

Strengthening medical specialisation policy in low-income and middle-income countries

Veena Sriram ,¹ Sara Bennett ²

To cite: Sriram V, Bennett S. Strengthening medical specialisation policy in low-income and middle-income countries. *BMJ Global Health* 2020;**5**:e002053. doi:10.1136/bmjgh-2019-002053

Handling editor Seye Abimbola

Received 7 October 2019
Revised 10 December 2019
Accepted 22 December 2019

ABSTRACT

The availability of medical specialists has accelerated in low-income and middle-income countries (LMICs), driven by factors including epidemiological and demographic shifts, doctors' preferences for postgraduate training, income growth and medical tourism. Yet, despite some policy efforts to increase access to specialists in rural health facilities and improve referral systems, many policy questions are still underaddressed or unaddressed in LMIC health sectors, including in the context of universal health coverage. Engaging with issues of specialisation may appear to be of secondary importance, compared with arguably more pressing concerns regarding primary care and the social determinants of health. However, we believe this to be a false choice. Policy at the intersection of essential health services and medical specialties is central to issues of access and equity, and failure to formulate policy in this regard may have adverse ramifications for the entire system. In this article, we describe three critical policy questions on medical specialties and health systems with the aim of provoking further analysis, discussion and policy formulation: (1) What types, and how many specialists to train? (2) How to link specialists' production and deployment to health systems strengthening and population health? (3) How to develop and strengthen institutions to steer specialisation policy? We posit that further analysis, discussion and policy formulation addressing these questions presents an important opportunity to explicitly determine and strengthen the linkages between specialists, health systems and health equity.

INTRODUCTION

Specialists, defined here as those doctors with advanced training within a narrower field of medicine, are essential actors in health systems. In some countries, such as the USA and post-Soviet states, specialists make up the majority of doctors, directly providing or overseeing most primary or specialist healthcare.^{1 2} In other countries, particularly low-income and middle-income countries (LMICs), specialists make up a lower proportion of doctors, but provide primary or specialist care either independently or as part of a referral system. In all settings, specialists

Summary box

- ▶ Medical specialisation is accelerating in low-income and middle-income countries (LMICs), with a growing proportion of doctors organising their careers around specialist training.
- ▶ Policy initiatives are underway in LMICs to increase access to specialists in rural health facilities and improve referral systems.
- ▶ Despite the growing prominence of medical specialties in LMIC health systems, many policy questions related to medical specialisation are still underaddressed or unaddressed in LMIC health sectors.
- ▶ We propose three critical questions in specialisation policy that hitherto have been neglected: (1) The types and numbers of specialists. (2) The linkages between specialists' production and deployment to health systems. (3) The development and strengthening of institutions and organisations to steer specialisation policy.
- ▶ In most LMICs' policy development at the intersection of essential health services and medical specialties, is necessary and integral to addressing issues of access and equity; failure to formulate policy in this regard may have adverse ramifications for the entire system.

help organise and lead systems of academic medicine, advance teaching and research, and play a major role in developing policy.

Medical specialisation continues to accelerate in LMICs, with a growing proportion of doctors organising their career plans around securing postgraduate training.³ The types of specialties being introduced in LMICs continue to expand, due in part to transnational networks of physicians advocating for the diffusion of specialties, global and national market forces, and scientific and technological advances in medicine.^{4 5} Many LMICs experience a major shortfall of specialists, particularly in the public sector, impacting service availability and affordability, and the achievement of universal health coverage (UHC) goals.⁶ The role of specialists continues to be a core element in



© Author(s) (or their employer(s)) 2020. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

¹Center for Health and the Social Sciences, University of Chicago, Chicago, Illinois, USA

²Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA

Correspondence to

Dr Veena Sriram;
vsriram@uchicago.edu

approaches to health systems strengthening, with policies and programmes addressing ways to increase access to specialists in rural health facilities and improve referral systems, particularly in the context of primary care-led systems where general practitioners and family physicians play a central role.⁷ However, regions within LMICs, such as cities, with better specialist supply experience a ‘bypassing’ of primary care, with patients directly seeking specialist care.⁸ Such a phenomenon, where specialists work outside or in parallel to a primary care-led health-care system, raises major concerns around efficiency, overmedicalisation, affordability and possibly, quality.^{8–10}

