

## Improving primary health-care services in LMIC cities



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Urban environments are home to more than half of the people living in low-income and middle-income countries (LMICs), and this proportion will only increase over the coming decades. Much policy discussion of health services in LMICs still relies on knowledge and models derived from rural contexts, for which a single public-sector clinic is often the only option. In contrast, contemporary evidence shows that the urban health service landscapes are made up of dense networks of competing provider clinics that constitute a market. Improvement strategies that work in non-urban contexts are therefore unlikely to be sufficient in these environments. Innovative policy approaches that leverage choice and competition to re-shape markets offer great promise.

The first paper<sup>1</sup> in this Series of two describes the configuration, cost, and quality of primary-care services in LMIC cities, along with the preferences of service users for different types of service. First, we find extensive evidence that numerous facilities are available to citizens, even in low-income neighbourhoods of LMIC cities. As a result, most people can reach multiple doctor or nurse clinics within 30 min.<sup>2</sup> With the exception of some hospital-based polyclinics, most facilities are not busy, with the result that clinical capacity is under-used.<sup>3</sup> Second, service costs vary greatly and are substantially tied to commodities such as pharmaceuticals and diagnostics.<sup>2</sup> Most people report low out-of-pocket costs, but the variance is wide and asymmetrical such that a minority face catastrophic expenses.<sup>4</sup> A few LMICs at higher income levels offer freely available public services or insurance, but this is not the global norm. Third, the average quality of services is generally poor; many clinicians fail to make the correct diagnosis or implement the appropriate treatment,<sup>3</sup> long-term conditions are poorly managed,<sup>5</sup> antibiotic stewardship is inadequate,<sup>6</sup> and medicine stockouts are frequent.<sup>7</sup> Fourth, despite the complexity of this environment, patients (including those who are very financially disadvantaged) exhibit considerable agency, seeking out clinics perceived to offer a higher quality care, even if they have to travel further and pay more.<sup>8</sup>

These facts present a compelling new image of primary health services in LMIC cities. Facilities are omnipresent and easy to reach, but are very diverse in

terms of cost, quality, and crowding. The geography of LMIC cities has resulted in what might best be described as a market in which a variety of private and public providers compete, at least implicitly. Most providers are low cost, low quality, and not crowded—but there are important exceptions to these characteristics.

The second paper<sup>9</sup> discusses the implications of these findings for policy aimed at the improvement of primary health services in these cities. The presence of primary health-care markets provides an opportunity to reshape the market through policies that change the mix of available providers. This opportunity is not available in rural areas for which choice and competition are rare (and public facilities often dominate). In this Series paper we therefore describe not only methods to improve the quality of existing providers, but also methods that take advantage of competition and choice to reshape the market. Thus, while recognising that there are no one-size-fits-all solutions, we discuss approaches in three categories: (1) shaping the market by changing the mix of available providers; (2) improving existing services (including quality and financial accessibility); and (3) facilitating effective demand for better service.

One powerful example of shaping the market is investing in public facilities, which can stimulate improvement among facilities and crowd out those that fail to improve.<sup>10</sup> Likewise, judicious regulation has been shown in a recent randomised controlled trial to improve quality in the public sector, while having positive knock-on effects for the private sector.<sup>11</sup> One of the best ways to invest in improving existing services is through the formation of multi-disciplinary primary care teams integrating facility care (provided by doctors and nurses) with community care (provided by community health workers). Evidence from Brazil, an early adopter of this model, suggests that these teams provide integrated and equitable, preventive, acute, and long-term care.<sup>12</sup> Existing services can also be improved by well designed continuing professional development, information technology (including virtual consultations), and various forms of management support.

Many initiatives have tried to improve care by stimulating demand. Successful interventions include

providing patients with information on available services, involving communities in shaping local services, and providing free access by removing user fees or providing vouchers.

There is experimental evidence for most of the previously mentioned initiatives,<sup>13</sup> but judging relevance and prioritisation has been difficult because most studies evaluate compound (ie, multi-component) interventions without using a factorial design, there is little evidence beyond immediate effects, and there are few cost-effectiveness or cost-benefit analyses. In addition, there is little evidence regarding people who are homeless or unregistered and for peri-urban areas and towns.

Now is a propitious time for primary care. After many years there are signs that it is getting the recognition it deserves at a time when health investments are rising with economic growth and a renewed focus on universal health coverage. But for any increased investment to be efficacious, it needs to account for the context and environment in which it is introduced. Policies in cities offer multiple opportunities—but also multiple challenges as market interactions can lead to unintended consequences. The evidence and analysis offered in our Series is intended to provide a framework for this debate.

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- 1 Lilford RJ, Daniels B, McPake B, et al. Supply-side and demand-side factors affecting allopathic primary care service delivery in low-income and middle-income country cities. *Lancet Glob Health* 2025; **13**: e942–53.
- 2 Bakibinga P, Kabaria C, Kasiira Z, et al. Primary care doctor and nurse consultations among people who live in slums: a retrospective, cross-sectional survey in four countries. *BMJ Open* 2022; **12**: e054142.
- 3 Daniels B, Yi Chang A, Gatti R, Das J. The medical competence of health care providers in sub-Saharan Africa: evidence from 16 127 providers across 11 countries. *Health Aff Sch* 2024; **2**: qxae066.
- 4 Bakibinga P, Kabaria C, Kasiira Z, et al. Inequity of healthcare access and use and catastrophic health spending in slum communities: a retrospective, cross-sectional survey in four countries. *BMJ Glob Health* 2021; **6**: e007265.
- 5 Geldsetzer P, Manne-Goehler J, Marcus M-E, et al. The state of hypertension care in 44 low-income and middle-income countries: a cross-sectional study of nationally representative individual-level data from 1.1 million adults. *Lancet* 2019; **394**: 652–62.
- 6 Sulis G, Adam P, Nafade V, et al. Antibiotic prescription practices in primary care in low- and middle-income countries: a systematic review and meta-analysis. *PLoS Med* 2020; **17**: e1003139.
- 7 Miller R, Goodman C. Performance of retail pharmacies in low- and middle-income Asian settings: a systematic review. *Health Policy Plan* 2016; **31**: 940–53.
- 8 Conlan C, Cunningham T, Watson S, et al. Perceived quality of care and choice of healthcare provider in informal settlements. *PLOS Global Public Health* 2023; **3**: e0001281.
- 9 Lilford RJ, Daniels B, McPake B, et al. Policy and service delivery proposals to improve primary care services in low-income and middle-income country cities. *Lancet Glob Health* 2025; **13**: e954–66.
- 10 McPake B, Hanson K. Managing the public-private mix to achieve universal health coverage. *Lancet* 2016; **388**: 622–30.
- 11 Bedoya G, Das J, Dolinger A. Randomized regulation: the impact of minimum quality standards on health markets. 2022. [https://www.nber.org/system/files/working\\_papers/w31203/w31203.pdf](https://www.nber.org/system/files/working_papers/w31203/w31203.pdf) (accessed Feb 24, 2025).
- 12 Bastos LSL, Aguilar S, Rache B, et al. Primary healthcare protects vulnerable populations from inequity in COVID-19 vaccination: an ecological analysis of nationwide data from Brazil. *Lancet Reg Health Am* 2022; **14**: 100335.
- 13 Rowe AK, Rowe SY, Peters DH, Holloway KA, Chalker J, Ross-Degnan D. Effectiveness of strategies to improve health-care provider practices in low-income and middle-income countries: a systematic review. *Lancet Glob Health* 2018; **6**: e1163–75.