# Primary Health Care in South Asia 1

## The state of primary health care in south Asia

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The south Asian region (SAR) is home to 1.74 billion people, corresponding to 22% of the global population. The region faces several challenges pertaining to changing epidemiology, rapid urbanisation, and social and economic concerns, which affect health outcomes. Primary health care (PHC) is a cost-effective strategy to respond to these challenges through integrated service delivery, multi-sectoral action, and empowered communities. The PHC approach has historically been an important cornerstone of health policy in SAR countries. However, the region is yet to fully reap the benefits of PHC-oriented health systems. Our introductory paper in this *Lancet* Series on PHC in the SAR describes the existing PHC delivery structure in five SAR nations (ie, Bangladesh, India, Nepal, Pakistan, and Sri Lanka) and critically appraises PHC performance to identify its enablers and barriers. The paper proposes investing in a shared culture of innovation and collaboration for revitalisation of PHC in the region.

## Introduction

Primary health care (PHC) is widely acknowledged as a comprehensive strategy to meet populations' health needs in an equitable manner.<sup>1</sup> Countries in the south Asian region (SAR) have endorsed their commitment to the core principles of the Astana Declaration for strengthening PHC-oriented health systems.<sup>1</sup> Furthermore, the COVID-19 pandemic underscored the importance of building resilient health systems on the foundations of strong PHC. The pandemic has thus provided a window of opportunity to launch far-reaching reforms to strengthen PHC-oriented health systems in the region.

## Key messages

- The south Asian region (SAR) has witnessed improvements in maternal, infant, and under-5 mortality rates, much of which has been credited to primary health care (PHC) provision in the region. However, the rise of non-communicable diseases (NCDs) and an aging population in the region necessitate adaptation of health systems to meet a new set of challenges.
- A differential approach to organise service delivery in urban and rural areas seems necessary to meet community health needs. The countries will have to adopt and contextualise PHC service delivery models, health workforce retention strategies, and provider payment systems separately for rural and urban areas.
- Despite substantial progress in social development, health inequalities persist in the region. Our findings suggest higher health inequalities across provinces and between individuals of different economic status, as compared with inequalities based on gender and place of residence (urban vs rural). Tracking health inequalities and their drivers and strengthening policies for the underserved populations in the region is important to ensure equitable outcomes.
- The major drivers for PHC access in the region included policy commitments for strengthening PHC and existence

The SAR epitomises many of the challenges of our time, including substantial socioeconomic inequities, rising urbanisation, and spillover effects between the environmental health, animal health, and human health. The effect of demographic, and epidemiological, transitions, such as rise in aging population and increase in the burden of NCDs, are also increasingly apparent in this region, with a steady increase in population size, population ageing, and high burden of both communicable and noncommunicable diseases (NCDs; figure 1).

We have investigated the strengths and deficiencies of different PHC approaches in the SAR, and provided a comparative analysis between countries. Thereby, we

of community health workers, civil society organisations, and incentives for PHC the workforce. The future of PHC in the region is reliant on digital technologies to bridge service delivery gaps, ensure care continuum, enable selfcare, and reduce health inequalities.

- The major barriers that had a direct relationship with most PHC domains included inclination towards curative care, inadequate training, weak monitoring and accountability mechanisms. Additionally, absence of sector-wise (publicprivate) and location-wise (urban-rural) disaggregated data on PHC workforce, lack of reporting from private providers, and insufficient data on the effect of strategies to strengthen PHC domains, limit the evidence-informed shaping of PHC.
- The private sector in the region delivers a substantial share of primary curative care. However, this sector remains largely unregulated and heterogenous, with scarcity of data on on its performance. There is a need to strengthen mandatory reporting by the private sector in routine health information systems.
- Financial crises in two countries (Pakistan and Sri Lanka) of the region mean it is important to advocate for investment in PHC, due to its high economic returns and overall health and non-health welfare benefits.





#### Lancet Glob Health 2024; 12: e1693–705

Published Online August 20, 2024 https://doi.org/10.1016/ S2214-109X(24)00119-0

See **Comment** pages e1573 and e1575

This is the first in a **Series** of five papers about primary health care in south Asia (papers 4 and 5 appear in The Lancet Regional Health Southeast Asia). All papers in the Series are available at thelancet.com/series/primaryhealth-care-south-asia

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https://data.worldbank.org/ indicator

For more on the **SDG indicators database** see https://unstats. un.org/sdgs/dataportal/

