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# Priorities for primary health care policy implementation: recommendations from the combined experience of six countries in the Asia-Pacific

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**Abstract.** Primary health care is essential for equitable, cost-effective and sustainable health care. It is the cornerstone to achieving universal health coverage against a backdrop of rising health expenditure and aging populations. Implementing strong primary health care requires grassroots understanding of health system performance. Comparing successes and barriers between countries may help identify mutual challenges and possible solutions. This paper compares and analyses primary health care policy in Australia, Malaysia, Mongolia, Myanmar, Thailand and Vietnam. Data were collected at the

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World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians (WONCA) Asia—Pacific regional conference in November 2017 using a predetermined framework. The six countries varied in maturity of their primary health care systems, including the extent to which family doctors contribute to care delivery. Challenges included an insufficient trained and competent workforce, particularly in rural and remote communities, and deficits in coordination within primary health care, as well as between primary and secondary care. Asia—Pacific regional policy needs to: (1) focus on better collaboration between public and private sectors; (2) take a structured approach to information sharing by bridging gaps in technology, health literacy and interprofessional working; (3) build systems that can evaluate and improve quality of care; and (4) promote community-based, high-quality training programs.

**Additional keywords:** family doctor, general practice, global health, international collaboration, social determinants of health, universal health coverage.

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## Introduction

The healthcare systems of the Asia–Pacific region (China, South-east Asia, Australia, New Zealand and Pacific Islands) are straining against rising health costs and diminished returns on healthcare investment, particularly in response to aging populations. Evidence indicates that formally structured primary health care (PHC) and a trained primary care workforce leads to improved population health at lower overall cost (Starfield 1994; Hansen *et al.* 2015). Strengthening PHC is therefore a World Health Organization (WHO) priority in achieving universal health coverage (UHC; Pettigrew *et al.* 2015; Hone *et al.* 2018; van Weel and Kidd 2018; WHO 2019), part of the United Nations' Sustainable Development Goals (United Nations 2015) and regional and global sustainable health care (WHO 2008).

In order to implement a strong PHC policy, it is necessary to have an understanding of both the existing health system from a grassroots level and the application of general principles adapted to the prevailing local conditions. Although PHC systems in Europe, North America and Australasia (Australia and New Zealand) have been well documented and compared (Journal of the American Board of Family Medicine 2012, 25(Suppl 1), S1-S44; Kringos et al. 2013; Hutchison and Glazier 2013; Pavlič et al. 2018), this is less the case in many low- and middle-income countries (LMIC). Over the past few years, the World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians (WONCA) Working Party on Research has undertaken work to examine and document how PHC values may be addressed and implemented within the constraints of diverse healthcare systems globally (WONCA 2019). Earlier studies have documented findings from the Asia-Pacific (van Weel et al. 2016a), South Asia (van Weel et al. 2016b), Africa (Mash et al. 2018), East Mediterranean (van Weel et al. 2018) and Central and South America (Acosta Ramírez et al. 2016; Ramírez Aranda et al. 2017; van Weel and Howe 2018), identifying common challenges and priorities to strengthen PHC and secure UHC, despite differences in culture, demography and health systems.

This is the second paper to document and critically appraise the PHC systems in the Asia–Pacific region, with the objective of identifying common strategies for strengthening PHC and prioritising recommendations for international collaboration across the region. The first paper (van Weel *et al.* 2016*a*) discussed PHC in China (Shanghai, Hong Kong), Japan, South Korea, Singapore and Taiwan.

## Ethics approval

This study was reviewed by the Ethics Board of Fukushima Medical University and deemed not to require ethics approval (Reference no. G2019-146).

