Primary Care in LMIC Cities 2

Policy and service delivery proposals to improve primary care services in low-income and middle-income country cities

Richard J Lilford, Benjamin Daniels*, Barbara McPake, Zulfiqar A Bhutta, Robert Mash, Frances Griffiths, Akinyinka Omigbodun, Elzo Pereira Pinto Jr, Radhika Jain, Gershim Asiki, Eika Webb, Katie Scandrett, Peter J Chilton, Jo Sartori, Yen-Fu Chen, Peter Waiswa, Alex Ezeh, Catherine Kyobutungi, Gabriel M Leung, Cristiani Machado, Kabir Sheikh, Sam I Watson, Jishnu Das*

The landscape of primary care services in low-income and middle-income country cities is diverse and dynamic, yet the quality of care received is too often low and the financial cost to the patient high. In the second Paper in this Series, we argue that shaping the primary care market is likely to provide larger returns to scale than individual quality improvement initiatives. Among other things, the market can be shaped by regulation and targeted public investment to crowd out poor providers and motivate those that remain to improve. Additional supply-side initiatives for which there is evidence include measures to educate and motivate the workforce, skill substitution and formation of clinical primary care teams, information technology, and improving the supply of medicines and diagnostics. Demand-side measures include reducing out-of-pocket expenses and promoting health literacy and user advocacy. Research is urgently needed into access for people who are unregistered (eg, those who sleep on the streets), those in peri-urban areas and towns, and on cost-effectiveness, and sustainability of beneficial interventions.

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*Joint first authors

This is the second in a **Series** of two papers about primary care in LMIC cities

Institute of Applied Health Research, University of Birmingham, Edgbaston, UK (Prof R J Lilford PhD, K Scandrett MSc, P J Chilton BSc, J Sartori BA, S I Watson PhD); **Department of Global Health and Population, Harvard T H Chan School of Public Health, Boston, MA, USA** (B Daniels MSc); **The University of Melbourne, Parkville, VIC, Australia** (Prof B McPake PhD); **Institute for Global Health & Development, The Aga Khan University, South-Central Asia, East Africa, and UK, Karachi, Pakistan** (Z A Bhutta PhD); **Centre for Global Child Health, The Hospital for Sick Children, Toronto, ON, Canada** (Z A Bhutta); **Department of Family & Emergency Medicine, University of Stellenbosch, Cape Town, South Africa** (Prof R Mash PhD); **Warwick Medical School, University of Warwick, Coventry, UK** (Prof F Griffiths PhD, Y-F Chen PhD); **Centre for Health Policy, School of Public Health, University of the Witwatersrand, Johannesburg, South Africa** (Prof F Griffiths); **College of Medicine, University of Ibadan, Ibadan, Nigeria** (A Omigbodun MD); **Center of Data and Knowledge Integration for Health, Oswaldo Cruz Foundation–Brazil, Salvador, Brazil** (E P Pinto Jr PhD); **Global Business School for Health, University College London, London, UK** (R Jain ScD); **African Population and Health Research Center, Nairobi, Kenya** (G Asiki PhD, C Kyobutungi PhD); **University Hospitals**

Introduction

This is the second and final paper in a Series about the provision of primary care services in urban settings in low-income and middle-income countries (LMICs). In the first paper, we described the existing landscape of access, use, cost, quality, and choice in primary care. The evidence summarised there described a dense, diverse, and dynamic landscape of primary care provision in LMIC cities, where most community clinics have significant excess capacity. The average quality of care was low, and out-of-pocket expenditures could be substantial, but there was considerable variation in both. Thus, the supply and demand for primary care in these environments resembled markets for commoditised services, rather than top-down publicly mandated health systems. Here, we build on that evidence to discuss what might be done to improve primary care provision in LMIC cities and explore the potential for success among several commonly proposed strategies, recognising that the existence of this market structure provides a set of options to the urban policy maker that are not available in a typical rural setting.

In this Series, we reviewed evidence regarding policy or service interventions to improve primary-care quality in LMICs and situated these within a conceptual framework that reflects on how each intervention interacts with the broader structures of competition and choice in the urban environment. As in the first paper in this Series, we use the Institute of Medicine classification of outputs to which a health system should aspire (effectiveness, safety, patient-centredness, accessibility, efficiency, and equity).[1] We use system performance to refer generically to improvement across the Institute of Medicine criteria, and quality when we want to refer to clinical care consultations requiring the clinician to recognise conditions, recommend appropriate actions, and provide patient-centred care. The method of literature retrieval used to inform our analysis is described in panel 1.

Conceptual framework to classify the interventions to improve system performance

There are numerous frameworks describing the determinants of system performance, including the WHO–European Observatory document on health system

Key messages

- Although services can be improved at the supply and demand sides, the existence of a market in urban areas opens another route to improved services not typically available in rural areas—namely, the possibility to shape the market.
- At the supply side, there are compelling reasons to develop primary care teams incorporating community health workers.
- Other promising supply side interventions include education, management training, and shared records (starting with patient-held paper records as precursors to electronic records).
- Demand-side interventions to improve self-confidence and health literacy are effective interventions that align well with market shaping.
- Policy makers have additional powerful strategies to shape the market in the form of strategic investment in public services and regulation. These strategies have been shown to both crowd out poor-quality providers and crowd in better quality providers.
- Research on primary care in low-income and middle-income country cities is at an early stage and should more often consider the opportunity cost of interventions than at present.