	Bangladesh	India	Nepal	Pakistan	Sri Lanka						
Demographic status											
Total population in 2021 (in millions)	169	1407	30	231	22						
Urban population in 2021 (%)	39%	35%	21%	37%	19%						
Population older than 65 years in 2021 (%)	6%	7%	6%	4%	11%						
Life expectancy at birth in 2020	72	70	69	66	76						
Fertility rate (births per woman)	2.0	2.1	2.1	3.6	2.0						
Economic status <sup>2</sup>											
GDP per capita in 2021 (US\$ PPP)	2458	2257	1208	1505	4014						
GDP growth in 2023 (annual %)	6%	6.1%	5%	3.5%	-3%						
Poverty headcount ratio at \$2.15 a day in 2017 PPP (% population)	13.5%	10.0%	8.2%	4.9%	1.3%						
Disease profile (proportional morbidity percentage) <sup>3-8</sup>											
Maternal disorders	0.2%	0.3%	0.3%	0.5%	0.2%						
Neonatal preterm birth	1.4%	1.2%	1.3%	1.2%	0.8%						
Diarrheal diseases	1.9%	1.8%	2.2%	2.1%	1.1%						
Nutritional deficiencies	23.2%	32.6%	24.2%	31.8%	17.4%						
Stunting among children younger than 5 years	31%	36%	36%	38%	17%						
Malaria	0.0%	0.4%	0.1%	0.6%	0.0%						
HIV/AIDS	0.01%	0.13%	0.09%	0.03%	0.01%						
Tuberculosis	7.8%	27.6%	14.6%	15.3%	29.2%						
Cardiovascular diseases	5.3%	5·2%	4.1%	4.0%	6.4%						
Hypertensive heart disease	0.1%	0.1%	0.0%	0.1%	0.4%						
Diabetes	4.4%	6.3%	4·8%	4·2%	11.3%						
Neoplasms	2.0%	2.6%	1.9%	1.9%	5.1%						
Mental disorders	11.8%	13.8%	13.5%	12.1%	11.9%						
Injuries	18.7%	22.6%	20.5%	14.6%	27.2%						
PHC markers (%) <sup>9</sup>											
Immunisation of 1-year-old children with DPT3 in 2021	98%	85%	91%	83%	96%						
Skilled birth attendance in 2019	59%	89.4%	77.2%	68%	99%						
Hypertension treatment coverage (by latest specified year)	34.9%	16%	9.5%	22.3%	28.2%						
Vertical programme markers <sup>8,10</sup>											
HIV ART coverage in 2021 (%)	31%	65%	72%	14%	66%						
Tuberculosis treatment coverage in 2021 (%)	82%	67%	41%	55%	48%						
Malaria incidence per 1000 population (2018)	0.7	5.3	0.44	3.4	0						
Intersectoral markers (%) <sup>2,4-8,11,12</sup>											
Total population using basic sanitation services (2018–19)	64.4%	70.2%	79.2%	70%	91.6%						
Women literacy rate	72%	66%	63%	46%	92%						
Women participation in decision making (%)	59%	71%	38%	36%	77%						

## Figure 1: Selected socio-demographic, disease burden, and health system performance characteristics of south Asian countries

The figure provides a snapshot of demographic and economic conditions across selected south Asian countries, the disease burden and the performance of health systems. The colour gradient highlights the highest, high, middle, low, and lowest values of indicators among the south Asian region nations. ART=anti-retroviral therapy. BAN=Bangladesh. DPT3=diphtheria-pertussis-tetanus vaccine. IN=India. NEP=Nepal. PAK=Pakistan. PHC=Primary health care. PPP=purchasing power parity. SL=Sri Lanka. TB=tuberculosis. aimed to generate learnings from the experiences of the chosen SAR countries for that can be helpful for other territories within the region and beyond. Our paper also highlights the opportunities for and threats to policy reforms aimed at strengthening PHC-oriented health systems.

## Methods

In conceptualising this paper, we drew upon the Astana Declaration definition of PHC, which describes three inter-related components of PHC, including integrated health services; empowered people and communities; and multisectoral policy and action. We adapted the measurement framework developed by WHO and UNICEF to describe and analyse PHC performance in five SAR countries: Bangladesh, India, Nepal, Pakistan, and Sri Lanka (appendix p 2).13 We focused on the following domains of the WHO-UNICEF PHC framework: governance, financing, health workforce, access to medicines and medical products, health information system and digital technologies, and models of care (appendix). Although PHC performance might be reported at the provincial, regional, or national level, we have preferred the use of national estimates wherever available to facilitate comparisons across SAR countries.

The methods for our review were fourfold: a targeted literature review; data repositories; personal experience of manuscript authors; and virtual consultation. First, we did a targeted literature review with the use of PubMed, supplemented by a grey literature search to collate the evidence on the framework-specific quantitative and qualitative indicators of the WHO-UNICEF PHC measurement framework. The complete list of grey literature is presented in the appendix (pp 38-50). The full search strategy and methods of the review are provided in the appendix (p 2-4). Second, quantitative data were retrieved from global and national repositories (appendix p 5). Subsequently we used a structured form to solicit responses on the PHC measurement framework from different country authors on this manuscript, supported with additional evidence from references provided (figure 2). Finally, a virtual consultation was done with 33 global<sup>5</sup> and country-specific14 experts, from academia,11 government health ministries,7 and civil society organisations or development partners,13 to gather information on PHC in the SAR (appendix pp 8-10).

## **Findings**

## Organisation of PHC

PHC services in SAR are delivered through a mix of public and private health-care providers.<sup>15</sup> Preventive and promotive services are largely delivered by the public system, while primary curative care is predominantly provided by the private sector. For example, the private provisioning of immunisation services is low, with only 25% of private providers in Nepal and 7% in Bangladesh offering such services, in contrast with public health



Figure 2: Performance of primary health-care-oriented health systems in the Sout Asian region BAN=Bangladesh. IND=India. NCDs=non-communicable diseases. NEP=Nepal. PAK=Pakistan. SL=Sri Lanka. TB=tuberculosis. UHC=universal health coverage. WASH=water, sanitation, and hygiene.

facilities, which universally provide immunisation services.<sup>16,17</sup> However, in case of treatment of diarrhoea in children, more than 80% of such services in Bangladesh and Pakistan are provided in the private sector (figure 3, figure 1).