Despite evidence of growing attention to the issue of specialists’ role within health systems, many important policy questions are still underaddressed or unaddressed in LMICs. For example, while much of the existing guidance, commentary and analysis regarding UHC correctly pertains to primary care and financing,^{11–13} there has been more limited engagement with specialisation and its impact on UHC, and the health system as a whole. Engaging with these issues may appear to be of secondary importance, compared with more pressing concerns regarding primary care and the social determinants of health. However, we believe this to be a false choice. Policy and systems issues pertaining to specialties are central to issues of access and equity, and failure to formulate policy in this regard may have adverse ramifications for the entire system. These issues are heightened in the context of UHC, where the role of specialists in national service packages is a key part of addressing the question posed by Chalkidou *et al*¹⁴—‘how comprehensive is comprehensive?’.

In our research on human resources for health, we have examined specialisation in LMICs from several angles, including production, distribution, task-shifting and policy processes.^{4 15–20} Drawing on this body of work, and supported by evidence from the broader literature, we describe in this analysis three critical and interlinked policy questions on medical specialties and health systems with the aim of provoking further analysis, discussion and policy formulation.

WHAT TYPES, AND HOW MANY SPECIALISTS TO TRAIN?

In many LMICs, two critical areas of specialisation policy receive limited attention—decision-making on the types of new specialties and the distribution of specialist training opportunities across different types of specialties.

Medical specialties are ‘established’ or ‘recognised’ in LMICs through what are often assumed to be apolitical policy processes. However, our research from India suggests that these processes are deeply political and contested, driven by a combination of factors that include market forces, diffusion of ideas through elite, transnational networks, and the continued primacy of ‘western’ biomedical knowledge.²¹ Our research further suggests that specialty recognition is delinked from a broader policy process that explicitly articulates a vision for how

that specialty will engage with the health system.⁴ For example, the decision as to whether or not to approve a new specialty should be guided by an understanding of the services that these specialists will provide; the type of facilities that they will work in, and how the new specialty will engage with other medical, nursing and paramedical disciplines. These are critical policy questions that currently receive little direct attention from policy-makers, practitioners and researchers alike, but which should be linked with priority-setting in the health sector, including around UHC.¹⁴

The question of how many physicians to train within different specialties is rarely intentionally addressed within the policy process, and is often left to market forces.^{22–24} Medical schools offer or expand training programmes in particular specialties that have considerable student demand, for reasons that include employment opportunities, salaries on employment or opportunities for work in high-income countries.²⁴ As a result, certain specialties are saturated, while others that are clearly important for addressing population health, such as family medicine, have few students.²⁵ However, it is unclear exactly how these imbalances across specialties may be corrected, and what the role of government should be.^{22 23} Rwanda is one example where the ministry of health has taken an active role in determining the skill mix of new specialists; a recent Human Resource for Health Strategic Plan notes that the exact distribution of 627 specialist training seats is driven by disease burden and epidemiological factors.²⁶

Decision-making must also engage with the broader question of how to balance the number of specialists vis-à-vis other types of health workers. While solid evidence from LMICs is lacking, evidence from USA suggests that geographical areas with higher densities of specialists, and lower densities of general practitioners, have higher costs and lower quality of care.²⁷ Further, increases in both the number of specialties and the number of specialists may have adverse implications on care. For example, by virtue of their training, specialists are more likely to suspect more severe pathologies, and accordingly prescribe more drugs and investigations.²⁸ While this evidence from high-income countries is indicative of concerns associated with excessive reliance on specialists, in practice, actual consequences of the mix of specialist vis-à-vis other health worker mix will be heavily mediated by the design of the health system.

HOW TO LINK SPECIALISTS’ PRODUCTION AND DEPLOYMENT TO HEALTH SYSTEMS STRENGTHENING AND POPULATION HEALTH?