Birmingham NHS Foundation Trust, Birmingham UK (E Webb MBBS); **School of Public Health, College of Health Sciences, Makerere University, Kampala, Uganda** (Prof P Waiswa PhD); **Dornsife School of Public Health, Drexel University, Philadelphia, PA, USA** (Prof A Ezeh PhD, Prof K Sheikh PhD); **School of Public Health, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong Special Administrative Region, China** (Prof G M Leung MD); **Sergio Arouca National School of Public Health, Oswaldo Cruz Foundation, Rio de Janeiro, Brazil** (Prof C Machado PhD); **McCourt School of Public Policy and the Walsh School of Foreign Service, Georgetown University, Washington, DC, USA** (Prof J Das PhD)

Correspondence to: Prof Richard J Lilford, Institute of Applied Health Research, University of Birmingham, Edgbaston B15 2TT, UK
r.j.lilford@bham.ac.uk

See Online for appendix

***Panel 1*: Search strategy and selection criteria**

We reviewed papers retrieved for the first paper in this Series that included evidence regarding policy or service interventions (henceforth, policy interventions), including Cochrane overviews[2–5] and other systematic reviews dealing specifically with quality improvement in low-income and middle-income countries, including the review by Rowe and colleagues,[6] which collated and summarised outcomes from health system interventions before 2016 from 337 studies. We include scoping and systematic reviews that evaluate policy interventions, including those covering specific countries,[7] specific regions (Asia–Pacific),[8,9] children,[10] and specific policies such as payment for performance,[11] mobile health,[12] paper records,[13] delivery of medicines,[14] and cost effectiveness studies.[15]

A considerable body of evidence on policies to improve health care was recently compiled by Rowe and colleagues.[6] This evidence covers urban and rural settings. We, therefore, performed a re-analysis of this existing systematic review to obtain data in a specific urban context. We obtained an updated version of the underlying database, which we filtered to include only studies conducted in urban, peri-urban, and mixed urban–rural settings, either in a primary care community health facility, or hospital general outpatient departments (which we termed polyclinic). This filtering yielded a list of 74 studies (appendix p 8), which we checked to confirm appropriateness to this paper's topic.

performance,[16] and the study by Lilford and colleagues cited in the first paper of this Series,[17] but we use a standard classification of factors that turn inputs into services. That classification, represented in the figure, covers a number of different areas: measures to improve the output of an existing set of clinical facilities servicing an existing set of care-seekers, without changing the composition of provider facilities—these could be called supply side interventions; consumer empowerment and pressure at the level of the community or individual patients, including both financial and informational elements that redirect consumer decisions and willingness to pay—these could be called demand-side interventions; and measures to change the composition of clinical facilities using policy levers, including, but not limited, to investing in public services and regulation—these could be called market-shaping interventions.

Supply side measures to improve the performance of an existing set of providers

One approach to improving primary care providers' performance, widely represented in the literature, is to intervene to enhance care quality delivered by existing providers (figure). Conceptually, the performance of a given set of service providers can be affected by three broad categories of intervention: firstly, by improving performance directly by increasing knowledge or skills (eg, through education and training) or by changing attitudes or motivation (eg, through education and incentives); secondly, by increasing the availability of complementary resources for those providers, through improvements to facilities, amenities, or commodities such as medicines and diagnostics; or finally, by allocating tasks more efficiently among teams of providers who have various comparative advantages.

Improving the performance of individual providers

Educational programmes to increase medical competence

Medical knowledge deficits among practitioners contribute to poor quality care, but are not the main or only reasons according to the ten-country sub-Saharan African study described in the first paper in this Series.[22] There is extensive literature on educational interventions to improve primary care in LMICs, which generally shows that they are effective, but that the magnitude of effect is modest. 40 of the 74 LMIC city studies retrieved in our literature search (appendix p 8) included an educational intervention (in 15 studies this was the only intervention, while in 25 it was one of several interventions). In panel 2, we provide a set of evidence-based principles that should be considered when designing educational programmes.[6]

Financial incentives for improved provider performance

The well documented know–do gap in quality measurement literature suggests that even skilled providers do not put a large share of their medical knowledge into practice. Some of this underperformance can be put down to poor motivation or effort. Poor motivation is an archetypal indication for incentivisation. One commonly suggested method of incentivising providers to do what they know is to make a payment at clinical level for improved performance. However, others have theorised or found that financial incentives can displace intrinsic motivation and replace valuable activities not included in the incentive.[33–35]

Systematic reviews do not provide unequivocal evidence in favour of payment for performance. A review in high-income countries[36] found that payment for performance provided inconsistent results and observed that the incentivised action displaced other, worthwhile, actions. A Cochrane systematic review of payment for performance specifically in LMICs found that "the effects…on delivery and use of services is mixed overall"[11] and most studies were judged to be of uncertain quality.[11,37] In the Cochrane review, only 17 of the 59 reviewed studies compared payment for performance with a comparator investment, while 42 compared the payment for performance intervention with service as usual rather than with alternative uses of a similar amount of funding. In contrast, a World Bank study compared payment for performance with direct facility financing (DFF) in five sub-Saharan African countries. Again, payment for performance "adds little gain over

