Towards universal health coverage: lessons from 10 years of healthcare reform in China

Wenjuan Tao 1,1 Zhi Zeng,1 Haixia Dang,2 Bingqing Lu,3 Linh Chuong,4 Dahai Yue,4 Jin Wen,1 Rui Zhao,5 Weimin Li,6 Gerald F Kominski 4,7

ABSTRACT
Universal health coverage (UHC) is driving the global health agenda. Many countries have embarked on national policy reforms towards this goal, including China. In 2009, the Chinese government launched a new round of healthcare reform towards UHC, aiming to provide universal coverage of basic healthcare by the end of 2020. The year of 2019 marks the 10th anniversary of China’s most recent healthcare reform. Sharing China’s experience is especially timely for other countries pursuing reforms to achieve UHC. This study describes the social, economic and health context in China, and then reviews the overall progress of healthcare reform (1949 to present), with a focus on the most recent (2009) round of healthcare reform. The study comprehensively analyses key reform initiatives and major achievements according to four aspects: health insurance system, drug supply and security system, medical service system and public health service system. Lessons learnt from China may have important implications for other nations, including continued political support, increased health financing and a strong primary healthcare system as basis.

INTRODUCTION
Universal health coverage (UHC) is driving the global health agenda and is now an ambition for many nations at all stages of development.1,2 UHC is a means for achieving improved equity, health, financial well-being and economic development, ensuring that everyone has access to quality, affordable health services when needed.3 Most countries have made UHC a key global health objective through the United Nations’ resolution, and move towards UHC following the Sustainable Development Goals (SDG) set in 2015. At the beginning of the 21st century, the push for UHC seems stronger than ever.4 The new WHO director general, Dr Tedros, emphasised that UHC is the ‘top strategic priority’ in the road map for WHO’s renewal.5 Accordingly, WHO’s General Program of Work for 2019–2023 has set an ambitious goal of benefiting more than 1 billion people from UHC by 2023.6

WHO states that there is ‘no one size to fit all’—there are different ways to attain UHC. An increasing number of low and middle-income countries (LMIC) are actively pursuing policies to achieve UHC and share their implementation experience from different political settings, such as Turkey,7 Indonesia,8 Thailand9 and Bangladesh.10 According to The World Bank report, the march to UHC in China is unparalleled.11 Also, Yip et al commented that ‘China’s reform goals and systemic strategies are exemplary for other nations that pursue UHC.’12 In early 2009, the Chinese government launched a new round of health system reform with the goal of providing affordable and equitable basic healthcare for all by 2020, which is in line with the basic concept of UHC defined by WHO.13 This year marks the 10th anniversary of China’s most recent healthcare reform. Evidence from China is especially timely for countries pursuing UHC. However, much of the early research focused solely on the first 3-year reform after 2009 in China,
without addressing the issue of the reform evolution and progress during the past decade. There is inadequate understanding of how China moves towards UHC step by step. We undertook a literature review, and analysed policies and secondary data from governmental sources. We aim to share the complete experience and strategy about China’s healthcare reform, and provide the critical lessons for other nations, especially for LMICs.

**ANALYSIS OF THE CONTEXT**

The People’s Republic of China (PRC) covers approximately 9.6 million km², and is now the most populous country in the world with 1.42 billion people. The urban population accounts for 58.0% of the total population. PRC was founded on 1 October 1949. At the time, China had one of the world’s poorest healthcare delivery systems due to an economy weakened by war. Today, China is an upper middle-income country whose gross domestic product has grown substantially at an average annual rate of 9.5% over the past 40 years, and has lifted more than 850 million people out of poverty. With the rapid economic growth, China has made great efforts to achieve UHC. For example, China has devoted increased public funding to health—the largest increase among Brazil, Russia, India, China and South Africa countries. China has almost achieved all of the Millennium Development Goals (MDG) by 2015, making a major contribution to the achievement of the MDGs globally, and is now moving towards SDGs to achieve UHC by 2030. Table 1 illustrates a summary of key socioeconomic and health indicators of the country from 1990 to 2017, as well as the comparable data in the other Emerging 7 (E7) countries (India, Brazil, Mexico, Russia, Indonesia and Turkey) in 2017. China has experienced remarkable improvements in economic conditions, human development and health outcomes, such as life expectancy and mortality. Compared with other E7 countries, China is at a relatively good level in both its economy and population health.