Two aspects of health system design are particularly relevant to understanding the role that specialists may play within the health system, namely (1) The extent to which unbridled market forces drive specialist employment. (2) The strength of primary care systems, and specialists’ position within them.

Introducing new specialties or expanding the number of training opportunities in a field may not necessarily translate to improved service availability, particularly for the poor. In many LMICs conditions in the public sector such as remuneration packages and career advancement opportunities are insufficient to attract specialists, and result in many specialists either seeking employment in the private sector or migrating overseas. For example, Jenkins *et al*²⁹ found substantial migration of psychiatrists with specialist training from South Asia to the UK, Australia, New Zealand and USA: with 129 Sri Lankan psychiatrists working overseas compared with 38 at home, and 4682 Indian psychiatrists working overseas compared with 2162 at home. The challenges in terms of getting specialists to locate in rural areas can also be particularly acute. In the Uttar Pradesh public sector health system, for example, relatively poor rural districts have less than 2 specialists per million, whereas the state capital, Lucknow has about 50 specialists per million—a 25-fold difference. This compares to about a sixfold difference for non-specialist doctors in the state between best-endowed and least-endowed districts.²⁰ The geographical distribution of specialists clearly influences equitable service delivery. Recent research in China clearly demonstrated income-related inequalities, with much greater use of specialist services among wealthier households.³⁰ In other words, linking specialist generation to health equity requires a deliberate strategy and is unlikely to happen if left to market forces.³¹

Ideally, policy on the development of specialist cadres should take account of questions such as, at which level of the health system will specialists be employed? What type of task-shifting could be considered for non-specialists at primary and secondary levels, particularly during the transitional period of generating more specialists? What is the role, if any, of practitioners of non-allopathic systems of medicine? What types of community sensitisation and health promotion programmes need to be considered so as to ensure appropriate use of specialist services? Do referral systems need strengthening so as to ensure effective communication and patient transfer? Delving into these policy questions may yield considerable benefits for stakeholders seeking to effectively close the ‘treatment gap’ and integrate specialty services into the broader health system in a fashion that strengthens primary healthcare.³¹ For example, in India, psychiatry and palliative medicine are specialties where stakeholders are testing community-based services as integral components of integrated service delivery.^{32 33}

Even where this kind of careful consideration of the role and fit of specialists within the health system does take place, budget availability in the public sector may make it extremely challenging to recruit and retain specialists in a fashion that promotes equitable access to their services. Again evidence is limited, but research from Indonesia suggests that specialists practising in both public and private settings draw considerably more income from the private sector.³⁴ Further, while many

countries have policies that prioritise access to specialist education for those who have served in the public sector, or in rural areas, and thus manage to incentivise general doctors to work publicly, this incentive obviously evaporates for specialists. In light of this, models of specialist deployment used in high-income countries may need to be completely rethought for LMICs. For example, a recent paper on specialist anaesthetists proposed that a minimum standard in LMICs would be four specialist anaesthetists per 100 000 population.³⁵ In Uttar Pradesh however, where there is a total of 297 specialist anaesthetists in the public sector (private sector numbers are unknown) for a population of 232 million (or 0.13 per 100 000 population) this seems like an unrealistic target. In the medium term at least, alternative models of deployment of specialists where core tasks are transitioned to less qualified doctors, with close supervision and support from specialists, need to be considered.

More attention also needs to be paid to the applicability of policies such as those described above to the private sector (which in many LMICs is only weakly regulated) and the scope to harmonise specialist policies across public and private sectors. One particular example concerns the growth in numbers of specialists whose fields are more prominent in the private sector. For-profit hospitals typically distinguish themselves from the competition with particular forms of specialty care. Consider plastic and reconstructive surgery, often viewed as a specialty largely targeting the wealthy due to its association with aesthetic surgery. However, while these surgeons face the greatest demand in the private sector, they also provide essential services in a number of areas, including burn surgery and craniofacial surgery. In the list of essential services for UHC in Disease Control Priorities 3,³⁶ basic skin grafting is considered a non-urgent, but essential service. Without innovative and carefully crafted policies (incentivising specialists to dedicate time to essential, but less well paid services, as well as less essential ones), UHC is unlikely to be achieved. There are also likely to be questions, especially in smaller countries, about how to produce the small numbers of specialists needed for such services. Given economies of scale in higher education, many LMICs are unlikely to be able to train such specialists (or train sufficient numbers) domestically, and therefore will be reliant on trainees returning from high-income countries—probably an unlikely prospect.