# **Country comparisons**

The comparisons of six PHC systems (Australia, Malaysia, Mongolia, Myanmar, Thailand and Vietnam) were presented at a panel discussion at the 2017 WONCA Asia-Pacific regional conference held in Pattaya, Thailand. Expert academic family doctors presented their country details, using the predetermined WONCA framework of 11 templated PowerPoint slides, which focused on country demographics, PHC structure, role, types of community disciplines, role of teams in service provision, relationship to other community services, benefits and barriers in addressing the impact of community-based PHC teams on patient care and population health, ways community-based PHC teams supported or impeded proactive responses to community health needs and lessons for other countries. All panel presenters, moderators and delegates contributed to the discussion directed at strategies to strengthen PHC, with a focus on possible contributions that could be made through regional and international collaboration.

Following the workshop, a framework analysis was conducted of the data provided from the six PowerPoint presentations plus the resulting discussion, further informed through comparative population-level health markers for each country.

#### Australia

The foundation of PHC delivery in Australia is a strong and well-established system of general practice. Most PHC is delivered to Australians by individual general practitioners (GPs), with PHC teams uncommon, except in Aboriginal health. There has been investment in the quality of general practice and PHC through professional training, research and development for over 30 years but, without a system of PHC teams, the 'health care

service delivery system is complex, fragmented and often uncoordinated' (Department of Health and Ageing 2009).

## Malaysia

A combination of public and private funded health care has served the Malaysian population since the 1950s. In response to the changing morbidity patterns from communicable to noncommunicable diseases (NCDs), integration of care in the public sector has been the priority of primary care services. The Ministry of Health has expanded the primary care infrastructure, investing in training family doctors and moving chronic disease management and health promotion from secondary to primary care settings (Lim et al. 2017), including chronic disease management and HIV clinics. Rising healthcare costs have shifted the burden of care from private to the heavily subsidised public sector, where resources are already overstretched (Ministry of Health 2016). Overall, an integrated public-private system with increased funding for primary care is urgently needed.

## Mongolia

Mongolia has family health centres (FHCs) where healthcare workers are organised into 'partnerships'. FHCs provide services based on contractual arrangements between the district or province governor and the health centres. FHCs are responsible for implementing government-approved public health programs, conducting population screening for and monitoring patients with NCDs and referring patients to secondary or tertiary centres as appropriate (Center for Health Development 2016). Because FHCs are solely funded by capitated payment from the state budget, they have no independence to augment services through the private sector nor develop true communitybased PHC. In practice, there are a few doctors and nurses trained in family medicine and an inadequate referral system with poor relationships between primary and secondary care.

## Myanmar

PHC in Myanmar is provided by a combination of medical professionals funded by the Ministry of Health and Sports, the Ministry of Labour and the Ministry of Defence, private GPs, national and international non-governmental organisations and third-sector providers. Medical officers, dental officers and private GPs are the main PHC providers in urban and semi-urban areas, whereas health assistants, female health visitors, midwives and health supervisors are the key providers in rural areas (Latt et al. 2016). Although a national health insurance policy was started in 2015, PHC disciplines, including ambulatory care, are not covered, with resulting high out-of-pocket costs to patients. The effects of PHC activities on patient care are unclear. Barriers to achieving comprehensive PHC at individual and community levels include low funding allocation of the government healthcare budget, low population health literacy, disparities in access to and utilisation of health services by the poor and limited health information systems.

## Thailand

In recent decades UHC reform has been a major achievement for the Thai healthcare system. A strong foundation of PHC has demonstrated a reduction in geographic barriers to access, but effective PHC delivery remains a challenge despite establishing family doctor training and a financial management overhaul (Prakongsai et al. 2009). Recent family doctor training has focused on collaboration with a multidisciplinary team, reshaping the PHC model. Policy supporting PHC has focused on the public sector, with efforts to improve public primary care infrastructure, but human resources remain limited. PHC has experienced a chronic staff shortage and increased demand for services, affecting health promotion and disease prevention programs (Kitreerawutiwong et al. 2017). Community ownership, administered through district health boards, to promote multisectorial collaboration and social entrepreneurship is essential to improving PHC delivery in Thailand.