**A REVIEW OF THE REFORM PROGRESS**

Since the founding of the PRC in 1949, China has experienced dramatic changes in its healthcare system. Like many other countries, China’s healthcare reform has also undergone a difficult exploratory process. Therefore, it is necessary to briefly review the progress of reform of the healthcare system over the past 70 years. We divide the progress of China’s healthcare reform into three stages.

**Stage 1: 30 years after the founding of People’s Republic of China (1949–1979)**

At the founding of PRC, with a weak foundation, the state developed a centrally planned socialist system, emphasising public ownership and welfare, mass-based collectivism and egalitarianism. In the health sector, the government managed a centrally directed health delivery system, and defined four principles to guide health and medical work: (1) serve the workers, peasants and soldiers; (2) put prevention first, in particular through the Patriotic Health Campaigns; (3) integrate traditional Chinese medicine with Western medicine; and (4) combine health work with mass movements. These principles of healthcare delivery reform contributed to rapid improvement in the health of the population, creating some reform models (e.g. ‘Barefoot Doctors’, ‘Cooperative Medical System’ and ‘three-tier health service delivery system’) that were highly valued by the WHO. During this period, despite a shortage of healthcare resources, China’s healthcare

| Table 1 | Socioeconomic and health indicators for China and other E7 countries |
|---------|---------------------------------------------------------------------|
|         | China | India | Brazil | Mexico | Russia | Indonesia | Turkey |
|         | 1990  | 2000  | 2010   | 2017   | 2017   | 2017      | 2017   |
| GNI per capita, PPP (current international $)* | 990  | 2900  | 9290   | 16800  | 6950   | 15270     | 18210  |
| GDP growth (annual %)* | 3.91 | 8.49  | 10.64  | 6.90   | 7.17   | 1.06      | 2.04   |
| Human Development Index (HDI)† | 0.50 | 0.59  | 0.71   | 0.75   | 0.64   | 0.76      | 0.77   |
| Life expectancy at birth, total (years)* | 69.3 | 72.0  | 75.2   | 76.4   | 68.8   | 75.7      | 77.3   |
| Maternal mortality ratio (modelled estimate, per 100000 live births)‡ | 97   | 59    | 36     | 29     | 145    | 60        | 33     |
| Mortality rate, under-5 (per 1000 live births)§ | 53.8 | 36.8  | 15.8   | 9.3    | 39.4   | 14.8      | 13.4   |
| Mortality rate, neonatal (per 1000 live births)§ | 29.5 | 21.4  | 8.4    | 4.7    | 24     | 8.5       | 7.6    |

The E7 (short for ‘Emerging 7’) is the seven countries, China, India, Brazil, Mexico, Russia, Indonesia and Turkey, grouped together because of their major emerging economies (cited in Wikipedia).

*Source: The World Bank.
†Source: United Nations Development Program (UNDP).
‡Source: UNICEF.
§Source: WHO.

GDP, gross domestic product; GNI, gross national income; PPP, purchasing power parity.
Stage 2: 30 years after the ‘reform and opening up’ policy (1979–2009)

Beginning in 1978, China began its ‘reform and opening-up’ policy, ushering in a socialist market economy that encouraged a free market and focused on economic growth. This led to a fundamental transformation of the Chinese healthcare system and had a profound impact.28 29 With privatisation and marketisation, the changes in the healthcare system included: a shift from public financing to private sources; a reorganisation of public hospitals and clinics into commercial enterprises; decentralising healthcare governance to local governments; and a pricing policy that enabled facilities to gain profits.30 31 These changes helped expand healthcare resources and improve medical technology and equipment, but also posed many problems (eg, reduced government expenditure on healthcare, less emphasis on rural areas and public health, and overutilisation of unnecessary or expensive care),32–34 resulting in a series of adverse effects, such as increased disparities between rural and urban residents, a decline in public health, rising healthcare costs and sharp decreases in insurance coverage.23 31 35

In 2003, the severe acute respiratory syndrome epidemic revealed weaknesses in China’s health system and focused a domestic and international spotlight on those weaknesses.36 This wake-up call opened a window of opportunity for a new round of healthcare reform.