HOW TO DEVELOP AND STRENGTHEN INSTITUTIONS AND ORGANISATIONS TO STEER SPECIALISATION POLICY?

Many LMICs struggle with defining institutional roles and responsibilities pertaining to specialisation. One reason for this challenge is that specialisation policy is often handled by groups adjacent to national or state health authorities, such as professional medical councils, voluntary medical associations or medical colleges. Professional medical councils, with or without involvement from the ministry of health, may define which specialties

should be recognised as well as how many training seats should be available. Such councils or boards typically also oversee the training curriculum thus having a direct impact on the competencies of graduating specialists, as well as setting standards for continuing medical education and recertification. While the authority of many Medical Councils is delegated from the government (ministry of health), in practice the degree of communication and alignment of goals between medical councils and ministries is often limited.⁴ In contexts where medical education is largely public this may not be problematic—decisions about the growth of specialties may be largely made through government policy—but where private sector participation in medical education is significant, medical council and ministry of health agendas may diverge. Further, evidence suggests that professional councils or boards in LMICs suffer from major capacity challenges.³⁷

Professional medical associations are voluntary membership organisations that by contrast have a direct mandate to represent the interests of their membership, and including in this case, their specialty. Accordingly, they may play a critical role in sanctioning (or opposing) task-shifting of services from specialists to doctors and other mid-level providers; for example, the Federation of Obstetricians and Gynecologists of India supported a task-shifting programme for obstetrician services for emergency obstetric care (EmOC), while the Indian Society of Anesthesiologists initially resisted a similar programme for anaesthesia services for EmOC.^{18 38} While medical associations may have limited rational-legal authority, collectively the expertise and status of their membership can be extremely influential. It would be important to channel this power and influence towards an integrated, holistic and coordinated approach to health systems strengthening, rather than promoting specialty care at the expense of primary care or social interventions.^{10 39}

Underlying these challenges is the relatively silent role of ministries of health with regards to the aforementioned policy issues. This is not to say that ministries do not engage with issues around specialisation or specialists—there are several examples of national or state health authorities paying close attention to producing certain types of specialists or incentivising rural posting of doctors by controlling access to specialist training programmes.^{40–42} However, such efforts tend to be piecemeal, with emerging evidence of institutional fragmentation in the governance of specialisation, and ministries adopting a lighter touch in this area when compared with other health workforce concerns.⁴ Established norms around professional self-regulation for specialists and the perception of more serious concerns such as the production and distribution of non-specialist doctors, nurses or other mid-level providers might have contributed to this scenario, but there is clearly room for national and subnational authorities to play a more direct role.

CONCLUSION

Medical specialties will continue to grow in LMICs, fuelled by diverse factors that include epidemiological and demographic shifts, doctors' preferences for post-graduate training, patient preferences for specialist care, income growth, transnational knowledge flows and medical tourism. Stakeholders should consider ways to actively integrate these specialties into primary health-care-led systems, rather than risk further fragmentation down the road. In this commentary, we have highlighted three critical policy questions pertaining to medical specialties in LMICs. Successfully addressing these questions will require collaboration between government, professional associations and networks of specialists, other health professionals, civil society and researchers—as well as explicit consideration of how markets for specialist services will influence policy success. It will also require much stronger data and analysis than is currently available, so as to understand, for example, the role that medical specialists currently play in health systems, how their training prepares them for this, and experiences with integrating new specialties. Ongoing efforts around UHC and the Sustainable Development Goals present an important opportunity to explicitly determine and strengthen the linkages between specialists and health systems.