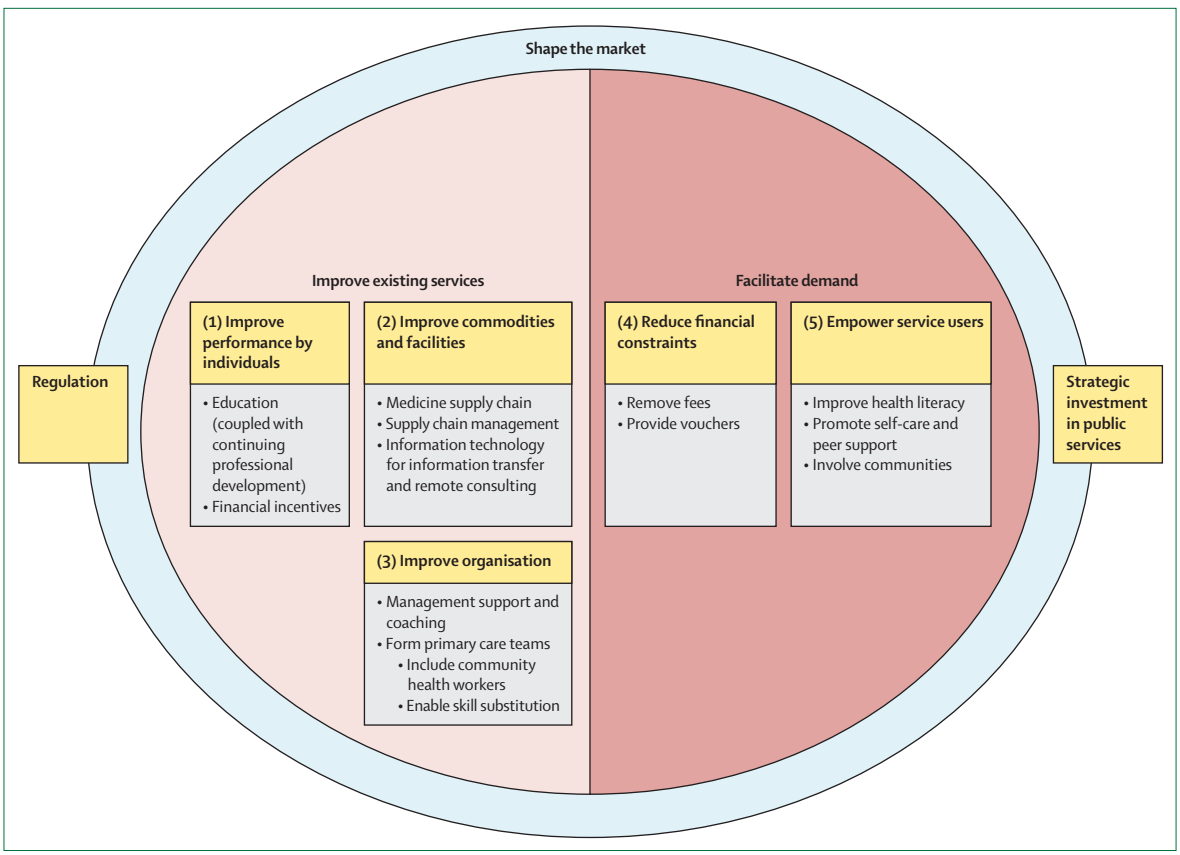

Figure: **Classification of interventions to improve primary care services**
Note, we do not discuss macro policies,[18-20] such as training the medical and nurse workforce, fiscal policy, or the built environment, that affect the whole health-care system, rather than primary care services in particular. Much of this material is covered in WHO reports[20] and a previous Commission in *The Lancet Global Health* on financing primary health care.[21] At the opposite end of the chain, we do not discuss micro policies (interventions) targeted at specific clinical areas such as tuberculosis, vaccination, and mental health.

DFF".[38] That said, a widely cited study (included in the Cochrane review) that compared payment for performance with provision of a similar amount of money for general use, observed positive effects of the intervention (on some outcomes),[39] and a cluster trial from Brazil published after the review found that payment for performance improved care, especially in impoverished areas.[40] Overall, we are circumspect about the value of payment for performance,[41] and note that there is a practical limit to the number of such initiatives to which clinicians can respond.

Supplies and facilities essential to good practice

Medical supplies (medicines, vaccines, diagnostics, equipment, and aids)

We observed—as noted in the first paper in this Series—that, without a large generics industry, as in Bangladesh,[42] some of the biggest problems for low-resource city dwellers are the cost, unavailability, and quality of medicines.[42,43] However, this problem is tricky because the supply chain is complex and a market clearing price should be set so that supply is ensured while keeping costs low to both patients and the public purse. Numerous approaches have been tried,[44] including public subsidy, where, as countries become richer, they can increasingly adopt financing mechanisms that cover costs more comprehensively, and pooling savings by implementing policies where service users club together to increase their purchasing power.[45]

Regulation is another approach; pharmacies are regulated in most LMICs, but regulation is poorly enforced, reducing its use as a policy instrument, for example to ensure suppliers hold minimum stock levels.[46] Simultaneously, there are arguments to regulate against allowing clinics to both diagnose and prescribe to avoid the situation whereby providers have a perverse incentive to overprescribe the most expensive medicines (and tests). Such regulation is possible in cities where there are plentiful pharmacies and laboratories, but not in rural areas where access would be restricted.

