A *Lancet* Commission on the Health and Poverty Alleviation Initiative in China

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Executive summary

Poverty alleviation is a pressing global challenge that is intricately linked with health, as emphasised by the Sustainable Development Goals (SDGs). In 2019, out-of-pocket health expenditure—health-care costs paid directly by individuals or households rather than covered by insurance or other third-party payers—pushed an additional 344 million people into poverty globally. In 2020, 724 million people were living in extreme poverty, defined as living on less than US$2·15 per person per day at 2017 purchasing power parity, 90 million more than the pre-COVID-19 pandemic UN projection. When prioritising economic development and growth, governments often overlook the intrinsic link between ill health and poverty, an oversight that is reflected in the poor integration of health into poverty-reduction strategies of low-income and middle-income countries.

Over the past few decades, China has made progress in poverty alleviation due not only to rapid socioeconomic growth, but also to its campaign to eliminate poverty-related illness. Launched in 2015, China's Health and Poverty Alleviation Initiative was a pioneering effort to integrate health into its national poverty reduction strategy, and contributed to China achieving its ambitious goal of eradicating extreme poverty by 2020. The campaign was underpinned by values of equity and inclusivity and has evolved from fragmented medical and welfare programmes into universal coverage and so-called last mile efforts, which target the most vulnerable people.

Unlike conventional programmatic interventions that can be assessed with straightforward cost-effectiveness tools, this initiative is a complex, layered package of multisectoral policies with long-term investments and

Key messages

- Despite the strong link between ill health and poverty, health considerations are often inadequately integrated into poverty alleviation strategies around the world.
- Between 2015 and 2020, China lifted approximately 55·8 million people (around 4% of its population) out of poverty, ending absolute poverty in all counties.
- Between 2015 and 2020, China's central government invested a total of CN¥1·4 trillion (approximately US$215·6 billion) into the Health and Poverty Alleviation Initiative, representing an average annual growth rate of 11·6% in funding.
- China's Health and Poverty Alleviation Initiative integrates efforts across health, water, sanitation, housing, nutrition, and education to address the root causes of poverty and health disparities and emphasise the need for a coordinated, multisectoral framework for poverty reduction.
- In this initiative, a targeted approach using verified sociodemographic data and real-time national monitoring enabled precise identification of households at high risk of poverty, ensuring that assistance reached those most in need.
- The initiative built upon previous health-care reforms and prioritised the enhancement of both health-care delivery and financing to better serve people living below the poverty line.
- Financial protection and service coverage for people living below the poverty line improved substantially: their share of out-of-pocket inpatient expenditure among total inpatient expenditure declined from 41·0% in 2013 to 31·0% in 2018, treatment rates for 30 curable severe diseases reached 99·6%, and hypertension control increased from 33·0% in 2019 to 45·4% in 2022. These improvements were accompanied by accelerated gains in access to safe water, sanitation, and housing among people living below the poverty line, narrowing equity gaps.
- Despite progress, China's Health and Poverty Alleviation Initiative faces challenges, including financial sustainability, continued urban–rural health disparities, rising incidence of non-communicable diseases, evaluation difficulties, and threats such as population ageing, climate change, pandemics, technological shifts, and the digital divide.
- China's health-related poverty alleviation efforts need to evolve from campaign-based action into a long-term, institutionalised model, addressing structural weaknesses, adapting to changing socioeconomic and environmental conditions, and strengthening the resilience of social support and health-care systems.
- For other low-income and middle-income countries, integrating health as a core pillar of poverty alleviation could transform health investment into a powerful driver of sustainable poverty reduction. Strong multisectoral coordination and data-driven precision targeting, in alignment with health system reforms, are essential to ensure resources reach people who are most in need and achieve equitable impact.

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multidimensional outcomes. Evaluating its performance requires recognising the interplay between health, education, social protection, infrastructure, and governance, and therefore calls for a broader analytical approach. This Commission aims to systematically, critically, and independently assess China's experiences, setbacks, and challenges regarding its poverty alleviation campaign, especially around health-related domains, thereby identifying prioritised pathways towards achieving the SDGs.