Stage 3: the latest round of healthcare reform (2009 to present)

With the policy goals of achieving a ‘harmonious society’ as a national priority, the Chinese government launched a new round of healthcare reform in 2009.37 It is an unprecedented health system transformation towards UHC, aiming to provide universal coverage of basic healthcare by the end of 2020.38 39 Following extensive interagency consultation and public debates, this launch emphasised a return to government-led, people-centred healthcare and healthcare as a public good. The latest round of healthcare reform adopted the ‘best fit’ with the existing institutional and policy frameworks towards achieving UHC by an incremental approach (step by step), which was recommended by the WHO team.40

The ‘Opinions on Deepening the Health Care System Reform’ that were promulgated by the Central Committee of the Communist Party of China (CPC) and the State Council marked the start of China’s new healthcare reform.41 The comprehensive reform plan can be summarised as ‘one goal, four beams, and eight columns’ (figure 1).42 43 Under the goal of achieving UHC, China concentrated on establishing the four systems (ie, public health service system, medical service system, health insurance system, and drug supply and security system), based on the eight functional mechanisms that could provide essential supports. Accordingly, three sequential phases of healthcare reform plans were to be carried out to achieve the overall goal by 2020: the 2009–2011 phase, the 2012–2015 phase and the 2016–2020 phase (figure 1).31 44

Figure 1 Overall framework and road map of the new round of healthcare reform. *12th Five-Year Plan on deepening the medical system reform. **13th Five-Year Plan on deepening the medical system reform.
Figure 2  The priorities and relationship among the three healthcare reform plans.

The 2009–2011 phase
The first 3-year reform plan laid a foundation for the 2020 goal. There were five reform priorities: (1) accelerating the establishment of a basic health insurance system; (2) establishing a preliminary national essential drug system; (3) improving the primary care delivery system to provide basic healthcare; (4) making basic public health services (BPHS) available and equal for all; and (5) piloting public hospital reforms. Reforms during this first phase focused on strengthening primary care. This phase of reform obtained positive evaluations and was confirmed to be heading in the right direction by WHO and others.12 47 48

The 2012–2015 phase
The second phase of healthcare reform, China’s ‘12th Five-Year Plan’, continued in the same general direction.49 The reforms were promoted and deepened during this period, and clarified three tasks: (1) basic health insurance for all; (2) consolidation and improvement of the essential drug system; and (3) reform of public hospitals. The focus of reform gradually shifted from primary care to the public hospitals, especially county public hospitals. The county public hospitals lead the reform of public hospitals through subsidising medical services with profit from drug sales, and comprehensively promoting the reform of the management system, compensation mechanism, personnel distribution, procurement mechanism and price mechanism.

The 2016–2020 phase
Following the reform tasks specified at the Third Plenary Session of the 18th Central Committee of the CPC in 2013, the ‘13th Five-Year Plan on deepening the health care system reform’ marked the beginning of the third phase, a comprehensive drive for deeper reform.50 The reform of this phase focuses on the transitions from: (1) laying a solid foundation to improving quality; (2) framework work to system construction; and (3) single-area breakthroughs to system integration and comprehensive promotion. ‘Tripartite System Reform (TSR)’, which refers to the linkage reform of the medical care,
### Table 2 Summary of the main reform initiatives and achievements, 2009 to present