## Vietnam

In the past decade, the Vietnamese Ministry for Health has supported open health care access through PHC (Nguyen and Cheng 2014). The PHC system has played an important role in achieving the goal of UHC, which can be improved further with the upgrading of information and communication technology (ICT) systems, a family medicine training program and an established policy for the PHC sector. Key priorities for PHC services over the next decade will be reducing medical costs and overcrowding in secondary and tertiary care. PHC teams at a grassroots level should be competent to provide integrated, comprehensive and patient-centred care at 'commune health centres' that prioritise the doctor-patient relationship. However, the lack of a national accreditation system and licensing standards need to be addressed urgently. Close collaborative and multidisciplinary team working in PHC is required.

## Comparative statistics

The relative populations and several population-level health markers for the six countries are given in Table 1. The life expectancy clearly differentiates the three lower middle-income countries (Mongolia, Myanmar and Vietnam) from the two upper middle-income countries (Thailand and Malaysia) and then Australia as a high-income country. A similar pattern can be seen in the maternal, neonatal and infant mortality rates and the probability of dying from an NCD between the ages of 30 and 70 years. Thailand stands out as doing well despite being the country with the lowest number of doctors per 10 000 inhabitants and a relatively older population, and this may be attributed to its UHC achieved through strengthening PHC.

## Discussion

These six countries vary in the maturity of their PHC systems, their journey towards UHC and the extent to which family doctors deliver PHC. However, common issues to overcome, derived directly from the panel discussions, are shortages in the PHC workforce, particularly in rural and remote communities, and the lack of coordination within PHC, as well as between primary and secondary care.

## Collaboration between public and private sectors

The roles of public and private sectors in PHC, and ways in which they collaborate with each other, differ between countries. Malaysia has a dual system where locations, PHC team

Table 1. Country population health marker comparisons

	Australia	Malaysia	Mongolia	Myanmar	Thailand	Vietnam
Population, 2020 ( $\times 10^6$ ) <sup>A</sup>	25.5	32.4	3.3	54.4	69.8	97.3
% Population urban, 2020 <sup>A</sup>	86	78	67	31	51	38
Doctors per 10000 inhabitants <sup>B</sup>	3.7	1.5	2.9	0.7	0.8	0.8
Median age of the population <sup>C</sup> (years)	37.5	29.2	29.8	29.2	39	31.9
Estimated proportion of the population >65 years, 2018 <sup>D</sup> (%)	16	7	4	6	12	7
Mean annual population change, 2018 <sup>E</sup> (%)	1.5	1.4	1.8	0.6	0.3	1
Maternal mortality ratio (per 100 000 live births), 2017 <sup>F</sup>	6	29	45	250	37	43
Neonatal mortality rate (per 1000 live births), 2018 <sup>G</sup>	3	7	14	37	8	17
Mortality among those under 5 years of age (per 1000 live births), 2018 <sup>H</sup>	4	8	16	46	9	21
Life expectancy at birth (years), 2018 <sup>I</sup>	83	76	70	67	77	75
Probability of dying from cardiovascular disease, cancer, diabetes or chronic respiratory disease between 30 and 70 years of age, 2016 <sup>J</sup> (%)	9.1	17.2	30.2	24.2	14.5	17.1

<sup>&</sup>lt;sup>A</sup>Worldometer (2020).

members, morbidity patterns and financing mechanisms differ between public and private sectors. In Australia, general practices are largely private businesses, but consultations are subsidised by the government. In Myanmar, many PHC providers in both the public and private sectors work in a complementary manner, whereas there are moves in Mongolia to develop a public–private partnership through legislation.

