OPTIMIZING STAFFING MODELS AND TEAM STRUCTURE... FOR EQUITABLE CARE AMIDST RAPID GROWTH AND URBANIZATION

THE CHALLENGE

In many low- and middle-income countries (LMICs), rapid urbanization, population growth, and changing lifestyles are driving a growing burden fuelled by noncommunicable disease and injury, while poor sanitation and overcrowding create conditions for infectious pathogens to spread and thrive. This changing burden of disease is increasing pressure on the health workforce, with many conditions going undiagnosed and thus untreated. Coping with these new threats will require transitioning toward models of primary care that support an expanded focus on health promotion, disease prevention, and integrated multidisciplinary care to ensure equitable health gains for all—including the urban poor.

URBAN HEALTH NEEDS ARE RAPIDLY EVOLVING

LMICs are facing rising incidence of noncommunicable disease (NCDs), leading to a growing burden of chronic illness, disability and multi-morbidity. Over 85 percent of NCD deaths before the age of 70 years (“premature deaths”) occur in LMICs, with the largest burdens arising from cardiovascular disease (heart disease and stroke), cancer, chronic lung disease, and diabetes. Rapid urbanization and poverty increase exposure to cheap, energy-dense diets, and concentrate issues of road traffic injury, violence, and substance abuse. HIV/AIDS is caused by an infectious virus, yet its lifelong treatment more closely mimics chronic diseases like hypertension or diabetes. Infectious and chronic disease alike too often remain undiagnosed and untreated; for example, estimates suggest that, globally, 50% of all people with diabetes or hypertension are unaware of their condition.
The Urban Poor Face Particular Vulnerabilities
More people now live in cities than in rural areas. While urbanization offers opportunities for economic growth and improved living standards for some, chaotic urban development can also concentrate overcrowding and poverty, and further entrench inequality. Estimates suggest that up to one-third of urban dwellers live in slums; in these communities, poverty is rife and health risks related to overcrowding, including air pollution and rapid spread of infectious diseases, are amplified. Individuals in these communities may live near health facilities and services but still not get the care they need because of financial or informational barriers. Staffing models for the frontline must ensure that populations at highest risk, such as the urban poor, are effectively engaged in care.

Traditional Health Services Are Ill-Equipped to Confront These Pressures
Responding to this changing burden of disease requires a fundamental shift in how primary health care is delivered: moving towards models of frontline care that incorporate health promotion, risk factor modification, and stratification of high-risk individuals. Current models of primary health care are largely ill-equipped to deal with these pressures: often, services are fragmented, continuity of care is poor, and treatment quality is low. New approaches should promote horizontal integration across providers and foster continuity of care to optimize management of chronic disease. Opportunistic case finding will also be increasingly important given the staggering number of people living with undiagnosed chronic disease.

THE PATH FORWARD: BUILDING EFFECTIVE CARE TEAMS AT THE FRONTLINE

Community-Based Primary Health Teams
Multidisciplinary community-based health teams are increasingly recognized as a central strategy for delivering high-quality and cost-effective primary health care. Evidence from high-income countries suggests that team-based service delivery models may offer advantages in facilitating higher patient satisfaction, continuity of care, and improved chronic disease management. As urbanization and the demographic transition create changing demands on primary health systems in low and middle-income settings, team-based models may allow greater integration of care and optimization of coverage. Empanelling patients (i.e., assigning them to a specific health care team, usually geographically based), can naturally improve continuity of care as patients have repeated interaction with the same health care team.

Among low- and middle-income countries, national programs in Brazil, Costa Rica, and Thailand are widely regarded as exemplars of team-based health care delivery. The Brazilian Family Health Strategy (FHS)—the best evaluated program among this cohort—created “family health teams” consisting of a doctor, nurse, nursing
assistant, and 4-6 community-health workers (CHWs) that provide care to around 3,500 patients in a defined geographic region. With over 37,000 family health teams now deployed, Brazil has demonstrated remarkable health gains, with studies linking the FHS to impressive reductions in child mortality, lower rates of hospitalization and more equitable health care use.

**Improving Cohesive Care: Optimizing Multidisciplinary Team Structure**

Despite the potential advantages of team-based models, there is limited rigorous evidence to guide optimal construction of the primary care team; however, case studies have highlighted the importance of clear delineation of roles and responsibilities. Different health systems have taken different approaches to constructing care teams and assigning tasks. In Costa Rica, for example, primary health teams (called the Equipos Básicos de Atención Integral de Salud, or EBAIS) consist of a doctor, nurse, CHW, and pharmacist, each with a clearly defined role and set of responsibilities. In this system, CHWs perform home visits to deliver health promotion and household screening; nurses undertake basic clinical tasks and counselling; and physicians lead management of acute and chronic conditions. In Thailand, primary health “matrix teams” consist of four care providers working at different levels within the health system: a family doctor (district hospital level), nurse (sub-district level), CHW (village level), and family member/caregiver. Recognizing the complexity of community support for chronic disease management, other models have sought to broaden the primary health care team to include allied health practitioners, or to support greater integration with social services. From 2008, for example, the Brazil FHS introduced Family Health Support Centers (NASF) where interdisciplinary teams (including psychologists, for example) deliver extended care to support the family health team.