| Reform areas             | Main reform initiatives                                                                 | Achievements                                                                                                                                 |
|--------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Health insurance system  | Expanding the population coverage of the basic health insurance schemes.                | More than 95% of the population covered by social health insurance schemes in 2018.                                                          |
|                          | Extending the health service package of the basic health insurance schemes.              | The number of pharmaceuticals on the drug list was expanded to 2643 in 2019; government subsidies per capita for the URBMI and NRCMS have increased more than fivefold in 2018 compared with 2009. |
|                          | Developing the MFA for people living in extreme poverty.                                | In 2018, a total of ¥42.46 billion was spent from medical assistance funds nationwide to subsidise 76.739 million people to participate in basic medical insurance, and 53.61 million people received outpatient and inpatient assistance. |
|                          | Developing the CMI for those people with catastrophic medical expenditure.              | Since 2013, CMI has covered 1.01 billion people in China and benefited more than 11 million people (60% of whom are rural residents), and reimbursement payments have exceeded ¥30 billion. |
|                          | Integrating basic health insurance systems of rural and urban residents: merging NRCMS and URBMI into the URRMI. | Unifying insurance coverage, funding policies, insured treatment, reimbursement catalogues, management of contracted medical institutions and fund management: for example, the number of drugs covered in the insurance drug list is unified to 2643 in 2019, and the per-capita premium is unified to ¥693 in 2018. |
|                          | Reforming the payment system.                                                          | 65% of public hospitals above the second level have carried out reforms of the disease category-based insurance payment in 2017; announcing a list of 30 pilot cities for DRG payment reform in 2019. |
| Drug supply and security system | Zero mark-up policy on drug sales.                                                      | All public hospitals nationwide have removed the medicine mark-ups in 2017.                                                                   |
|                          | Formulating and expanding the NEML.                                                    | Issuing a revision of the NEML in 2009 including a list of 307 essential medicines, and expanding the list to 520 medicines in 2012 and 685 medicines in 2018. |
|                          | Supplying and evaluating the generic drugs.                                             | Publishing the first list of 34 generic drugs on June 2018; as of 28 August 2019, 313 product specifications have passed the generic drug consistency evaluation. |
|                          | Reforming the drug tendering and procurement system.                                    | 11 pilot provinces and 200 pilot cities have implemented the ‘two invoice policy’ tendering system by the end of 2017; the drug procurement costs of the corresponding varieties in 11 pilot cities fell from ¥7.7 billion to ¥1.9 billion, and the cost dropped by 75.3%. |
|                          | Promoting rational use of essential drugs.                                              | Rates of antibiotic use in inpatient and outpatient care decreased by 50% in selected tertiary hospitals.                                         |
| Medical service system   | Increasing investment in the primary healthcare system, including strengthening the infrastructure of PHC facilities. | Government subsidies to PHC institutions have increased substantially: from 2009 to 2017, subsidies as a proportion of total PHC income increased from 12.3% to 32.5%. |
|                          | Expanding human resources for primary care through incentives and supporting projects.  | Compared with 2012, the total number of primary healthcare workers in 2017 increased by 7.1% to 3.863 million, and the number of general practitioners per 10,000 population increased from 0.8 to 1.8. |
|                          | Developing a tiered service delivery system by establishing HCAs and providing family practitioners contracted services. | Tiered healthcare system started by 95% of municipalities by the end of 2017; all 2134 tertiary public hospitals in China participated in the establishment of HCAs in 2018. |
|                          | Improving pricing policies: removing mark-up of drugs as a source of finance for all public hospitals, increasing the price of medical services that can reflect the value of medical staffs’ technical services. | In 2017, 27.5% of the medical revenue of public hospitals reflected the value of technical services of medical staff (medical service income), an increase of 2.8 percentage points over the previous year. Drugs and consumables accounted for 48.0% of the total revenue, 4.2 percentage points lower than the previous year. Among them, the proportion of medicines dropped to 34.7%. |

Continued
medical insurance and pharmaceutical industry, became the basic principle for comprehensively deepening the healthcare reform. It is noteworthy that this phase of reform is guided by the ‘Healthy China 2030’ strategy, which emphasises ensuring population health for all individuals across the life course and integrated Health in All Policies.54,55

Figure 2 illustrates the priorities and relationship among the three healthcare reform plans.