Acknowledgements Our thanks to the anonymous peer reviewers whose suggestions improved this manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement No additional data are available.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iDs

Veena Sriram <http://orcid.org/0000-0001-7235-253X>

Sara Bennett <http://orcid.org/0000-0001-8094-8798>

REFERENCES

- 1 Fuchs VR. Major trends in the U.S. health economy since 1950. *N Engl J Med Overseas Ed* 2012;366:973–7.
- 2 Karanikolos M, Kühlbrandt C, Richardson E. *Health workforce, in: trends in health systems in the former Soviet countries*. Copenhagen, Denmark: European Observatory on Health Systems and Policies, 2014.
- 3 World Health Organization. *Primary health care: now more than ever*. Geneva, Switzerland: World Health Organization, 2008.
- 4 Sriram V, Baru R, Bennett S. Regulating recognition and training for new medical specialties in India: the case of emergency medicine. *Health Policy Plan* 2018;33:840–52.
- 5 Shawar YR, Shiffman J, Spiegel DA. Generation of political priority for global surgery: a qualitative policy analysis. *Lancet Glob Health* 2015;3:e487–95.
- 6 Holmer H, Lantz A, Kunjumen T, et al. Global distribution of surgeons, anaesthesiologists, and obstetricians. *Lancet Glob Health* 2015;3 Suppl 2:S9–11.