The term private sector masks huge variation in types of primary care providers. Besides the qualified and underqualified private allopathic providers, the region also boasts a vibrant array of traditional, complementary, and alternative medicine providers specialising in areas such as ayurveda, homeopathy, siddha, unani, naturopathy, and yoga.<sup>18</sup> Furthermore, the structure of the private health facilities is diverse, encompassing an array of large for-profit corporate entities, not-for-profit hospitals, nursing homes, general practitioner clinics, pharmacies, diagnostic laboratories, and independent medical practitioners (appendix pp 11–13).<sup>19</sup> The private sector operates without any specific organisational framework and divisions in levels of care (primary, secondary, and tertiary), and remains largely See Online for appendix unregulated.

## Situational analysis of primary health care in the region

Public PHC services in SAR countries are provided through well defined government PHC structures at community, primary (first point of facility contact), and higher primary (first referral point) levels, which are organised in a hierarchical manner (figure 4, figure 1). Nonetheless, SAR countries show variations in rural versus urban PHC service delivery systems, with community health workers well integrated into the PHC service delivery system in rural areas, compared with much more ad hoc arrangements in urban areas. Differences between PHC architecture in rural and urban areas have arisen due to differences in geographical accessibility, acceptance of community health workers, disparities in availability of medical doctors and private facilities, sociocultural variations, and differences in overall health needs.



#### Figure 3: Situational analysis of primary health care in south Asia

BAN=Bangladesh. BP=blood pressure. CVD=cardiovascular diseases. CNS=central nervous system. DPT3=diphtheria-pertussis-tetanus. IND=India. NEP=Nepal. PAK=Pakistan. PHC=primary health care. SL=Sri Lanka. Information related to availability of anti-tubercular drugs, and oral contraceptive pills are not available for India.

# Organisation of government PHC systems across SAR countries

Public PHC systems at all levels have conventionally provided reproductive, maternal, child, and adolescent care along with nutritional services, and care for communicable diseases, such as tuberculosis. Consequently, the region has witnessed improvements in utilisation of maternal and child health services, which has resulted in a reduction in maternal and under-5 mortality (figure 2). Diphtheria-pertussis-tetanus immunisation coverage increased from 74% to 90% in the SAR from 2000 to 2018. Similarly, skilled birth assistance has improved from 44.6% to 72.2% in the decade from 2006 to 2016. However, health inequities persist across provinces, individuals of different economic statuses (wealth quintile), and to some extent were influenced by location and sex (figure 2, figure 1).<sup>20,21</sup>

### Performance of PHC-oriented health systems

In the last two decades, the SAR countries have added services for common NCDs to their service packages to be delivered at designated public PHC facilities and in the community outside the designated PHC facilities (figure 4).<sup>22-26</sup> Figure 2 shows commonalities and differences across SAR countries in the PHC service package offered at different levels of the PHC system. Although there is considerable variation across countries in the services provided, growth monitoring, antenatal and postnatal services, family planning, and adolescent health services were consistently found across countries and levels of PHC (figure 5). In the context of NCDs, health education and counselling has been incorporated in community-level service packages. However, screening and management of NCDs varies across the levels of PHC in different countries. For example, the identification of mental health disorders should be provided at all PHC levels in SAR countries as mandated by the policy on essential service packages with the exception of Pakistan, however support to rehabilitation for patients with mental health disorders has only been incorporated at the primary and higher primary levels in Bangladesh, and at higher primary facilities in Sri Lanka.

## Comparative analysis of essential service packages for primary health care Decentralised approach to governance

SAR countries typically have a three-tiered governance structure, with policy makung and oversight at the central level, and reponsibility of service delivery delegated to the lower tiers of the government.<sup>26</sup> The SAR countries have devolved administrative and financial powers to the provinces, with India and Nepal extending this devolution to local governments for the delivery of health-care services.<sup>27</sup> Local governments in all the countries are responsible for public health functions and preventive health services, but have restricted financial autonomy.

A few studies have shown a positive effect of devolution of PHC governance on service utilisation in Pakistan, India, and Nepal,<sup>28,29</sup> whereas the potential benefits of decentralisation on the reduction in inequities does not appear to have been fully realised (figure 1, figure 4). The differences within and across the provinces have been primarily due to differential political and bureaucratic support, local capacities, clarity in responsibilities, and the perceived autonomy of community representatives in decision making and the degree to which the locally made decisions are accepted for planning, budgeting, human resource management, and service delivery.<sup>28,29</sup> A range of initiatives have been started to inculcate the spirit of decentralised planning and implementation, such as performance-based grant systems for local governments