Finally, there is the issue of supply chain management combined with poor overall stock control and supply chain methods, and poorly written contracts, which lead to poor maintenance of equipment and stockouts of

***Panel 2*: Measures to capitalise on continuing professional development opportunities**

- The education programme should be carefully designed, starting with a needs assessment.[23]
- Training topics should include provision of person-centred care and use of appropriate referral pathways to reduce documented delay in diagnosis of diseases such as cancer.[24]
- Front-line interventions are most effective when backed up by supportive changes higher in the management hierarchy.[6] Education is an archetypal example as educational interventions can be sustained and knowledge reinforced[25] if they are incorporated in the continuing professional development frameworks that now exist in most low-income and middle-income countries.[18,26]
- As much as possible, learning should be active rather than didactic, and should promote problem-solving and self-directed learning.[27] A 2023 non-randomised study in China showed that small group learning and use of standardised patients to provide constructive feedback improves performance and patient satisfaction with subsequent consultations compared with more passive teaching methods.[28]
- Instructors should provide motivation and inspiration to help close the knowledge–practice gap and encourage team working and collaboration.[29–31]
- Those who commission education should be alert to the risk that educational providers will exploit any monopoly power to charge high fees, a problem described in the Philippines.[26]
- Programmes should be developed iteratively and evaluated wherever possible.[23,32]

vaccines and medicines.[47] A 2021 scoping review evaluated centralised dispensing and packaging systems for people with chronic diseases. The systems have used a range of alternative delivery mechanisms (ranging from smart lockers to home delivery), and have improved affordability, adherence, and reduced demand on facilities.[14]

Information systems and digital integration

There are a number of ways that information systems and digital integration could be used to improve practice, starting with monitoring quality. Routinely collected data can be used to help an organisation monitor its performance, covering criteria such as vaccination rates, antenatal clinic attendances, and follow-up of patients with HIV or hypertension. Such data can be used to audit performance against indicators, hence acting as a stimulus for improvement. The problem is developing a system for measurement of the necessary performance criteria, given that data collection systems are currently rudimentary throughout most LMICs, with exceptions such as Brazil.[48] The private sector in some countries collects data to enable billing and insurance claims, but not to purposefully measure the quality of care.[49] The development and implementation of universal health coverage could act as a stimulus to implement data collection. In time, such systems could incorporate patient electronic records.

Clinical records could be used to support clinical care. Modern health care requires that an individual is served by many providers, and in many places there is no system for information sharing.[50] Since relational continuity is inevitably interrupted, informational continuity is essential,[51,52] especially in cities where care is shared across a large number of providers. Although a system in Western Cape, South Africa, based on an inference or probabilistic approach to data linkage has achieved success in integrating fragmented individual electronic health data,[53] this is an exception and the difficulties in digitising notes are consistently underestimated.[54,55] There is a tendency to think immediately of electronic patient records,[21,56,57] but structured patient-held paper records[50] are an effective, but underused,[58] means of information capture and transfer according to a 2022 systematic review.[59] Pending development of effective digital solutions, we strongly and urgently advocate use of structured patient-held notes to improve informational continuity, as in the case of Kenya (and worldwide in the specific case of maternity care).

Virtual (remote) consultations (not to be confused with chatbots) are increasingly common worldwide and were vital during the COVID-19 pandemic. Our 2021 umbrella review of seven systematic reviews of this intervention in (mostly urban) LMICs all show patients benefiting.[55,60] There is, however, massive headroom to expand use of this innovation in city areas where people are employed in the informal sector and lose income when attending a clinic. Previous research has produced guidance on how mobile consulting or chatbots can be structured and deployed so people who are low-income and those who are marginalised are not excluded.[61,62]

There is an extensive literature on use of apps and messaging systems to provide health messaging to people—for example, medication reminders or diabetes self-management.[63] Mobile phones are highly available in LMIC cities, even in slum areas. However, only 88 of the 5322 households in a study of seven slums across four countries,[42] reported using their phone to access and receive health information, advice, or care in the previous 12 months.[60]

Improving organisations to enable more efficient service management

Primary care teams

In the first paper of this Series, we highlighted the crucial role that primary care services play in connecting communities with specialist care.[4] We also mentioned

(with examples from Brazil and South Africa) that these teams frequently include community health workers (or equivalents). Achieving national coverage with a network of such teams takes time—as shown by Kazakhstan's two decade process.[64] However, there are good arguments in favour of policies to gradually substitute multiple, poorly integrated providers for primary care teams, summarised in panel 3.

Vertical systems of care for specific conditions, such as tuberculosis, HIV, and maternal care, have been successful, but they cannot be provided for all conditions separately, and have limitations in terms of co-ordination for continuity across multiple chronic diseases.[72] The 2024 WHO primary health care global report is clear that some countries (such as Brazil, where the public sector plays a dominant role) have been more successful than others (such as India, where it does not) in transferring resources to primary care clinics and teams.[72] However, there are policy options for implementation of such teams—particularly whether they are incorporated in a hospital system and, if not, whether they act as gatekeepers in a system where access to hospital care is controlled. A study from China that compared these options favoured primary care teams that were financially and managerially independent of local hospitals.[73] Lastly, we cannot assume that the quality of care is automatically good in primary care teams according to evidence from South Africa[74] and China.[75]