**MAIN REFORM INITIATIVES AND ACHIEVEMENTS OF THE PAST DECADE**

**Health insurance system**
Reforming the health insurance system is essential and critical since it has served as the major source of financing for the healthcare delivery system. Basic health insurance in China, including the Urban Employee Basic Medical Insurance, the New Rural Cooperative Medical Scheme (NRCMS) and the Urban Resident Basic Medical Insurance (URBMI), laid the foundation for universal insurance coverage. Priority was given to expanding the scope and health service package of the basic insurance coverage, improving provider payment mechanisms, as well as increasing the financing level, fiscal subsidies and reimbursement rates. To improve equity in access to healthcare between rural and urban areas and efficiency in operation of the schemes,55 the Chinese government consolidated the fragmented health insurance schemes by merging NRCMS and URBMI into the Urban and Rural Resident Medical Insurance in 2016,54 and then established the National Healthcare Security Administration in 2018 to implement unified management for these insurance schemes. In addition, the government launched Medical Financial Assistance in 2003 and Catastrophic Medical Insurance in 2012 as supplementary medical insurance to provide funds for patients with poverty and catastrophic illness.55 The moves, parts of ‘Health Poverty Alleviation (HPA)’ (a critical element of the national Poverty Alleviation Project), are significant steps towards ‘Healthy China’ and UHC, protecting people with low incomes from impoverishment due to exorbitant healthcare costs, and breaking the cycle of poverty and ill health.55 The payment reform is being implemented to modify the behaviour of providers and to control the unreasonable growth of medical expenses—replacing fee-for-service payment with comprehensive payment methods based on disease category.56

**Drug supply and security system**
As the base of drug supply and security system, the national essential medicines system reform is comprehensive and includes but is not limited to the following: the selection, production and distribution of essential medicines; quality assurance; reasonable pricing; tendering and procurement; a zero mark-up policy on sales; rational use and reimbursement; and monitoring and evaluation.57 The government issued a revision of the National Essential Medicines List (NEML) in 2009 including a list of 307 essential medicines, and constantly expands the list to fully meet the needs of basic healthcare.58 These on-list medicines should be available at all primary care institutions. To improve access to medicines, China boosted the research and development of generic drugs, and required the evaluation of generics to prove they are equivalent to the originator products in terms of quality and efficacy.59 A ‘two invoice policy’ tendering system was developed to avoid higher mark-up and reduce circulation during the process of distribution.60 All medicines in the NEML are included in health insurance reimbursement lists, which are reimbursed at higher rates compared with non-essential medicines.

**Medical service system**
Establishing a strong primary care delivery system is an ongoing priority in China. The government has increased
investment in primary care, with initiatives that include strengthening the infrastructure of primary healthcare (PHC) facilities, expanding human resources for primary care through incentives and supporting projects, establishing a general practitioner system and improving the capacity of PHC personnel through training and education, such as general practice training and continuous medical education programmes. Public hospital reforms focus on removing drug mark-ups as a source of financing, and rationalising medical service pricing (eg, improving the price of medical services that can reflect the value of medical staffs’ technical services, and piloting the removal of medical consumable mark-ups). Additionally, the priority task is establishing a tiered healthcare delivery system by developing healthcare alliances to improve intersectoral coordination and integration and providing family practitioners contracted services. The development of private hospitals is encouraged to increase the supply of healthcare resources. Further, telemedicine is promoted to improve the delivery of services to people living in remote and poverty areas.