	Bangladesh	India	Nepal	Pakistan	Sri Lanka		
evel	Satellite clinic, outreach services, and community clinics	Outreach Services	Outreach services and community health units	Outreach services	Medical officer of health—field clinics		
Community (first cont	Community health-care provider, family welfare visitor, family welfare assistant, health assistant, skilled birth attendant, village health worker, and community midwife	Multipurpose health worker, accredited social health activist, and Anganwadi worker	Female community health volunteer, auxiliary nurse and midwife, and auxiliary health worker	Lady health worker and lady health volunteer	Medical officer, public health midwife, public health inspector, public health nurse supervisor, supervising public health midwife, and field officer		
evel	Union health centre, rural health centre, and family welfare centre	Union health centre, rural health centre, and family welfare centre Ayushman Arogya Mandir) Health posts		Basic health units	Primary care medical units, municipal clinics		
Primary le	Medical officer, sub-assistant community medical officer, nurse, and patient care attendance	Community health officer, multipurpose health worker	Health assistant, auxiliary nurse and midwife, auxiliary health worker, senior auxiliary nurse and midwife, and senior auxiliary health worker	Medical officer, lady health volunteer, dispenser, trained birth attendant and wound dresser	Medical officer, nursing officer, dispenser, public health midwife, and attendant		
ry level	Upazila Health Complex	Primary Health-care Centre Ayushman Arogya Mandir, Urban Primary Health-Care Centre	Union health centre, primary health-care centre	Rural health centre	Divisional hospitals (A, B, and C)		
Higher primar	Maternal child welfare officer, medical officer, residential medical officer, nurse, lab technician, pharmacist, skilled birth attendant, and family planning officers	Medical officer, nurse, pharmacist, and lab technician	Medical officer, health assistant, nurse, auxiliary health worker, auxiliary nurse midwife, lab technician, and village health worker	Medical officer, nurse, lady health volunteer, nursing assistant, dental technician, vaccinator and lab technician	Medical officer, nursing officer, pharmacist, and dispenser		

Figure 4: Organisation of government primary health care system

in Bangladesh and Nepal; enhanced devolution of funds to local governments through finance commissions in India; and private sector engagement through contracting and regulation in Pakistan.28,30

### Community engagement and governance

Community engagement in the region is facilitated through the institutionalisation of statutory health committees, hospital boards, and councils for oversight,

	Explicitly stated in the essential service			Community level				Primary level				Higher primary level					
	package list <ul> <li>Not stated</li> <li>Limited to a few areas</li> </ul> Services		angladesh	Idia	lepal	akistan	ri Lanka	angladesh	ndia	lepal	akistan	ri Lanka	angladesh	ndia	lepal	akistan	ri Lanka
	Services		<u>n</u>	-	z	4	S	<u> </u>	2	z	à	S	<u> </u>	-	z	à	S
		Antenatal care Monitor labour progression—partograph															
		Vaginal delivery															
e 5: Comparative essential service r primary health care community level vices delivered in e community-by- health volunteers	nd child health	Management of severe pregnancy complications															
		Counseling on post-natal care and exclusive breastfeeding for 6 months from child birth															
	ıalaı	Cord care															<u> </u>
	terr	Screening of congenital problems															
	Ma	(fever, asthma, diarrhoea etc.)															
		Micronutrient supplementation															
h care workforce.		Management of acute malnutrition															
es at primary level es to be delivered ealth centre, Rural entre, and Family re in Bangladesh	≥ p	Family planning (condoms and oral contraceptives)															
	Famil	Injectable contraceptives (DMPA injection)															
centre Health and		Male and female sterilisation															
ss Centre in India; and urban health	GBV	Gender-case violence identification and prevention															
epal; basic health stan; and primary cal care units and linics in Sri Lanka. at higher primary	Adolescent health	Adolescent health—sexual and reproductive health services															
		School-based human papillomavirus vaccination for girls															
ude services to be		HIV testing															
at: Upazila Health ex in Bangladesh;	ses	Syndromic management of STI															
th centre—health	isea	Lab diagnosis of tuberculosis															
th centre in India;	tiousd	Drug distribution, including DOTS															
al health centre in	nfec	Diagnosis of malaria (RDT) Management of malaria															
an; and divisional bes A, B, and C) in Sri Lanka. BAN=Bangladesh. pronic obstructive ulmonary disease.	-	Hepatitis diagnosis and management															
		Health education on NCDs control															
	ases	Total risk assessment for CVD-laboratory testing															
vascular diseases.	dise	Management of diabetes															
DMPA=depot-	able	Management of COPD															
esterone acetate. directly observed ent—short course. =emergency care.	munia	identification of mental health															
	n-com	Mental health—support to rehabilitation															
ndia. NCDs=non-	Ň	Screening of breast cancer															
unicable diseases. al. PAK=Pakistan		Oral cancer (identification, referral, and counselling)															
d diagnostic test. nka. STI=sexually nitted infections.	EMR	Emergency care (stabilisation and administration of antivenom for snake bite)															
nitted infections. TB=tuberculosis.		for snake bite)															