Management support and supervision

One of the advantages of clinical teams over very small or single-handed clinics is that ready-made teams are available to receive the training and managerial support. Managers can be trained and coached to provide an environment supportive of improved performance and produce systemic change in attitudes. The effects of such management support in primary care in LMICs have been reported in recent studies,[76–79] including an 81 study systematic review of supervision.[80] These articles show generally positive effects, especially when supervision involves group problem solving. It is possible that regulation is most effective and sustainable when linked to more collaborative and supportive management styles.[81–84] The point we make here is that management training is a kind of education trying to change motivations and attitudes. Also, attitudes and motivation are key to clinical care—for example, the knowledge–practice gap described above. The corollary is that management or leadership training and clinical training are connected—they should be integrated,[85–87] as in the approach to improve primary cancer care in sub-Saharan Africa.[88]

Facilitating demand through consumer empowerment

It is important to implement measures to enable or encourage people to choose higher-quality providers (figure). In essence, the market described in the first paper of this Series should be augmented to function ever more efficiently by empowering people financially, better informing them, and facilitating collective action and advocacy in shaping services.

Panel 3: Advantages of creating a system of primary care teams based in primary care facilities and supporting community health workers

- Primary care teams, based in health centres or clinics, are a vehicle to integrate facility and community care. Incorporating community health workers within the primary care team offers an effective strategy for disease prevention[65,66]—for example, in ensuring more equitable vaccine coverage[67] and providing a direct route to medical care if a community health worker comes across a malnourished child or adult with chronic cough that might be caused by tuberculosis or cancer. However, it is important that roles and responsibilities are delineated explicitly.[68]
- Teams can provide the necessary coordination that is often missing in a fragmented system described in the first paper in this Series. Community health workers are often embedded in the community, have greater access to marginalised groups, and are socially acceptable. Their presence can also facilitate early discharge to the community, management of chronic disease and mental health, rehabilitation, and palliative care in line with WHO Disease Commodity Packages principles.[69] Thus, whereas a survey of returning patients in private clinics in Nairobi, Kenya, showed that care for such conditions is poorly co-ordinated,[70] a study of primary care teams in South Africa found much higher scores for co-ordination, continuity, and comprehensiveness.[71]
- Staff absences can be covered, thereby improving continuity of care.
- Teams form the framework around which clinical education and managerial support can be delivered.
- Teams form the vehicle for skill substitution (for example, where members of the team effectively take over tasks often associated with doctors). A 2018 systematic review showed that such substitutions are cost effective.[15]
- Teams provide an environment where the doctor is available when needed.[7,9]

Improving the affordability of primary care services

Remove or reduce user fees for public services

As shown in the first paper in this Series, user fees tend to suppress demand,[89] including for preventive care and particularly for children. A systematic review of financing interventions in the Asia–Pacific region (covering two-thirds of the world population) found that removing user fees improved care when public facilities were remote or of very poor quality.[8] A randomised trial of removing user fees for children in Ghana not only resulted in increased

use of public services but also improved health outcomes,[90] whereas a study in Malawi showed that user fees had a particularly disadvantageous effect on children.[91] Thus, there is a strong argument for reducing user fees by governmental and non-governmental organisations whenever possible.[92]

Contracting private providers from public funds

There are many examples where copayments are provided for independent providers to provide services, either directly or by providing vouchers or insurance for patients. These have been successful in reducing user fees and increasing equality of access and quality in Uganda,[92] improving equity and care of primary care in the Asia–Pacific region,[8] improving diabetes care in Mexico,[93] and reproductive care, again in the Asia–Pacific region.[94] Likewise, four social insurance schemes examined by the World Bank improved access to various degrees, depending on how generous they were.[8] Additionally, there are examples where the private and public sectors have collaborated and produced promising results, such as contracting out primary care service to non-governmental organisations in the Urban Primary Health Care Project by the Government of Bangladesh,[95] working with private doctors with managerial and technological support from a non-governmental organisation in the Mohalla Clinics of Delhi,[96] and implementing agreed referral pathways in Kenya.[97,98]

Based on economic theory, providers in urban environments might be more responsive than those in rural environments to the incentives provided by copayments since they work in a competitive environment. Therefore, the purpose of such contracting might not be to generally increase the availability of services, but to harness scarce information about quality to drive demand by strategically subsidising or implicitly endorsing better-performing providers.

Community financing

Community financing is a term coined in the 1980s[99] to include self-help forms of financing strategies including revolving drug funds, community health insurance, and savings groups. These mechanisms pool local resources[100] to support the costs of health-care for those who fall sick.

Initial enthusiasm for initiatives such as the UN Bamako Initiative[100] waned in the 1990s after funds contributed were found to be insufficient to sustain the regular supply of medicines.[101] More positive evidence associated with newer models has emerged more recently in the form of large prescription savings groups,[45] since adopted by Nairobi County, Kenya. In these models, the collective savings for the group used to procure medicines at a wholesale price make medicines more affordable to the patients. Nevertheless, this model is a novelty and small-scale user fees, alongside limited voluntary insurance models, are the more common interpretation of the term community financing globally, and are more commonly features of rural than urban areas.[102–104] These models tend to result in the exclusion of the poorest, unless subsidised, and sometimes even if subsidised.[101,105–107]

Lastly, there has been interest in savings groups as a poverty alleviation method in development economics. Of particular interest here are initiatives that combine community action groups to provide peer support and improve health for chronic conditions with micro-economic initiatives. These have been used in rural areas to support people affected by leprosy,[108] and, more recently, a pilot study of a self-help group for patients with hypertension, diabetes, or both has produced promising results in a slum in Nairobi, Kenya. (Asiki G, et al., unpublished)

