ever.* Geneva, Switz: World Health Organization; 2008. Available from: **www.who.int/whr/2008/en**. Accessed 2017 Jun 28.
14. Fulton BD, Scheffler RM, Sparkes SP, Auh EY, Vujicic M, Soucat A. Health workforce skill mix and task shifting in low income countries: a review of recent evidence. *Hum Resour Health* 2011;9:1.
15. Mullan F, Epstein L. Community-oriented primary care: new relevance in a changing world. *Am J Public Health* 2002;92(11):1748-55.
16. Keck CW, Reed G. The curious case of Cuba. *Am J Public Health* 2012;102(8):e13-22.
17. Reed G. Cuba's primary health care revolution: 30 years on. *Bull World Health Organ* 2008;86(5):327-9.
18. Mash R, Reid S. Statement of consensus on family medicine in Africa. *Afr J Prim Health Care Fam Med* 2010;2(1). Article 151.
19. Edwards N, Smith J, Rosen R. *The primary care paradox: new designs and models.* KPMG International; 2013. Available from: **www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/primary-care-paradox/Documents/primary-care-paradox.pdf**. Accessed 2015 Jul 2.