#### Figure 5: Comparativ analysis of essential service packages for primary healtl car

Services at community leve include services delivered i the community-by community health volunteer or in outreach clinics by th primary health care workforce Services at primary leve include services to be delivere at: Union health centre, Rura health centre, and Famil Welfare Centre in Bangladesh Sub-centre Health and Wellness Centre in India health posts and urban health centre in Nepal; basic healt units in Pakistan; and primar medical care units and municipal clinics in Sri Lanka Services at higher primar level include services to b delivered at: Upazila Healt Complex in Bangladesh Primary health centre-health and wellness centre or urban primary health centre in India primary health-care centre in Nepal; rural health centre in Pakistan; and divisiona hospitals (types A, B, and C) in Srilank BAN=Bangladesh COPD=chronic obstructiv pulmonary disease CVD=cardiovascular diseases DMPA=depot medroxyprogesterone acetate DOTS=directly observed treatment-short course EMR=emergency care GBV=gender-based violence IND=India NCDs=non communicable diseases NEP=Nepal. PAK=Pakistan . RDT=rapid diagnostic test SL=Sri Lanka. STI=sexuall transmitted infections

advocacy, and social mobilisation.<sup>31,32</sup> For the realisation of effective community participation, countries have established health committees, such as village health, sanitation, and nutrition committees in India, and health facility management committees in Nepal and Bangladesh.33 The committees have been active in advocacy and awareness generation; however, they have had a poor effect as a governance structure.<sup>33,34</sup> The ambiguity in roles and function, constrained financial resources and administrative skills, absence of power to enforce decisions, and low recognition and incentivisation are important explanatory factors that cripple meaningful participation of members in the health committees through these health committees (appendix p 30).<sup>31-34</sup> Another issue has been the inadequate community representation within existing social hierarchies and predominantly patriarchal systems in the region.35 Furthermore, the information asymmetries between health staff and community representatives, and insufficient education of medical professionals on the importance of public participation for health, dissuades community ownership in the development and implementation of health-care-related policies.<sup>31,33</sup>

The SAR has examples of models of successful community empowerment, such as BRAC's Shasthya Shebika community health worker programme in Bangladesh, the Self-Employed Women's Association's Shakti Kendras in India, Sarvodaya programmes in Sri Lanka, and many more.<sup>36,37</sup> These civil society-run models have played a crucial role in accelerating integrated human development with the focus on social determinants of health, fostering social mobilisation and community action for health, raising awareness on socially important issues, delivering health-care services, and promoting equity.<sup>38,39</sup> The strategic involvement and training of local women as key change agents by civil society organisations for several noteworthy initiatives, such as, for the introduction of home-based newborn care in Gadchiroli, India; awareness campaigns on preparation of oral rehydration solution in Bangladesh; and health campaigns by local groups and women's organisation in Jamkhed, India, have not only vielded a substantial reduction in maternal and child mortality rates, but also improved the societal standing of women, diminished social disparities, and facilitated the organisation of appropriate care in closer proximity to communities.<sup>38,39</sup> Based on these successful models, governments in SAR have initiated community health worker programmes, and have steadily expanded the roles of community health workers for prevention and early detection of NCDs as described by Shreshtha and colleagues.

## Governance for multisectoral action

Multisectoral action is one of the three pillars of PHC to address social, behavioural, environmental, and commercial determinants of health.<sup>1,13</sup> Although

multisectoral action has been featured in national health policies (figure 1), its full potential remains underutilised in the region due to political and technical factors.<sup>40</sup> First, PHC and the social determinants of health have not been adequately framed in political agendas. Second, instead of adopting a leadership role, the health sector tends to play a minimal supporting role for cross-sectoral policies, due to implicit ministerial hierarchies. Third, different departments and ministries have distinct mandates and priorities, undermining coordination for multisectoral action (appendix p 30).<sup>40,41</sup>

Sri Lanka, however, has traditionally prioritised health in its political discourse and developed a strong preventive PHC system. The strategy of focus on preventive PHC system has led to an emphasis in the country on multisectoral action, which is reflected in measures of the social determinants of health, such as women literacy, availability of sanitation facilities, etc. (figure 1).<sup>42</sup> Other successful multisectoral action for PHC in the region include collaboration for malaria elimination in India and intersectoral coordination mechanisms established by the Directorate of Environmental and Occupational Health in Sri Lanka, to ensure food safety, protection against zoonotic diseases, and occupational health.<sup>41,43</sup>

The rise of NCDs (described in detail by Ahmed and colleagues in the second paper in this Series) and the COVID-19 pandemic have steered different sectors towards a whole-of-society approach for prevention and early detection of diseases.44 Countries' commitment to the SDGs and universal health coverage, as well as support from international and non-governmental organisations present opportunities to build capacities and an adapt environment for multisectoral action. The technical assistance and mobilisation of resources by these organisations have been instrumental in designing and implementing multisectoral initiatives, such as Nepal's multisectoral approach to address malnutrition, tobacco control policies in Sri Lanka and Bangladesh, AIDS-related initiatives in India, and poliovirus eradication measures in Pakistan.<sup>45,46</sup> However, rapid commercialisation, political alienation of civil society, and industrial profiteering interests are substantial threats, which can derail these multisectoral action endeavours.40