China's Health and Poverty Alleviation Initiative was designed to prevent and remedy poverty caused by illness. The initiative weaves health interventions into a broader antipoverty framework through a targeted poverty alleviation approach, making use of verified sociodemographic data and real-time monitoring to identify households at high risk of poverty, ensuring that resources reach those most in need. The strength of the initiative lies in its multisectoral strategy that aligns health, water, sanitation, housing, nutrition, and education while leveraging existing health-care reforms to enhance service delivery and financing for people living below the poverty line. A dual-track implementation structure comprises both vertical and horizontal governance arrangements. Vertical governance adopts a combination of top-down and bottom-up approaches, with central guidance and local adaptation, and horizontal collaboration connects government departments, health institutions, enterprises, and civil society in localities. A monitoring and accountability system, encompassing the National Dynamic Monitoring System for Preventing Return to Poverty Due to Illness—which tracks more than 80 million rural residents registered as having low income—and performance evaluations tied to resource allocation, underpins implementation and oversight. Public communication campaigns encourage self-reporting, preventive screenings, and adherence to medical advice, supporting impoverished individuals as partners in health and poverty alleviation and driving people-centred, locally precise interventions.

The initiative achieved its planned results by 2020: all 832 counties officially designated as impoverished surpassed the national poverty line, and the number of people living below the poverty line decreased to zero from 55·8 million in 2015. The proportion of out-of-pocket inpatient expenditure among total inpatient expenditure for individuals living below the poverty line dropped from 41·0% in 2013 to 31·0% in 2018, and treatment rates for 30 types of curable severe diseases reached 99·6%. Control rates for chronic diseases, such as hypertension, among people living below the poverty line increased from 33·0% in 2019 to 45·4% in 2022. Access to safe water, sanitation, and housing also improved, narrowing gaps with people living above the poverty line. For example, access to safe drinking water among people living below the poverty line increased from 89·4% in 2014 to 94·5% in 2020, and endemic fluorosis cases declined by more than 94% from 2015 to 2021. Sanitation advanced with flushable toilet coverage rising from 24·5% in 2015 to 66·4% in 2021; from 2013, dilapidated rural housing renovation efforts expanded substantially, reaching 17·94 million households by 2019. In terms of health infrastructure, village clinics and township health centres were fully functional in all areas previously affected by poverty, where beds per thousand people in county hospitals increased by 7·1% annually. These outcomes show the initiative's effectiveness in enhancing health equity through improved access within and beyond the health sector, although more refined assessment of the initiative's impact is complicated by data limitations and overlapping initiatives.

Despite these achievements, enormous challenges persist. Sustained investment is strained due to reliance on government funding, and urban–rural health disparities remain. The rising burden of non-communicable diseases, compounded by population ageing, climate change, pandemics, and the digital divide, poses threats to sustaining the outcomes achieved. To address these issues, future strategies must focus on diversifying funding, strengthening primary health care, leveraging technology for equitable access, and embedding a health-first approach across all policies. China's health and poverty alleviation efforts must evolve from campaign-based action into a long-term, institutionalised model that ensures resilience and sustainability.

In conclusion, China's Health and Poverty Alleviation Initiative not only played an essential role in reducing poverty rates in China but also contributed to improved health outcomes. Despite these achievements, the current challenges and recommendations for the future highlighted by this Commission are crucial for improving the Health and Poverty Alleviation Initiative, ensuring both equity and quality. Looking ahead, as China is emerging as a crucial partner in global poverty alleviation efforts, insights into China's trajectory towards sustainable health and poverty alleviation will provide important lessons to other countries who are developing health-related policies to alleviate poverty.