An important issue in public-private collaboration is the unequal healthcare burden between the two sectors. Given the difference in financing between these two sectors and the increasingly expensive cost of long-term chronic disease management, patient preference is likely to sway towards, and hence overburden, the public sector. This problem is more pronounced if both sectors provide similar primary care services. Therefore, focus should be on developing a more sustainable health financing system, which may include unified health financing for both public and private sectors, or creating complementary roles and responsibilities between the two. The private sector in health care service provision may have a significant role in achieving UHC. The private sector has the potential to accelerate innovation in the healthcare system; however, regulation by the government and other stakeholders is needed with regards to quality, access and costs, in keeping with the public sector.

# Gatekeeper role

In Australia, general practice functions as a gatekeeper to secondary care, with specialist access through GP referral only. In Mongolia, nearly every FHC looks after a defined and enrolled population, whereas in Malaysia only primary care in the public sector has a gatekeeper function. These three versions of a gatekeeping role illustrate how each country's healthcare system is dependent on the quality of care in general practice, continuity of care, budget allocation between primary and secondary care and

patients' out-of-pocket expenditure on health. Generalisable recommendations are not appropriate, because each country needs to make its own road map directed by its individual economic development and political environment. It may be difficult to implement a gatekeeping function and enrolment system in countries facing rapid development or with large mobile populations, such as refugees and migrants. Despite debate about the value of gatekeeping (Greenfield and Foley 2016), it is a powerful instrument to reduce inequalities and promote integrated care.

## Information and communication technology

The availability of ICT in PHC varies between our case countries. However, even in those countries with advanced ICT systems, information sharing between primary and secondary care remains inadequate to ensure effective referrals and continuity of care. This is not just a matter of technology, but also of common understanding between healthcare professionals and addressing health literacy gaps. These gaps exist between the providers of PHC and secondary care, as well as between patients and healthcare providers, with resulting communication breakdown and unsatisfactory patient health outcomes (MacLeod et al. 2017). Platforms for communication need to be developed collaboratively. This creates a line of standardised communication and opportunity for interprofessional learning. As insights into health literacy (Rudd 2013) and shared decision making (Elwyn et al. 2017) evolve, we need a structured approach to information sharing, upskilling the PHC workforce in interprofessional communication and multidisciplinary learning while looking to educate patient groups to improve health literacy.

#### Social determinants of health

The Asia-Pacific region is richly diverse, not only through its geography, climate, history, culture, language and politics, but

<sup>&</sup>lt;sup>B</sup>World Bank (2020a).

<sup>&</sup>lt;sup>C</sup>Central Intelligence Agency (2020).

<sup>&</sup>lt;sup>D</sup>World Bank (2020b).

EWorld Bank (2020c).

FWorld Bank (2020d).

<sup>&</sup>lt;sup>G</sup>World Bank (2020*e*).

<sup>&</sup>lt;sup>H</sup>World Bank (2020*f*).

<sup>&</sup>lt;sup>I</sup>World Bank (2020g).

<sup>&</sup>lt;sup>J</sup>World Bank (2020*h*).

also in the distribution of social determinants of health (SDH) in its populations. The social and economic burden due to an aging population and prevalent NCDs is a challenge all countries will face sooner or later. Implementation of PHC in all Asia-Pacific countries must take SDH into consideration. Access to health care is more challenging for those countries with a large rural population, such as Myanmar and Vietnam (Table 1). The circumstances in which people grow, live, work and age create (avoidable) inequities in health, shaped by political, social and economic forces. Wars, conflicts and disasters also negatively contribute to SDH. It is 12 years since the WHO's Commission on Social Determinants of Health published its final report (Commission of Social Determinants of Health 2008), and work is needed to verify how much these recommendations have been put into practice. PHC works beyond providing acute and chronic care in isolation, and achieving community engagement, continuity and empowerment to promote a healthier social environment requires a collaborative effort.