## Engagement with the private sector

The private sector delivers about 50–69% of outpatient care across the SAR countries and owns a substantial pool of health-care resources in the region. Various models of engagement with private sector providers, such as contracting-in, contracting-out, voucher systems, mobile health services, ambulances, insurance, subsidies, legal dual practice for doctors, private sector and community involvement in the management of PHC facilities, and participation of informal providers in poliovirus vaccination drives and tuberculosis treatment programmes have been implemented.<sup>47–50</sup> Zaidi and colleagues<sup>48</sup> describe region-specific noteworthy

examples of public–private partnerships in PHC, including the urban PHC services in Bangladesh; case notification of tuberculosis through public–private partnerships in India; and contracting-out of maternal and newborn health services under the People's Primary Health-Care Initiative in Pakistan. Such joint initiatives have increased service utilisation and public satisfaction with PHC services. However, different conceptual understandings of public–private partnerships among stakeholders, political affinities, antipathy from government PHC staff due to apprehension of job loss, increased accountability under private sector management, and delayed payments have led to suboptimal implementation of public–private partnerships (appendix p 31).<sup>51,52</sup>

#### Financing

Actual expenditure on PHC as a proportion of total public health financing is much lower than the aspirational commitments in policy documents. For example, India's health policy proposes that two-thirds or more of government's investments in the health sector should be targeted to PHC, but only 55.2% of the health budget is currently being spent on PHC.53 Domestic private expenditure on PHC as a percentage of total expenditure on PHC in the SAR ranges from 55% in Nepal, to 76% in Bangladesh.<sup>54</sup> Regional health systems tend to have regressive forms of financing for PHC with major reliance on out-of-pocket expenditures, which constitute 60% (ranging 47-73% across the five countries) of the total PHC expenditure in the region. Furthermore, improvements to tax-based financing are required due to sustained fiscal deficits and inadequate tax to GDP ratios that hover below the minimal threshold of 15% in SAR countries, with the exception of Nepal.55-58 Unsurprisingly, the region struggles with limited ability to raise resources for health (figure 1, figure 3), resulting from weak tax compliance, large informal economies limiting countries' ability to raise revenue from direct taxation, political and economic downturns in Pakistan and Sri Lanka (figure new), internal conflicts, and frequent natural disasters.59

Health financing systems are also negatively affected by high fragmentation, low-risk pooling, and passive purchasing with predominantly input-based resource allocation and rigid vertically oriented financial flows. Devolution has improved financing in a few areas. However, inefficiencies due to delayed funding release from the central level, and weak budget planning and fund absorption capacities at provincial and district level remain.<sup>28,29</sup>

SAR countries have helped spur innovation in negative user fees through the introduction of demand-side conditional cash transfers in the social sectors including nutrition, education, women's development, and health.<sup>60,61</sup> Such interventions have typically been put in place to promote health-care utilisation by offsetting financial costs and incentivising healthy behaviours. They hold a unique relevance in the SAR, a region with extant multidimensional deprivations and have been associated with increased PHC utilisation.<sup>62</sup>

The SAR is witnessing transformations in payment mechanisms for health-care services with the introduction of team-based-incentives (Ayushman Bharat Health and Wellness Centres programme in India), capitation-based payments (the free health care and safe motherhood programme in Nepal and provider-payer split in Pakistan), conditional cash transfers (incentives to beneficiaries and community health workers), and prepaid e-vouchers for patients with tuberculosis for acquiring medicines (e-RUPI pilot in India).60,61,63 Although conditional cash transfers have been shown to increase service utilisation in the region,<sup>62</sup> other initiatives require robust evaluations embedded in contextual determinants to assess their effect on service utilisation. Sustained efforts towards expanding the resource base by progressive taxation, differential approaches towards urban and rural financing, local financial capacity building, and the use of health technology assessments to guide the composition of PHC packages and scale-up strategies will be key to expand the share of the countries' health budgets and improve health outcomes at a lower cost.

## Human resources for health

The region has substantially expanded the pool of human resources, with 3-17 community health workers per 10000 citizens. However, the region is yet to attain WHO's density threshold of 44.5 health workers per 10000 population (figure 3).64 Sri Lanka and Pakistan have accomplished the WHO's target of one doctor per 1000 population, while Nepal has attained the goal of more than three nurses per 1000 population.<sup>64</sup> However, less than half (25-40%) of the doctors and almost half of the nursing personnel (47-62%) are employed in the public sector, with exception in Sri Lanka, where more than 90% of doctors and nurses are employed in this sector.64 The region also struggles to achieve an appropriate skill-mix; for example, Bangladesh and Pakistan traditionally have lower numbers of nursing and midwifery personnel compared with doctors (figure 1). Furthermore, the concentration of human resources is skewed towards urban areas, which implies a need for innovative strategies to retain PHC providers particularly in rural areas.