Introduction

Poverty alleviation is a central goal in the pursuit of the Sustainable Development Goals (SDGs). Despite some global progress, more than half a billion people were living in extreme poverty before the COVID-19 pandemic struck.[1] The COVID-19 pandemic, coupled with slow economic growth and a widening income gap in its aftermath, has exacerbated global poverty since 2020, reversing years of progress in poverty reduction.[2] Consequently, efforts to eradicate extreme poverty have stalled and, in many contexts, even moved backwards.[3]

Poverty alleviation is a complex and multifaceted process shaped by various factors, such as the level of

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economic development, the allocation of gains from growth, employment opportunities, skill development, and social protection. Population health—a crucial yet often overlooked area—plays a key role in the poverty cycle. In 2019, an estimated 344 million people globally were pushed into or futher into extreme poverty due to out-of-pocket health expenses—a figure probably worsened by the COVID-19 pandemic.[4] Beyond direct medical costs, poor health also diminishes labour productivity, restricts educational attainment, and weakens long-term earning potential; yet, despite its profound impact, the burden of poor health is rarely explicitly addressed in global poverty alleviation strategies, which hinders the effectiveness of efforts that aim to lift populations out of poverty.

China provides a clear example of these dynamics. In 2015, poverty due to health-related reasons affected approximately 20 million people and accounted for more than two-fifths of the nation's individuals who lived below the poverty line.[5] Illness not only depleted household finances but also curtailed work capacity and labour force participation. For instance, the productivity losses in China attributable to diabetes alone were estimated to be US$613·60 billion in 2017.[6] Recognising these intertwined challenges, China made improving health a crucial component of its poverty alleviation strategy and aligned its actions with the broader vision of Healthy China 2030, a national blueprint that emphasises health as a foundation for social and economic development. As a country that once had the largest population of people living below the poverty line in the world, China's success in lifting all citizens out of extreme poverty by 2020 would not have been achievable without its focus on population health.[7] Central to this effort is China's Health and Poverty Alleviation Initiative, which explicitly integrates health into its national poverty reduction strategy and makes it a feature of the country's poverty alleviation approach.

Importantly, this initiative was not a single, isolated programmatic intervention but a large-scale, multifaceted, systemic policy package. As illustrated in figure 1, the Initiative built upon ongoing health-care reforms to strengthen service delivery and financing for disadvantaged populations. The core of the initiative lies in combining poverty alleviation with a multisectoral strategy that embeds health considerations within broader development domains, including water, sanitation, housing, nutrition, and education. Through a targeted poverty alleviation approach, the initiative was designed to identify households living below the poverty line and disease-specific vulnerabilities, by use of verified sociodemographic data and real-time monitoring that enabled tailored interventions for ensuring resources and support reach those most in need.

The aim of this Commission is to conduct a comprehensive and independent investigation into the various dimensions and effects of China's Health and Poverty Alleviation Initiative. We assess the initiative's achievements and lessons learned, including its goals, policy strategies, execution tactics, effectiveness, challenges faced, and potential solutions. The Commission's larger interests are twofold and mutually reinforcing. First, with this Commission, we seek to institutionalise China's Health and Poverty Alleviation Initiative to ensure its resilience, sustainability, and enduring effectiveness, particularly in terms of strengthening health services and reducing vulnerability to health-related poverty. Through this process of systematic reflection and learning, the initiative can be embedded more deeply within China's health and social systems, providing a durable framework for future action. Second, building upon this strengthened domestic foundation, we aim to translate China's experience into globally relevant insights by offering practical lessons, innovative approaches, and reflections on the challenges of advancing poverty alleviation through integrated, multisectoral strategies. By deepening and institutionalising its own model, China can more effectively contribute to global knowledge and cooperation in health and development.

To support this assessment, the study drew on data from a range of sources, including nationally representative datasets such as the China National Health Surveys, the China Family Panel Study, and the China Health and Retirement Longitudinal Study. Additionally, we used an administrative database, the National Dynamic Monitoring System for Preventing Return to Poverty Due to Illness (NDMS), managed by the National Health Commission of China, which contains detailed information on more than 80 million individuals who were previously living in poverty. This dataset includes data on socioeconomic status, disease conditions, health-care use, and macro-level health resource allocation. Many data from the NDMS are presented or analysed for the first time in this Commission; these data are not publicly available and access for this Commission was obtained through formal authorisation from the National Health Commission of China.