**From Reactive Services to Proactive Health Care**

In urban areas, proactive frontline strategies can help address disparities in health outcomes by supporting basic health education and promotion, identifying subclinical illness, and helping sustain adherence to treatment. In Brazil, community health agents are each assigned around 150 households for monthly visits, during which they offer health promotion and support basic health care. In Costa Rica, CHWs within EBAIS teams calculate risk scores for individual households in their catchment areas; these scores are used to determine the frequency of future in-person visits. Similarly, a recent study in peri-urban Mali found that an intensive, proactive strategy of community case management was associated with dramatic reductions in under-5 mortality.
SPOTLIGHT

Brazil’s Family Health Strategy

The Brazil Family Health Strategy (FHS, Programa Saude da Familia) was introduced in 1994 as part of a comprehensive health system reform to strengthen primary health care. Central to the FHS are family health teams as the basic unit for primary health care delivery. Each multidisciplinary team consists of a doctor, nurse, nursing assistant, and 4-6 community health workers (CHWs), with some teams also including social workers and/or dental professionals. Together, the team is responsible for delivering primary health care to a geographically empanelled area with around 3,500 people. While doctors and nurses provide medical treatment in fixed health facilities, CHWs proactively engage with up to 150 households, delivering health information, providing preventive care (such as childhood immunizations), and, more recently, expanding their focus to support chronic disease care within the community. This strategy represents a transition away from traditional physician-centric models, emphasising community-based, multidisciplinary delivery of care. The FHS was initially launched as a pilot program, but has since been scaled up with more than 37,000 family health teams deployed, including over 260,000 CHWs. By 2015, coverage of the program had reached 63% of the population. Building upon the initial success of the program, more recent initiatives have focussed on expanding multidisciplinary services (including addition of nutritionists, psychologists, and pharmacists) through the NASF (“Family Health Support Centers”) in 2008 and improving the quality and accessibility of programs.

Formal evaluation of the FHS has been complex due to the difficulty of disentangling effects from other concurrent initiatives, in particular the Bolsa Familia (conditional cash transfer program). A systematic review of 31 studies showed significant improvements in child mortality rates related to the FHS program, with Aquino et al. showing reductions of up to 22% in infant mortality rate in areas with high program coverage, compared to only 13% in areas with lower coverage. Other studies have linked the FHS to lower rates of hospitalization (for conditions that could otherwise be managed in the community), and reduced mortality from cardiovascular disease and stroke, although ecological design limits quality of findings. The FHS also facilitated advances in health equity in Brazil, with increases in health care use greatest among the poorest Brazilians. The program appears remarkably cost-effective, with one study suggesting costs of $50 per capita (based on 40% program coverage at the time). Ongoing challenges for Brazil include continuing expansion of program coverage and strengthening quality of care.

Costa Rica’s Equip Basico de Atencion Integral de Salud (EBAIS)

To address health care quality deficits, Costa Rica embarked on major health system reform in the mid-1990s, creating a new primary care model centred around integrated primary health care teams (EBAIS teams). EBAIS multidisciplinary teams consist of a doctor, nurse, CHW (technical officer), medical clerk, and pharmacist, who deliver holistic primary health care to a geographically empaneled region of around 4500
Health teams are organized into integrated regional networks; groups of 5-15 EBAIS teams form “Health Areas”, which subsequently feed into secondary referral clinics with more advanced services. Notably, the EBAIS model emphasized integration of care across multidisciplinary providers, bridging the gap from health promotion and screening to curative care. There is clear role delineation across team members: with CHWs performing home and community visits with a focus on health promotion, nurses undertaking basic clinical tasks, and doctors providing more complex patient care. During proactive home visits, CHWs may screen household members to calculate household risk scores, which can then be used to determine the need for future home visits or referral to clinics for further medical input.

From 1994 to 2016, Costa Rica saw dramatic progress in healthcare access and outcomes. During this period, access to primary health care increased from 25% to 93%, while mortality from communicable diseases fell from 65 deaths per 100,000 (1990) to 4 per 100,000 in 2010. Significant reductions in child and adult mortality have also been reported. Despite these promising findings, overall data quality is limited and it is difficult to distinguish the effects of the EBAIS teams from health improvements related to economic growth.

ENDNOTES


xv Pesec et al.


xvii Macinko, Harris, and Rocha, “Brazil’s National Program for Improving Primary Care Access and Quality (PMAQ).”

xviii Macinko and Harris, “Brazil’s Family Health Strategy — Delivering Community-Based Primary Care in a Universal Health System.”

xix Pesec et al., “Primary Health Care That Works.”


xxii Macinko, Harris, and Rocha, “Brazil’s National Program for Improving Primary Care Access and Quality (PMAQ); Bastos et al., “The Impact of the Brazilian Family Health on Selected Primary Care Sensitive Conditions.”

xxiii Glassman and Temin, “Tackling Disease at Its Roots: Brazil’s Programa Saude Da Familia.”

xxiv Glassman and Temin.

xxv Bastos et al, “The Impact of the Brazilian Family Health on Selected Primary Care Sensitive Conditions.”


xxvii Macinko, Harris, and Rocha, “Brazil’s National Program for Improving Primary Care Access and Quality (PMAQ).”
REFERENCES


Macinko, Harris, and Rocha, “Brazil’s National Program for Improving Primary Care Access and Quality (PMAQ).”

Pesec et al., “Primary Health Care That Works.”


Torres.


Torres, “Costa Rica Case Study: Primary Health Care Achievements and Challenges within the Framework of the Social Health Insurance.”