## Universal health coverage

Better access to PHC is the most efficient and affordable way to achieve UHC, as illustrated by Thailand. Expansion of PHC services has been shown to lead to increased UHC and improved health outcomes (Hsieh et al. 2015). Conversely, financial constraints have made it difficult for Myanmar to achieve UHC. On a global scale, at least half the world's population still lacks access to essential health services: over 800 million people spend more than 10% of their household budget on health care, and almost 100 million people are pushed into extreme poverty each year due to out-of-pocket health expenditure (World Bank 2017). Even countries that have achieved UHC still experience the effect of aging, with an increased prevalence of NCDs and multimorbidity, as indicated in Table 1. As we have passed the 40th anniversary of the Alma Ata Declaration (WHO 1978), an important milestone in the development of PHC, it is important to rethink the roles of family doctors in PHC and UHC now. Promoting high-quality research that explores the costeffectiveness of PHC, as well as building systems that appropriately evaluate and improve the quality of care given by PHC providers, including family doctors, should be added to the roles of PHC providers and not neglected on the road towards UHC (van Weel and Kidd 2018).

## Lack of PHC workforce

The disparity in PHC workforce adequacy between urban and rural communities is large, and constitutes a major issue in all six countries. Many Australian rural GP positions are filled by overseas-trained graduates and locums. Most doctors employed by FHCs in Mongolia are new graduates with little or no clinical experience. Dispatching inexperienced or in-training doctors to rural and/or remote communities with little supervision can create safety issues for both doctors and patients, undermining confidence and trust on both sides. Education, supervision and mentorship can play a major positive role; however, lack of training capacity challenges the ability to provide the number of healthcare professionals needed to sustain the workforce. Our earlier analysis revealed that over-reliance of health policy on hospital settings as the main provider of care, as well as a lack of

professional training, are major system barriers to strengthening PHC (van Weel and Kassai 2017). We need to promote community-based, high-yield, high-quality training programs in PHC, ensuring positive coverage at medical schools with students exposed to family medicine as a career choice. Family doctor training needs to be put in place ahead of systems changes to ensure there is an adequate workforce to sustain the system.

## Conclusion

Using the WONCA framework for a constructive comparative dialogue between health systems has revealed key recommendations for future directions in PHC policy implementation. Successful PHC policy in the Asia–Pacific region requires:

- sustainable equitable public-private partnerships
- · structured approaches to information sharing
- improved multidisciplinary teams focused on both public and professional health literacy
- systems that can evaluate and improve the quality of care provided by PHC providers
- high-yield, high-quality, community-based training programs to generate the workforce required to sustain the system.

These goals were articulated in the 1978 Alma Ata Declaration (WHO 1978) and further emphasised in the 2018 Astana Declaration (WHO 2018), which called for populations to be empowered to address their own health needs with high-quality primary care and integrated public—private and intersectoral services. In 2016, the WHO Western Pacific Office called for countries in the region to embed the health system attributes and corresponding action domains for the attainment of UHC and the Sustainable Development Goals into national health policy reform (WHO Regional Office for the Western Pacific 2016), followed in 2018 with calls for a renewed focus on PHC values as part of a multisectoral commitment to UHC (WHO Regional Office for the Western Pacific 2018).

The future research agenda includes evaluating the value of gatekeeping and enrolment systems for individual health systems, seeking new methods to evaluate cost-effectiveness and the quality of PHC internationally and verifying the achievement of the WHO's SDH recommendations (Commission of Social Determinants of Health 2008). Achieving this will mark a key milestone in the quest for UHC sustained through strong, equitable and cost-effective PHC.

# Conflicts of interest

The authors declare no conflicts of interest.