We do not have space here to consider the large and complex literature on conditional cash transfers that incentivise specific behaviours such as attending antenatal clinics or vaccination, nor non-conditional transfers, which belong in the general realm of development economics.[109,110]

Informing and empowering patients to make better choices

Community and peer self-support groups might be of value even if they do not include financing activities as a feature of self-help groups. Such peer support or self-care groups provide psychological support and share knowledge to improve health literacy and help people navigate the health-care system, guiding people to registered (ie, qualified) providers, well supplied medicine outlets, and appropriate specialist services. Such groups can build on existing support networks that exist, for example, in slum communities.[111] There is a large amount of literature on such groups that is mainly positive, but a systematic review of seven cluster trials[112] provides some evidence that they work better in rural areas than cities—perhaps because people in cities more often have to leave home to work in the informal sector, and therefore cannot easily participate in community groups.[97] Likewise, there is literature on the use of paid navigators to support people, especially those with low health literacy, to overcome barriers on the health-care pathway.[113]

Moving beyond informing and supporting individuals to access appropriate health care, communities can help shape services that affect them in line with WHO people-centred and integrated care principles.[114] Following this principle will help ensure that services meet diverse needs provided that the most vulnerable, including unregistered migrants, are included.

Improving the composition of the provider population (market shaping)

As noted in the first Paper in this Series, the profusion of small, mostly private, clinics is associated with poor

quality services. This is evidence of market failure and could even lead to calls for an outright ban on private care. However, we reviewed the evidence (observational and experimental) in the first paper in this Series and found no clear winner in the public versus private debate. As argued in a previous Series on universal health coverage,[115] there is no good argument to ban private practice outright. The problem then is to improve quality without reducing access.

In this section we discuss policies to manage or shape the market, rather than abolish it, by exerting influence over the quality of the provider population (figure). Specifically, this type of approach is predicated on the idea that policy can either encourage new higher-quality providers to enter the market or cause existing lower-quality providers to exit, while maintaining a large enough provider population that access, choice, and competition are not compromised. Two (non-exclusive) options present themselves to shape the market.

Investing in public services

In low-density settings, natural monopolies are likely to emerge in primary care provision, and therefore direct public service provision (much like a utility) is often viable as the main policy approach. In dense environments, however, the market will offer diversity, and the expansion of public services should be used strategically to influence the choices of private provider facilities, as well as of care-seekers, with knock-on effects for outcomes from the mixed public and private market overall.

There are numerous arguments that public investment is not only a benefit in and of itself, but that it also has market-shaping potential. First, this idea is in line with the economic theory that high-quality services crowd out poor-quality providers while encouraging those that remain to improve. Second, there is evidence that competitive pressure can drive up quality, including in health care.[116,117] Third, countries that spend more on public services with reasonably remunerated practitioners have fewer small-scale and informal providers.[118] Fourth, we know that in LMIC cities the fundamental ingredient for market pressure is present since patients actively seek out high-quality providers, bypassing those of lower quality, as shown in the first paper in this Series. Finally, modest increases in Indian State health spending were associated with substantial substitutions of public for private care (especially for disadvantaged groups).[119]

In dense urban environments, there is emerging evidence that public investment does not only crowd out low-quality providers, but also that the agglomeration effects might, on net, crowd in new high-quality private services. This effect was seen with respect to hospital provision in a 40-year natural experiment in Malaysia, where political constituencies tended to acquire new public hospitals when their member of parliament was promoted to the cabinet, and where a new public hospital caused private hospitals to be built nearby.[120] The theory is that the new public hospitals created a favourable labour market that more than compensated for the more competitive customer market. Evidence regarding regulation (panel 4) suggests that this phenomenon might also occur in primary care. In conclusion, not only is public investment in facilities likely to shape markets, but also to be more scalable and sustainable than outreach quality improvement initiatives that should be delivered to each facility repeatedly.

Regulation of private health-care provider organisations

Regulation of services with a view to improving provider quality involves a legal framework, a regulatory body, registration of provider units, setting standards, conducting inspections (audits), and enforcement. As with the crowding out theory, regulation might cause some clinics to close and others to improve.[76] Regulation could improve quality of care by a number of theoretical mechanisms: removing the worst clinics; acting as an incentive for clinics to improve; creating an environment in which new providers with the potential to provide high-quality services believe they can thrive and therefore enter the market; or providing information about where improvement is most urgently needed. Further to this last point, regulation could be coupled to improvement initiatives, as seen in the examples from South Africa and Tanzania.[76,79]

Most countries now register and regulate formal (allopathic) providers and pharmacies. For example, in Africa, the organisation SafeCare provides regulation services across a large number of countries.[126] As with payment for performance mentioned above, regulation faces a measurement challenge: regulators should define, ascertain, and then act on measures of quality. This opens extensive possibilities for misclassifying providers (in both directions) and, as shown in the first paper in this Series, the measurement of care quality itself is a complex task. It becomes more so when it has consequences for providers who will frequently game the system by manipulating the measurements.[127] Until recently there was scant high-quality evidence on the effectiveness of regulation of primary care providers, but now two randomised controlled trials have become available, both with positive results. The literature is summarised in panel 4.