Due to the maldistribution of health workers, understaffing, and absenteeism of a trained PHC workforce, many informal health-care providers operate with no professional qualification or a medical licence. A survey in Indian villages found that 68% of the workforce in the private sector were informal providers, with 5.4 informal providers serving one village with a population of 1000–5000.<sup>65</sup> These informal health-care providers operate with variable quality of care,

over-prescription of medicines, and their operations remain unregulated.  $^{\scriptscriptstyle 50}$ 

SAR countries have adopted different measures to ensure equitable access to quality health-care workforce, such as strengthening health workforce governance through formation of human resources for health units and accreditation bodies, development of related policies and plans, such as decentralised recruitment, and development of workforce information systems, especially in Sri Lanka, Bangladesh, and Nepal.66 Countries have also experimented with innovative ways to tackle the shortage of staff for PHC through monetary incentives for health-care workers in rural areas, mandatory rural service bonds, and the introduction of new cadres of health workers, who receive a shorter duration of training than a medical doctor.<sup>67</sup> Nonetheless, a shortage of human resources staff for health units and accreditation councils, the absence of bespoke retention policies that take into account health workers' perspectives, and static data that do not capture labour force entry and exits (with exception of Sri Lanka), constrain favourable outcomes for such initiatives.66 Additionally, the absence of personal and professional support, workforce coordination issues, infrastructural constraints, and lesser value assigned by medical professionals to PHC roles compared with specialist roles contribute to staff attrition.68

Sri Lanka has reaped the benefits of free medical education in terms of retention of doctors in the public PHC system and high quality of outpatient curative care.<sup>69</sup> However, the region continues to neglect other human resources for health cadres including nurses, laboratory technicians, and pharmacists, in terms of skill retention opportunities, continuous professional development, and career pathway progression, as explained by Caffrey and colleagues.<sup>70,71</sup> The quality of pre-service education remains low, with health curriculums not adapted to the evolving population health needs and input-based accreditation of teaching institutes, leading to suboptimal competencies of health staff (appendix p 32). The SAR also faces medical brain drain, with India having the highest global number of physicians emigrating, followed by Pakistan.<sup>72</sup>

## Access to medicines and medical products

SAR countries have adopted evidence-based essential medicines lists, with the number of medicines listed varying from as high as 428 in Pakistan and as low as 285 in Bangladesh (figure 1).<sup>73</sup> The essential service packages also list medicines and diagnostics to be provided at no cost to the population. The SAR countries list a number of medicines varying from 91 to 228 drugs in their essential medicine lists, which are to be provided at first point-of-care health facilities. The medicines for maternal and child health are widely available at public PHC facilities in the SAR. However, drug availability for NCDs in these health facilities is sub-optimal in the countries, except for Sri Lanka (figure 3). The governments in SAR have established

price control mechanisms for a range of medicines (60–376 drugs) across nations, but this initiative has not been sufficient to remove financial barriers for access to medicines.<sup>73</sup>

Furthermore, despite the existence of standard treatment guidelines, unnecessary use of medicines is widespread in the region due to non-adherence to the guidelines and infrequency of clinical and prescription audits. The mean percent of prescriptions with antibiotics at PHC facilities in SAR countries was reported to be 50.6%, with the lowest antibiotic prescription rate of 23.6% in Sri Lanka (figure 3, appendix p 24).<sup>74,75</sup> Additionally, to improve the quality of medicines in the region, there needs to be strengthening of regulatory bodies, additional laboratory infrastructure, and strict actions against counterfeit drugs (appendix pp 32-33).<sup>73</sup>

The region harbours good practices related to medicines in many domains, including the development of information systems for accurate and real-time information on the availability of medicines in India and Sri Lanka; use of generics in both public and private sectors in Sri Lanka; red labelling of antibiotics; and incentivisation schemes for drug inspectors in India.73,76 A study from Rajasthan in India noted that the centralised procurement system and decentralised distribution of drugs, along with universal access to free medicines, increased drug availability, and utilisation of PHC facilities.<sup>77</sup> Additionally, adequate budgetary allocations, scientific demand estimation and inventory management, well maintained distribution systems, and digitally enabled quality control mechanisms have improved the availability of medicines at PHC facilities in a few provinces across the sub-continent.78,79 Going forward, countries in the region must formulate their essential medicine list and price setting through the use of health technology assessment, develop strategic pooled procurement arrangements with greater transparency of information on procurement price, strengthen quality control mechanisms along with legal and regulatory regimes, and promote safe prescription practices.73,78

## Health information systems and digital technologies

The SAR countries already have non-digital systems in place in the form of facility registries and reporting forms, and are moving towards digitisation, e-health policies, data warehouses, electronic health records, unique patient identifiers, and promoting open access software, such as district health information software (figure 1). However, there are a few noteworthy challenges that limit the use of data in evidence-based decision making for PHC. First, there is a varied degree of completeness and quality of data. The mean completeness of birth registration for children younger than 5 years in the region is 62%, ranging from 25% to 97% (figure 1). Similarly, although the coverage of death registration is 96%, reliable information on the causes of deaths registered is only 10% in India in comparison with 97% in the European region.<sup>80</sup> Such data issues have implications for planning and delivery of PHC services.

Second, the private sector, which provides more than half of outpatient primary care, is not mandated to provide information via standard health information system tools, leading to incomplete data on available resources, overall utilisation of PHC services, and related performance in terms of quality of care (access, continuity of care, comprehensiveness, effectiveness, safety, and efficiency). Third, infrastructural constraints and poor digital literacy among community health workers in SAR restricts the uptake and use of digital information systems.<sup>81</sup> Fourth, insufficient coordination and interoperability within and between different levels of health care (primary, secondary, and tertiary care) leads to fragmented and duplicate data.<sup>82</sup>

The countries are moving steadily to promote interoperability through policies and standards for the adoption of digital technologies, such as the National e-Health Strategy (2017) in Nepal, National Digital Guidelines and Standards (2016) in Sri Lanka, and Electronic Health Records Standards for India (2016). Additionally, digital initiatives, such as telemedicine, digitised point-of-care testing, disease surveillance and monitoring, supply chain management, e-prescriptions, decision support systems, and artificial intelligence, have been deployed in the region to bridge the gaps in PHC service delivery.<sup>83,84</sup> However, these initiatives have not yet realised their full potential and need further strengthening (appendix pp 33–34).