- 7 Kruk ME, Gage AD, Arsenault C, *et al.* High-Quality health systems in the sustainable development goals era: time for a revolution. *Lancet Glob Health* 2018;6:e1196–252.
- 8 Mash R, Almeida M, Wong WCW, *et al.* The roles and training of primary care doctors: China, India, Brazil and South Africa. *Hum Resour Health* 2015;13:93.
- 9 Rothman AA, Wagner EH. Chronic illness management: what is the role of primary care? *Ann Intern Med* 2003;138:256–61.
- 10 Hone T, Macinko J, Millett C. Revisiting Alma-Ata: what is the role of primary health care in achieving the sustainable development goals? *The Lancet* 2018;392:1461–72.
- 11 World Health Organization. *Primary health care on the road to universal health coverage: 2019 monitoring report*. Geneva, Switzerland: World Health Organization, 2019.
- 12 Kutzin J. Health financing for universal coverage and health system performance: concepts and implications for policy. *Bull World Health Organ* 2013;91:602–11.
- 13 Evans DB, Etienne C. Health systems financing and the path to universal coverage. *Bull World Health Organ* 2010;88:402.
- 14 Chalkidou K, Glassman A, Marten R, *et al.* Priority-setting for achieving universal health coverage. *Bull World Health Organ* 2016;94:462–7.
- 15 Sriram V, Hyder AA, Bennett S. The making of a new medical specialty: a policy analysis of the development of emergency medicine in India. *Int J Health Policy Manag* 2018;7:993–1006.
- 16 Chopra M, Munro S, Lavis JN, *et al.* Effects of policy options for human resources for health: an analysis of systematic reviews. *The Lancet* 2008;371:668–74.
- 17 Villar Uribe M, Alonge OO, Bishai DM, *et al.* Can task-shifting work at scale?: comparing clinical knowledge of Non-physician clinicians to physicians in Nigeria. *BMC Health Serv Res* 2018;18:308.
- 18 Mavalankar D, Sriram V. Provision of anaesthesia services for emergency obstetric care through task shifting in South Asia. *Reprod Health Matters* 2009;17:21–31.
- 19 Mavalankar D, Callahan K, Sriram V, *et al.* Where there is no anesthetist--increasing capacity for emergency obstetric care in rural India: an evaluation of a pilot program to train general doctors. *Int J Gynaecol Obstet* 2009;107:283–8.
- 20 Hariyani S, Lalani U, Bennett S. Issue brief 2: towards a comprehensive human resources for health policy in Uttar Pradesh, India 2019.
- 21 Sriram V, George A, Baru R, *et al.* Socialization, legitimation and the transfer of biomedical knowledge to low- and middle-income countries: analyzing the case of emergency medicine in India. *Int J Equity Health* 2018;17:142.
- 22 Aslam M, Ali A, Taj T, *et al.* Specialty choices of medical students and house officers in Karachi, Pakistan. *East Mediterr Health J* 2011;17:74–9.
- 23 Miseda MH, Were SO, Muriangi CA, *et al.* The implication of the shortage of health workforce specialist on universal health coverage in Kenya. *Hum Resour Health* 2017;15:80.
- 24 Nigenda G, Muñoz JA. Projections of specialist physicians in Mexico: a key element in planning human resources for health. *Hum Resour Health* 2015;13:79.
- 25 Ananthakrishnan N, Arora NK, Chandy G, *et al.* Is there need for a transformational change to overcome the current problems with postgraduate medical education in India? *Natl Med J India* 2012;25:101–8.
- 26 Ministry of Health, Rwanda. *Human resources for health strategic plan, 2011–2016*. Rwanda: Ministry of health, 2011.
- 27 Baicker K, Chandra A, Spending M. The Physician Workforce, And Beneficiaries' Quality Of Care. *Health Aff* 2004;23:W4–184.
- 28 Starfield B, Shi L, Grover A, *et al.* The Effects Of Specialist Supply On Populations' Health: Assessing The Evidence. *Health Aff* 2005;24:W5–97–W5–107.
- 29 Jenkins R, Kydd R, Mullen P, *et al.* International migration of doctors, and its impact on availability of psychiatrists in low and middle income countries. *PLoS One* 2010;5:e9049.
- 30 Zhang T, Liu C, Liu L, *et al.* General practice for the poor and specialist services for the rich: inequality evidence from a cross-sectional survey on Hangzhou residents, China. *Int J Equity Health* 2019;18:69.
- 31 Patel V. The future of psychiatry in low- and middle-income countries. *Psychol Med* 2009;39:1759–62.
- 32 Dias A, Patel V. Closing the treatment gap for dementia in India. *Indian J Psychiatry* 2009;51:S93–7.
- 33 Krishnan A, Rajagopal MR, Karim S, *et al.* Palliative care program development in a low- to middle-income country: delivery of care by a nongovernmental organization in India. *J Glob Oncol* 2018;4:1–8.
- 34 Meliala A, Hort K, Trisnantoro L. Addressing the unequal geographic distribution of specialist doctors in Indonesia: the role of the private sector and effectiveness of current regulations. *Soc Sci Med* 2013;82:30–4.
- 35 Davies JI, Vreede E, Onajin-Obembe B, *et al.* What is the minimum number of specialist anaesthetists needed in low-income and middle-income countries? *BMJ Glob Health* 2018;3:e001005.
- 36 Watkins Det al. *Universal Health Coverage and Essential Packages of Care.* In: *Disease Control Priorities*. Third Edition. Washington, D.C: World Bank, 2018.
- 37 Doherty JE. Regulating the for-profit private health sector: lessons from East and southern Africa. *Health Policy Plan* 2015;30 Suppl 1:i93–102.
- 38 Urvashi Popli vs Uoi & Ors. on 15 April, 2009, WP(C) No.140 of 2007 [Internet]. New Delhi, India: Delhi High Court (Chief Justice J Neeraj Kishan Kaul), 2009. Available: <https://indiankanoon.org/doc/82601766/>
- 39 Singer SJ, Burgers J, Friedberg M, *et al.* Defining and measuring integrated patient care: promoting the next frontier in health care delivery. *Med Care Res Rev* 2011;68:112–27.
- 40 Rao M, Rao KD, Kumar AKS, *et al.* Human resources for health in India. *The Lancet* 2011;377:587–98.
- 41 Meshkat N, Teklu S, Hunchak C, *et al.* Design and implementation of a postgraduate curriculum to support Ethiopia's first emergency medicine residency training program: the Toronto Addis Ababa academic collaboration in emergency medicine (TAAAC-EM). *BMC Med Educ* 2018;18:71.
- 42 Montegut AJ, Schirmer J, Cartwright C, *et al.* Creation of postgraduate training programs for family medicine in Vietnam. *Fam Med* 2007;39:634–8.