Public health service system

The ‘equalization of basic public health services’ policy implemented the national BPHS programme and the crucial public health service (CPHS) programme. It aims to reduce major health risk factors, prevent and control major communicable diseases and chronic diseases and improve response to public health emergencies. This policy seeks to achieve universal availability and promote a more equitable provision of basic health services to all urban and rural citizens. The BPHS set out the minimum services for all citizens, including health management and monitoring. The service package can be expanded by local governments according to local public health issues and financial affordability. CPHS seeks to fight important infectious diseases (eg, prevention and control of tuberculosis, AIDS and bilharziasis) and meet important infectious diseases (eg, prevention and control of tuberculosis, AIDS and bilharziasis) and meet important infectious diseases (eg, prevention and control of tuberculosis, AIDS and bilharziasis). At the initial phase of the healthcare reform, on the basis of limited financial fund, the Chinese government increased investment in healthcare infrastructure and greatly increased the coverage of health insurances, achieving the universal coverage maximally. After years of exploration during the reform process, it was realised that China should strike a proper balance between the government and the market—play the government’s leading role in providing basic health services, and at the same time, introduce appropriate competition mechanisms to energise the market in non-basic health services, encouraging the private sector to provide multilevel and diversified medical services.

Third, a strong PHC system should be regarded as a core component in realising UHC. Along with the new Declaration of Astana, PHC for health as a global priority is the pathway to reach the SDGs and UHC. In the early days, some experience in PHC in China demonstrated that ‘health for all’ is a practical possibility, for example, the Patriotic Health Campaign and ‘Barefoot Doctors’. The Patriotic Health Campaign encouraged everyone to participate in public health activities, and aimed to improve sanitation, hygiene, health education, as well as combat infectious diseases. Engagement of civil society is necessary to promote UHC. The ‘Barefoot Doctors’ model used limited medical resources to provide common disease diagnosis and prevention services to a large rural population. However, the Chinese healthcare system created adverse consequences after market-based reforms, in part due to a weakening of support for PHC. Today, recognising the importance of revamping its PHC system, the Chinese government has made PHC a priority in its ‘Healthy China 2030’ strategy.

In addition to these general lessons, there are also some lessons with Chinese characteristics, providing reform experiences for other countries: (1) China’s health reforms are usually piloted and then rolled out nationwide, such as the public hospital reform; or the reform started from the grass level and then refined for
the nation, such as the Sanming model. (2) In the latest phase of reform, China is paying more attention to the systemic and linkage reform (i.e., TSR). This innovative strategy can help promote the dynamic balance among medical care, medical insurance and medicine, and construct a coordinating healthcare system to achieve UHC.

CONCLUSION

A strength of our study was that we systematically and comprehensively assessed healthcare reform in the past decade moving towards UHC in China, including evolution, initiatives and achievements. The lessons learnt from China could help other nations improve UHC in sustainable and adaptive ways, including continued political support, increased health financing and a strong PHC system as basis. The experience of the rapid development of UHC in China can provide a valuable model for countries (mainly LMICs) planning their own path further on in the UHC journey.

Author affiliations
1Institute of Hospital Management, West China Hospital, Sichuan University, Chengdu, China
2Research Center of Traditional Chinese Medicine, China Academy of Chinese Medical Sciences, Beijing, China
3Chinese Evidence-Based Medicine Center, West China Hospital, Sichuan University, Chengdu, China
4Department of Health Policy and Management, Fielding School of Public Health, University of California, Los Angeles (UCLA), Los Angeles, California, USA
5Department of drug policy and evaluation research, China National Health Development Research Center, Beijing, China
6President’s Office, West China Hospital, Sichuan University, Chengdu, China
7UCLA Center for Health Policy Research, Los Angeles, California, USA

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ORCID iD Wenjuan Tao http://orcid.org/0000-0002-5926-2545