Finally, regulation and enforcement can be a powerful policy tool driving up quality and shaping the provider market, but more work is needed to find the most cost effective approach for different types of providers. Furthermore, context is important and trial evidence shows what can work, but not what will—for example, regulation can open the door to corruption. This consequence is a risk when the government has limited capacity and in cities where there are overlapping jurisdictions with different interests. We recommend that regulation is phased and evaluated and well regulated itself.

***Panel 4*: Evidence of effect of regulation on health markets**

- In 2011, Flodgren and colleagues carried out a Cochrane systematic review into evidence regarding the effects of regulation,[121] which was updated in 2016,[122] and then by WHO as part of their recent guidance. Two evaluations of regulation were found, only one of which was in a low-income and middle-income country (LMIC)—a cluster-randomised, controlled trial of the Council for Health Services Accreditation scheme for South Africa. The intervention was based on an inspection visit, including assisting in enabling the facility to improve on sub-optimal standards. This study showed a marked improvement in practice in the intervention group compared with the control but does not provide evidence on regulation alone.
- Bedoya and colleagues reported results from their randomised trial of a regulatory reform in the health sector.[117] The authors evaluated the 1-year effect of this intervention. To evaluate this reform, the authors divided all 1348 health facilities in three Kenyan counties into 273 markets, and then randomly allocated the markets to treatment and control groups. Government inspectors visited intervention health facilities and, depending on the results of their inspection, recommended closure, or a timeline for improvements; 25% of all private facilities were shut down by the government in the intervention group. The authors first show that the intervention improved quality of care as measured by adherence to a checklist of patient safety and structural measures, without any decline in patient loads or increase in prices. The authors found that 87% of the increase in quality was due to improvements in existing facilities, only 5% was due to an increase in closures, and the remaining 8% was due to the entry of new facilities (consistent with the crowding in hypothesis). The authors show that the latter is likely due to removal of cheaper low-quality provider facilities in a market where higher quality is rewarded through the regulatory system. The authors concluded that, in this case, instead of reducing competition in the market (as is often the case), regulation seems to have increased it.
- We found two additional randomised controlled trials involving pharmacy regulation in LMICs,[123,124] both showing improvement in pharmacy practice, but, in each case, regulation was combined with other interventions, such as training pharmacists. A recent systematic review examined the role of regulation enforcement and various forms of education that were mostly effective in reducing over-the-counter sale of antibiotics, especially where multiple strategies were concerned.[125]

Discussion

The key theme of this Series is that cities provide an environment in which it is possible to move beyond traditional clinic-level interventions and instead improve the average quality of services in urban markets by (indirectly) exerting influence over provider choices of whether and how to participate in the market. We refer to these strategies as market shaping as they primarily operate through changing the composition of the provider population, and careful stewardship of the rules of exchange. For example, in the US health market, insurers and government payers shape the market by including or excluding providers from their coverage networks, and by setting restrictions on pricing and agglomeration that affect provider decisions to offer various services within those networks.

There are several ways to shape the market. Regulation can simultaneously remove low-quality providers, improve the quality of remaining providers, and encourage new, high-quality entrants (including direct public provision). We have provided numerous strands of evidence to support the theory that greater public investment is associated with crowding out of poor-quality providers. Evidence shows that providing high-quality services can crowd in new providers. The theory here is that a high density of providers in cities, with lower densities in towns and peri-urban areas (described in the first Paper in this Series), could be the result of crowding in through agglomeration of clinical services. The phenomenon of crowding in or agglomeration is well supported in general economics.[128,129]

Market shaping is arguably more scalable and sustainable than quality improvement initiatives requiring direct public expenditure. Reshaping the primary care services market in cities thus has greater potential effect compared with even the most successful individual clinic-level programmes.[130]

In addition to the conventional improvement strategies that improve existing services at supply and demand sides (figure), there is evidence supporting education (incorporated with continuing professional development), improving information systems (using paper-based, patient-held notes where digital technology cannot be implemented in the short term), and providing remote consultation options. Managerial support is effective, but is only applicable where teams already exist and might be difficult to scale and sustain. Conversely, strengthening primary care teams is an effective method to improve clinical practice, while providing co-ordination of prevention services and chronic care, along with its market-shaping potential. Likewise, regulation (perhaps especially if combined with management support) has both direct potential benefits alongside market-shaping potential. However, there are some interventions where we think the evidence is more equivocal, pending additional research, including payment for performance, and more research is needed regarding innovations to improve availability of equipment and medicines.

There are good reasons to inform patients to make them discriminating citizens and to mentor self-help or peer support groups. These measures contribute to market shaping. Removing user fees and providing free or discounted medicines for people with long-term conditions are priorities in overcoming important barriers to health care. However, policy makers can only remove fees for services they provide. To influence other parts of the service, services can be contracted out or public subsidies to support wider access to private services can be provided. We find these subsidies can be effective in improving access, and that revolving drug funds and community health insurance savings groups are not sustainable (or equitable) without external support. This reliance on subsidies leaves an open question for policy makers who can invest in either public services (expanding services and reducing user fees), providing subsidies, or both. It might be the case that different balances between these options are more

suitable than others according to the state of current development of services and the broader economy. The question of the role of the state in buying versus supplying services is not resolved in economies of any scale. However, in LMICs where health services are scarce or unequally distributed, expanding public provision and promoting health equity should be priorities.