## Models of care

The region has three-tiered government health systems with multi-tasking PHC teams in defined catchment areas, partly integrated with the secondary and tertiary care facilities, to promote care continuity (figure 4). But the subcontinent falls short of establishing a gatekeeping mechanism through the PHC system, due to challenges at the PHC, level including resource constraints, inconvenient consultation hours, staff absenteeism, and absence of a functional referral system, which, combined, lead to low utilisation of the government PHC system for outpatient care, with the exception of in Sri Lanka.<sup>85,86</sup>

Explicitly defined facility catchment areas enabled by geographical e-mapping, and the existence of community care workers with a decent understanding of sociocultural traditions would help to provide an enabling primary health-care provision ecosystem (appendix pp 34–35). Initiatives, such as the integrated digital health record system, cross-orientation of staff on the availability of services at different levels of health care, demand-side financing, and evidence-based initiatives to streamline referral processes are being explored by all countries to promote effective gatekeeping and a functional care continuum.<sup>§7</sup> Given the rise in NCDs, ensuring the uninterrupted supply of medicines and diagnostics at PHC units (figure 3), and systematic approaches for upward and downward referral will be important, as also identified in the second paper in this Series.<sup>88,89</sup>

The fragmentation of service, siloed organisation across sectors, and few channels of communication between care providers poses additional challenges for the care continuum.<sup>90</sup> The countries have initiated modest steps to strengthen management and accountability systems through developing health management cadres at the district or cluster levels (Sri Lanka and India), team-based incentives in PHC (India), and the generation of unique patient identifiers to integrate health care in Bangladesh, India, and Sri Lanka.<sup>91</sup> Rising literacy and use of digital technology interfaces can further enable community orientation, improve care coordination, and increase capacities to move forward in areas of self-care.

Cultural competency in the health-care workforce is also constrained by high workload, minimal exposure to PHC settings during pre-service period of the medical professionals, and doctors' disinterest in PHC roles as opposed to specialist roles.<sup>68,92</sup> The evidence suggests there is inadequate outpatient consultation time per patient in the region, ranging from 48 s to 4 min, augmented with substantial scope to improve respectful care to increase people's satisfaction with the public health system.<sup>93</sup> The SAR countries require innovations to embed formal evaluation metrics with consistent patient satisfaction surveys in both the public and private sectors, and strengthening of social accountability mechanisms, to move towards more patient-centric and responsive care.

## Limitations

We acknowledge that not all possible search terms were included in the targeted review. However, to ensure comprehensiveness of the findings, we supplemented our evaluation with extensive exploration of grey literature followed by consultation with global and country-specific experts from academia, government health ministrues, and civil society organisations. Another limitation of our study is the unavailability of data pertaining to the PHCspecific workforce, and the private health-care sector. Health facility surveys and population-based surveys in the region rarely disaggregate data related to private providers by primary, secondary, and tertiary care. Therefore, indicators pertaining to infrastructure, availability of medicines, and diagnostics reflect the total resources in whole of the private sector (inclusive of all types of formal private providers), and were available only in three countries (Bangladesh, Nepal, and Sri Lanka), that routinely conduct health facility assessment surveys. The fact that private providers do not report data into routine health information systems adds to the absence of information on processes and outputs of service delivery in this private sector. This limited our analyses of available PHC resources in the private sector and performance of PHC services in the private sector.

## The way forward

SAR is home to more than one-fifth of the world's population. This region accounts for 27% of global communicable, maternal, neonatal, and nutritional diseases, and 23% of global NCDs. The SAR also reports 21% of the global mortality due to all causes, with 25% of premature deaths.3 The region, therefore, needs to bolster its actions to alleviate disease burden for both social and economic development. PHC provides a cost-effective strategy to close the equity and efficiency gaps, especially during the current poor financial situation in the region. SAR countries have initiated reforms to strengthen the building blocks for PHC between 2018 and 2023 (figure 1), however there is a need to rethink strategies around the philosophy of PHC and to act beyond established frameworks. These needs are pressing due to rising urbanisation, the chronic disease pandemic, changing sociocultural traditions, expanded roles of community care workers, growing privatisation, and chronic inequalities. Other papers in this Series elaborate on these aspects to capture the current landscape ingrained in the challenges of the modern world and provide pragmatic measures to strengthen PHC in the region.42,48,55

#### Contributors

Conceptualisation (SP, NP, LR, MS, SB, KDR), methodology (SP, NP, NK, LR, MS, KDR), data curation and formal analysis (NP, NK, LR, RZ), project administration (SP, NP), resources and supervision (SP), funding acquisition (KDR), validation and visualisation (all authors), writing original draft (NP, NK), review and finalisation of the manuscript (all authors).

#### **Declaration of interests**

We declare no competing interests.

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