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#### References

Acosta Ramírez N, Giovanella L, Romero RV, Silva HT, de Almeida PF, Ríos G, Goede H, Oliveira S (2016) Mapping primary health care renewal in South America. *Family Practice* 33, 261–267. doi:10.1093/ fampra/cmw013

Center for Health Development (2016) Health indicators 2016. Available at http://www.chd.mohs.mn/2017/smta/2016%20Health%20indicator.pdf [Verified 8 March 2020]

- Central Intelligence Agency (2020) World Factbook. Country comparison: median age. Available at https://www.cia.gov/library/publications/ resources/the-world-factbook/fields/343rank.html [Verified 29 June 2020]
- Commission of Social Determinants of Health (2008) Closing the gap in a generation: health equity through action on the social determinants of health. (World Health Organization: Geneva, Switzerland) Available at http://apps.who.int/iris/bitstream/handle/10665/43943/9789241563703\_eng.pdf;jsessionid=6EA4DFA6DD663EF58F30B27FF42E6715? sequence=1 [Verified 8 March 2020]
- Department of Health and Ageing (2009) Primary health care reform in Australia: report to support Australia's first national primary health care strategy. Available at https://trove.nla.gov.au/version/44706543 [Verified 8 March 2020]
- Elwyn G, Durand MA, Song J, Aarts J, Barr PJ, Berger Z, Cochran N, Frosch D, Galasiński D, Gulbrandsen P, Han PKJ, Härter M, Kinnersley P, Lloyd A, Mishra M, Perestelo-Perez L, Scholl I, Tomori K, Trevena L, Witteman HO, Van der Weijden T (2017) A three-talk model for shared decision making: multistage consultation process. *BMJ (Clinical Research Ed.)* 359, j4891. doi:10.1136/bmj.j4891
- Greenfield G, Foley K, Majeed A (2016) Rethinking primary care's gatekeeper role. *BMJ* **354**, i4803. doi:10.1136/bmj.i4803
- Hansen J, Groenewegen PP, Boerma WGW, Kringos DS (2015) Living in a country with a strong primary care system is beneficial to people with chronic conditions. *Health Affairs* 34, 1531–1537. doi:10.1377/hlthaff. 2015.0582
- Hone T, Macinko J, Millett C (2018) Revisiting Alma-Ata: what is the role of primary health care in achieving the Sustainable Development Goals? *Lancet* 392, 1461–1472. doi:10.1016/S0140-6736(18)31829-4
- Hsieh VC, Wu JC, Wu T, Chiang T (2015) Universal coverage for primary health care is a wise investment: evidence from 102 low- and middleincome countries. *Asia–Pacific Journal of Public Health* 27, NP877– NP886. doi:10.1177/1010539513492562
- Hutchison B, Glazier R (2013) Ontario's primary care reforms have transformed the local care landscape, but a plan is needed for ongoing improvement. *Health Affairs* 32, 695–703. doi:10.1377/hlthaff.2012.1087
- Kitreerawutiwong N, Jordan S, Hughes D (2017) Facility type and primary care performance in sub-district health promotion hospitals in northern Thailand. *PLoS One* 12, e0174055. doi:10.1371/journal.pone.0174055
- Kringos D, Kringos D, Boerma W, Bourgueil Y, Cartier T, Dedeu T, Hasvold T, Hutchinson A, Lember M, Oleszczyk M, Pavlic DR, Svab I, Tedeschi P, Wilm S, Wilson A, Windak A, Van der Zee J, Groenewegen P (2013) The strength of primary care in Europe: an international comparative study. *The British Journal of General Practice* 63, e742–e750. doi:10.3399/bjgp13X674422
- Latt NN, Cho SM, Htun NMM, Saw YM, Myint MNHA, Aoki F, Reyer JA, Yamamoto E, Yoshida Y, Hamajima N (2016) Health care in Myanmar. Nagoya Journal of Medical Science 78, 123–134.
- Lim HM, Sivasampu S, Khoo EM, Noh KM (2017) Chasm in primary care provision in a universal health system: findings from a nationally representative survey of health facilities in Malaysia. *PLoS One* 12, e0172229. doi:10.1371/journal.pone.0172229
- MacLeod S, Musich S, Gulyas S, Cheng Y, Tkatch R, Cempellin D, Bhattarai GR, Hawkins K, Yeh CS (2017) The impact of inadequate health literacy on patient satisfaction, healthcare utilization, and expenditures of older adults. *Geriatric Nursing* 38, 334–341. doi:10.1016/j.gerinurse.2016.12.003
- Mash R, Howe A, Olayemi O, Makwero M, Ray S, Zerihun M, Gyuse A, Goodyear-Smith F (2018) Reflections on family medicine and primary healthcare in sub-Saharan Africa. *BMJ Global Health* 3, e000662. doi:10.1136/bmjgh-2017-000662
- Ministry of Health (2016) Malaysian health system research (MHSR) volume 1: contextual analysis of the Malaysian health system. Available at https://www.researchgate.net/publication/320799211\_Malaysia\_Health\_System\_Research\_MHSR\_Volume\_1/download [Verified 8 March 2020]