It is important to recognise that policy interventions play out differently in different contexts. First, clumsy implementation where policy makers and practitioner objectives are not aligned can stymie interventions—a 2023 special series by Schneider and colleagues draws attention to potential implementation pitfalls.[131] Second, interventions such as regulation and education based on continuing professional development can be misused by unscrupulous service providers, as described above. Third, interventions can induce unintended effects and back-fire; for example, payment for performance can cause priorities to be distorted, revolving drug funds can widen disparities, and removing fees for drugs can lead to prescriptions of unnecessary medicines. Fourth, an effective intervention is not necessarily cost effective; the opportunity cost should always be considered. Fifth, there are strong arguments to compare different designs within a class of interventions. For example, we have advocated primary care teams, but these can be designed in different ways—as an extension of the hospital service or independent, in which case they might or might not have a gatekeeping function. We found only one study, conducted in China, that has compared these three alternatives head-to-head.[73]

Many studies combine interventions into compound packages—for example the BRAC Manoshi programme of community engagement,[132] and a package involving self-care, community health worker outreach, and community engagement that was effective across a number of health outcomes in a randomised controlled trial in slums in Mumbai, India.[133] A combination of community activation and provision of accessible mobile outreach services resulted in improved uptake of vaccination in a large, non-randomised cluster study in Pakistan with substantial effect on reducing inequities.[134] Most urban primary care system interventions are combined, posing challenges for evaluation.

The key point is that provider and consumer incentives are jointly determined and interventions on one side can bolster the other. For example, public funding for care at private facilities, whether through sub-contracts, vouchers, or public insurance, can depend on facilities meeting regulatory requirements and quality standards. This strengthens provider payoffs to and incentives for complying with regulatory standards, while channelling patients to free or affordable but higher-quality providers. Again, evaluations should assess the broader effects of interventions, especially on reducing health inequalities.

We have highlighted the paucity of evidence. First, there is no clear evidence on towns and peri-urban areas where the tendency for providers to crowd in around specialist and training centres might be more attenuated. Second, there is little evidence from the most marginalised urban groups—those who are unregistered or have no fixed abode. Third, LMICs cover a wide range of economic development, and more research and evidence are required on the different needs and opportunities over these very different contexts; the data presented here are weighted towards the low-middle-income stratum. Fourth, we are only at an early stage of developing an evidence base. Many studies evaluate an intervention versus no intervention, but then make no attempt to assess the opportunity cost, and hence value for money. Fifth, few interventions compare alternative types of interventions. Many studies combine intervention types, but then do not examine the effects and costs of individual components and their possible interactions using factorial designs for primary studies or network meta-analysis for systematic reviews. Sixth, it is crucially important to evaluate the whole causal chain connecting intervention to outcome so as to deepen scientific understanding and to estimate how effects will change by context.[135–137] Seventh, interventions need to evaluate outcomes that go beyond intended outcomes. Finally, most studies come from low-income and low-middle-income countries, with little research from middle-income countries, although insights from the latter, particularly on the development of primary care teams, are highly relevant to lower-income countries.

We might expect a gradual expansion of resources in LMIC health services. First, we might anticipate growth in LMIC economies, even if the rate of growth fluctuates (eg, real yearly economic growth averaged between 4% and 6% across low-income countries between 2001 and 2018).[138] Second, resource allocations to health care as a whole are set to improve under the impetus of universal health coverage and countries' existing commitments. Third, primary care and health services are moving centre stage. The 2024 WHO report on primary health care summarises the systematic review literature to show that investing in primary care improves health, reduces costs (by reducing the need for hospital treatment), and boosts health equity.[72] There is also evidence of an economic payback from health care resulting from a more productive workforce and less poverty from catastrophic out-of-pocket payments. We add our voice to the many who advocate for rebalancing towards primary care and prevention, which countries have signed up to in the spirit of the Astana Declaration.[139]

Conclusion

We have reached an optimistic stage in the development of primary care services in LMIC cities. The evidence base on new meso-level strategies is growing rapidly, with new studies evaluating regulatory policies and market-shaping interventions. However, more research is required, especially examining how interventions play

out across the spectrum of LMIC city contexts, evaluating their full causal pathways and cost effectiveness, and exploring their interactions and unintended effects. The need for more research is especially true for the most vulnerable urban populations. Increased future investment is likely and we have suggested potential interventions, not all of which will be equally successful or provide equivalent payback to investment. Cities are the drivers of economic progress—they are where most people in LMICs now live—and the market for primary care services can be reshaped in cities. It is important to develop and evaluate novel approaches to health policies across LMIC cities so that they can realise their potential to create wealth and health.

Contributors

All coauthors contributed to reviewing and editing drafts and approved the final submission. BD: writing the original draft, figures, method, resources, data curation, and formal analysis. BM: conceptualisation, writing the original draft, and method. EPP: conceptualisation and writing the original draft. GA: conceptualisation and literature search. JD: conceptualisation, formal analysis, method, supervision, and writing the original draft. JS: project administration. KabS: conceptualisation. PJC: project administration and visualisation. RJL: conceptualisation, funding acquisition, investigation, methodology, project administration, supervision, visualisation, writing the original draft, and systematic reviewing. SIW: conceptualisation and method. Y-FC: literature search for the review of systematic reviews and advised on the scoping review. ZAB: writing the original draft and method. BD, JD, KSca, RJL, and SIW directly accessed and verified the underlying data reported in this manuscript.

Declaration of interests

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