REFERENCES

1Verrecchia R, Thompson R, Yates R. Universal health coverage and public health: a truly sustainable approach. Lancet Public Health 2019;4:e10–11.
2Organization WH. The world health report 2013: research for universal health coverage, 2013.
3Bump J, Cashin C, et al. Participants at the Bellagio Workshop on Implementing Pro-Poor Universal Health Coverage. Implementing pro-poor universal health coverage. Lancet Glob Health 2016;4:e14–16.
4Tichener M, Sridhar D. Universal health coverage, health systems strengthening, and the world bank. BMJ 2017;358:j3347.
5Horton R. Offline: WHO-a roadmap to renewal? Lancet 2017;390:2230.
6The Lancet Public Health. Universal health coverage: realistic and achievable? Lancet Public Health 2019;4:e11.
7Atun R, Aydin S, Chakraborty S, et al. Universal health coverage in turkey: enhancement of equity. Lancet 2013;382:65–99.
8Agustina R, Dartanto T, Sitompul R, et al. Universal health coverage in Indonesia: concept, progress, and challenges. Lancet 2017;390:75–100.
9Tangcharoenathsin V, Witthayapipopsakul W, Panichkriangkrai W, et al. Health systems development in Thailand: a solid platform for successful implementation of universal health coverage. Lancet 2018;391:1205–23.
10Sarker AR, Sultana M, Mahumud RA. Cooperative societies: a sustainable platform for promoting universal health coverage in Bangladesh. BMJ Glob Health 2016;1:e000052.
11Liang L, Langenbrunner JC. The long March to universal coverage: lessons from China. universal health care coverage studies series (UNICO) No. 9. Washington DC: The World Bank, 2013.
12Yip WC-M, Hsiao WC, Chen W, et al. Early appraisal of China’s huge and complex health-care reforms. Lancet 2012;379:833–42.
13Meng Q, Xu L. Monitoring and evaluating progress towards universal health coverage in China. PLoS Med 2014;11:e1001694.
14UNFPA. World population Database-China. 2019. Available: https://www.unfpa.org/data/world-population/CN [Accessed 6 May 2019].
15China: human development indicators, 2018. Available: http://hdr.undp.org/en/countries/profiles/CHN# [Accessed 7 Aug 2019].
16Brown RE, Priz DG, Liu Y, et al. Reforming health care in China: historical, economic and comparative perspectives, 2012.
17Bank W. The world bank in China, 2019. Available: https://www.worldbank.org/en/country/china [Accessed 9 May 2019].
18Marten R, McIntyre D, Travassos C, et al. An assessment of progress towards universal health coverage in Brazil, Russia, India, China, and South Africa (BRICS). Lancet 2014;384:2164–71.
19UNDP. Report on China’s implementation of the millennium development goals (2000–2015): 2015.
20Chen M-S. The Great Reversal: Transformation of Health Care in the People’s Republic of China. In: Cockerman WC, ed. The Blackwell companion to medical sociology, 2001.
21Hesketh T, Wei XZ. Health in China. from MAO to market reform. BMJ 1999;314:1543–5.
22Dobson A. Health care in China after MAO. Health Care Financ Rev 1981;2:41–53.
23Liu X, Yu Y. The health sector in China policy and institutional review. Washington, DC: World Bank, 2004.
24Wen C. Barefoot doctors in China. Lancet 1974;1:976–8.
25Hsiao W, Li M, Zhang S. China’s universal health care coverage, towards universal health care in emerging economies, social policy in a development context. London: Palgrave Macmillan, 2017.
26Meng Q, Yang H, Chen W, et al. People’s Republic of China health system review. Manila: WHO Regional Office for the Western Pacific, 2015.
27Babbarz KS, Eggleton K, Miller G, et al. An exploration of China’s mortality decline under MAO: a provincial analysis, 1950-80. Popul Stud 2015;69:39–56.
28Hsiao WC. Transformation of health care in China. N Engl J Med 1984;310:932–6.
29Blumenthal D, Hsiao W. Privatization HW. Privatization and its discontents—the evolving Chinese health care system. N Engl J Med 2005;353:1165–70.
30Burns LR, Liu GG. China’s healthcare system and reform. United Kingdom: Cambridge University Press, 2017.
31Hsiao W, Li M, Zhang S. China’s Universal Health Care Coverage. In: Yi L, ed. Towards universal health care in emerging economies: opportunities and challenges. London: Palgrave Macmillan UK, 2017: 239–66.
32Hillier S, Shen J. Health care systems in transition: people’s Republic of China. Part I: an overview of China’s health care system. J Public Health Med 1996;18:258–65.