- Nguyen TKT, Cheng TM (2014) Vietnam's health care system emphasizes prevention and pursues universal coverage. *Health Affairs* **33**, 2057–2063. doi:10.1377/hlthaff.2014.1141
- Pavlič DR, Sever M, Klemenc-Ketiš Z, Švab I, Vainieri M, Seghieri C, Maksuti A (2018) Strength of primary care service delivery: a comparative study of European countries, Australia, New Zealand, and Canada. Primary Health Care Research and Development 19, 277–287. doi:10. 1017/S1463423617000792
- Pettigrew LM, De Maeseneer J, Anderson MP, Essuman A, Kidd MR, Haines A (2015) Primary health care and the Sustainable Development Goals. *Lancet* **386**, 2119–2121. doi:10.1016/S0140-6736(15)00949-6
- Prakongsai P, Srvanichakorn S, Yana T (2009) Enhancing the primary care system in Thailand to improve equitable access to quality health care. 2nd National Health Assembly in Thailand, November 2009. Available at https://ssrn.com/abstract=1527989 [Verified 8 March 2020]
- Ramírez Aranda JM, van Weel C, Goodyear-Smith F (2017) Strategies for increasing the role of family medicine in Mexican health care reform. *Journal of the American Board of Family Medicine* 30, 843–847. doi:10. 3122/jabfm.2017.06.170024
- Rudd RE (2013) Needed action in health literacy. *Journal of Health Psychology* 18, 1004–1010. doi:10.1177/1359105312470128
- Starfield B (1994) Is primary care essential? *Lancet* **344**, 1129–1133. doi:10. 1016/S0140-6736(94)90634-3
- United Nations (2015) Sustainable development goals. Available at https://sustainabledevelopment.un.org/?menu=1300 [Verified 8 March 2020]
- van Weel C, Howe A (2018) 'Primary care around the world: recommendations for international policy & development.' (CRC Press: Oxford, UK)
- van Weel C, Kassai R (2017) Expanding primary care in South and East Asia. BMJ 356, j634. doi:10.1136/bmj.j634
- van Weel C, Kidd MR (2018) Why strengthening primary health care is essential to achieving universal health coverage. *CMAJ: Canadian Medical Association Journal* **190**, E463–E466. doi:10.1503/cmaj.170784
- van Weel C, Kassai R, Tsoi GWW, Hwang SJ, Cho K, Wong SYS, Phui-Nah C, Jiang S, Ii M, Goodyear-Smith F (2016a) Evolving health policy for primary care in the Asia–Pacific region. *The British Journal of General Practice* **66**, e451–e453. doi:10.3399/bjgp16X685513
- van Weel C, Kassai R, Qidwai W, Kumar R, Bala K, Gupta PP, Haniffa R, Hewageegana NR, Ranasinghe T, Kidd M, Howe A (2016b) Primary healthcare policy implementation in South Asia. *BMJ Global Health* 1, e000057. doi:10.1136/bmjgh-2016-000057
- van Weel C, Alnasir F, Farahat T, Usta J, Osman M, Abdulmalik M, Nashat N, Alsharief WM, Sanousi S, Saleh H, Tarawneh M, Goodyear-Smith F, Howe A, Kassai R (2018) Primary healthcare policy implementation in the East Mediterranean region: experiences of six countries. *The European Journal of General Practice* 24, 39–44. doi:10.1080/13814788.2017. 1397624
- World Bank (2017) Tracking universal health coverage: 2017 global monitoring report (English). (World Bank Group: Washington, DC, USA) Available at http://documents.worldbank.org/curated/en/ 640121513095868125/Tracking-universal-health-coverage-2017-globalmonitoring-report [Verified 8 March 2020]
- World Bank (2020a) World Bank Open Data: Physicians (per 1,000 people).
  Available at https://data.worldbank.org/indicator/SH.MED.PHYS.ZS
  [Verified 29 June 2020]
- World Bank (2020b) World Bank Open Data: Population ages 65 and above (% of total population). Available at https://data.worldbank.org/ indicator/SP.POP.65UP.TO.ZS [Verified 29 June 2020]
- World Bank (2020c) World Bank Open Data: Population growth (annual %).
  Available at https://data.worldbank.org/indicator/SP.POP.GROW [Verified 29 June 2020]
- World Bank (2020*d*) World Bank Open Data: Maternal mortality ratio (modeled estimate, per 100,000 live births). Available at https://data.worldbank.org/indicator/SH.STA.MMRT [Verified 29 June 2020]