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State Council’s opinions on integrating the basic medical care system for urban and rural residents, 2016. Available: http://www.gov.cn/zhengce/content/2016-01/12/content_10582.htm [Accessed 13 Jul 2019].

54. Fang H, Eggleston K, Hanson K, et al. Enhancing financial protection under China’s social health insurance to achieve universal health coverage. BMJ Global Health 2019;4:365:i2358.

55. Guidance opinions of the general office of the state Council on further deepening the reform of basic medical insurance payment methods, 2017. Available: http://www.nhc.gov.cn/bgt/gtywjs/201707/t20170705_184936.html [Accessed 28 Aug 2019].

56. Yu S. Essential medicine policy in China: pros and cons. J Med Econ 2013;16:289–94.

57. He J, Tang M, Ye Z, et al. China issues the National essential medicines list (2018 edition): background, differences from previous editions, and potential issues. Biosci Trends 2018;12:448–5.

58. Opinions of the general of state Council on reforming and improving the policy of supply and use of generic drugs, 2018. Available: http://www.gov.cn/zhengce/content/2018-04/03/content_5279546.htm [Accessed 25 Aug 2019].

59. Barber SL, Huang B, Santosio B, et al. The reform of the essential medicines system in China: a comprehensive approach to universal coverage. J Glob Health 2013;3:301030.

60. State Council’s guidance on establishing a general practitioner system. 2011. Available: http://www.nhc.gov.cn/wjw/gfxwj/201304/b749ec482955d0b8b04327605bbab.shtml [Accessed August 30 2019].

61. Meng Q, Mills A, Wang L, et al. What can we learn from China’s health system reform? BMJ 2019;365:i2349.

62. Guidance on the promotion of family practice contract service, 2016. Available: http://www.gov.cn/zhengce/content/2016-06/06/content_5579884.htm [Accessed 21 Aug 2019].

63. Mo H. Opinions on promoting the gradual equalization of basic public health services, 2009. Available: http://www.gov.cn/ztzl/ygyt/content_1661065.htm

64. Yuan B, Balabanova D, Gao J, et al. Strengthening public health services to achieve universal health coverage in China. BMJ 2019;365:i2358.

65. The state Council’s opinions on implementing healthy China action, 2019. Available: http://www.gov.cn/zhengce/content/2019-07/15/content_5408922.htm

66. Friebed R, Mollov A, Leatherman S, et al. Achieving high-quality universal health coverage: a perspective from the National health service in England. BMJ Global Health 2018;3:e000994.

67. Kluge H, Kelley E, Barkley S, et al. How primary health care can make universal health coverage a reality, ensure healthy lives, and promote wellbeing for all. Lancet 2018;392:1372–4.

68. WHO. Primary Health Care — The Chinese experience. Geneva: World Health Organization, 1983.

69. The China’s essential health work, 2014. Available: http://www.chinadayi.com.cn/m/chinahealh/2014-07/15/content_17786163.htm [Accessed 15 Sep 2019].

70. Li X, Lu J, Hu S, et al. The primary health-care system in China. Lancet 2017;390:2584–94.

71. Fu H, Li L, Li M, et al. An evaluation of systemic reforms of public hospitals: the Sanning model in China. Health Policy Plan 2017;32:1135–45.

72. Li H, Jiang L. Catastrophic medical insurance in China. Lancet 2017;390:1724–5.

73. GBIHealth. The latest 313 generic drug evaluation drug summary (2019.8.28), 2019. Available: https://med.sina.com/article_detail_103_2_70915.html [Accessed 7 Sep 2019].

74. He P, Sun Q, Shi L, et al. Rational use of antibiotics in the context of China’s health system reform. BMJ 2019;365:i4016.

75. Yip W, Fu H, Chen AT, et al. 10 years of health-care reform in China: progress and gaps in universal health coverage. Lancet 2019;394:1192–204.