- World Bank (2020e) World Bank Open Data: Mortality rate, infant (per 1,000 live births). Available at https://data.worldbank.org/ indicator/SP.DYN.IMRT.IN [Verified 29 June 2020]
- World Bank (2020f) World Bank Open Data: Mortality rate, under-5 (per 1,000 live births). Available at https://data.worldbank.org/indicator/SH. DYN.MORT [Verified 29 June 2020]
- World Bank (2020g) World Bank Open Data: Life expectancy at birth, total (years). Available at https://data.worldbank.org/indicator/SP.DYN. LE00.IN [Verified 29 June 2020]
- World Bank (2020h) World Bank Open Data: Mortality from CVD, cancer, diabetes or CRD between exact ages 30 and 70 (%). Available at https:// data.worldbank.org/indicator/SH.DYN.NCOM.ZS [Verified 29 June 2020]
- World Health Organization (WHO) (1978) Declaration of Alma-Ata. International conference on primary health care, Alma-Ata, USSR, 6–12 September 1978. Available at https://www.who.int/publications/almaata declaration en.pdf [Verified 8 March 2020]
- World Health Organization (WHO) (2008) The world health report 2008 primary health care, now more than ever. (WHO: Geneva, Switzerland) Available at http://www.who.int/whr/2008/en/[Verified 8 March 2020]
- World Health Organization (WHO) (2018) Declaration of Astana. Global conference on primary health care. Available at https://www.who.int/

- docs/default-source/primary-health/declaration/gcphc-declaration.pdf [Verified 8 March 2020]
- World Health Organization (WHO) (2019) Universal health coverage. Available at http://www.who.int/universal\_health\_coverage/en/ [Verified 8 March 2020]
- World Health Organization (WHO) Regional Office for the Western Pacific (2016) Universal health coverage: moving towards better health action framework for the Western Pacific Region. Available at https://iris.wpro.who.int/handle/10665.1/13371 [Verified 8 March 2020]
- World Health Organization (WHO) Regional Office for the Western Pacific (2018) Primary health care in the Western Pacific Region: looking back and future directions. Available at https://iris.wpro.who.int/handle/10665.1/14311 [Verified 8 March 2020]
- Worldometer (2020) Countries in the world by population. Available at https://www.worldometers.info/world-population/population-by-country/[Verified 29 June 2020]
- World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians (WONCA) (2019)
  Plenary panel project resource documents. Available at http://www.globalfamilydoctor.com/groups/WorkingParties/Research/plenarypanel projectresourcedocuments.aspx [Verified 8 March 2020]