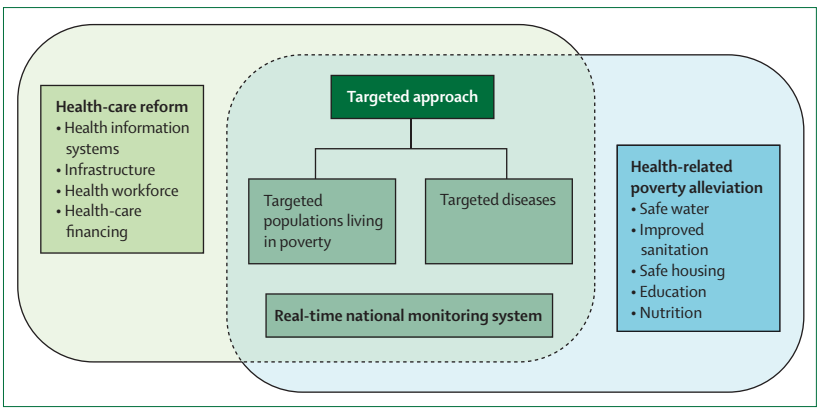

Figure 1: **Health and poverty alleviation**

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The work of this Commission was conducted through a collaboration between Tsinghua University's Vanke School of Public Health and *The Lancet*. The Commission comprised 30 independent experts from diverse fields, including health policy, development economics, epidemiology, sociology, governance, and implementation science. Representing a mix of experts from high-income, middle-income, and low-income countries, with balanced gender representation, the Commission was uniquely positioned to critically and systematically assess China's Health and Poverty Alleviation Initiative. Our work provided an objective assessment of the initiative's successes, setbacks, and challenges, and generated evidence that could inform poverty alleviation efforts worldwide.

This Commission is structured as follows: part 1 provides an overview of the relationship between poverty and health, and emphasises global challenges and strategies for poverty alleviation. In part 2, a historical overview and the foundational policies pertaining to health and poverty alleviation are provided, along with the objectives and implementation actions of China's Health and Poverty Alleviation Initiative. In part 3, we assess the effectiveness of the initiative. In part 4, we summarise the experiences, key characteristics, and challenges—both current and anticipated—of China's Health and Poverty Alleviation Initiative, and offer potential future directions for global health and poverty alleviation efforts. Finally, part 5 presents key lessons and experiences relevant for the global community.

Part 1: Global strategies and challenges in poverty alleviation

In the 2030 Agenda for Sustainable Development, the UN aims to end poverty in all its manifestations everywhere (SDG 1); however, achieving this goal by 2030 remains a profound global challenge.[8,9] Although substantial progress has been made in reducing extreme poverty in recent decades, the pace of reduction has slowed since 2015, with the trend even reversing due to the impact of COVID-19 in 2020.[10,11] By 2020, using the $2·15 per person per day poverty line, 724 million people—9·3% of the global population—were living in extreme poverty, underscoring the intensifying nature of this challenge.[3]

China, a middle-income country, has made progress in poverty reduction despite various economic, social, and environmental challenges. Between 2015 and 2020, approximately 4% of the Chinese population (55·8 million individuals) was lifted out of poverty (defined with the national poverty line of CN¥2300 per person per year at 2010 constant prices, equivalent to $2·30 per person per day in 2011 purchasing power parity [PPP] terms).[12] By the end of 2020, all rural residents identified as living below this national poverty threshold had been lifted out of poverty, and all 832 designated impoverished counties had been removed from the national poverty list.[12] This progress enabled China, representing nearly one-fifth of the world's population, to achieve the UN's poverty reduction target ahead of schedule and holds broader implications for global population health, poverty reduction, and human development.

Among the many causes of poverty, health expenditure has emerged as a major contributing factor.[7,13,14] In 2019, an estimated 344 million people globally (4·4% of the global population) were pushed into extreme poverty due to out-of-pocket health expenditure.[4] China faced a similar challenge. In 2015, health-related costs were the reason 44·1% of its households below the poverty line were in poverty, affecting nearly 20 million people; of these, 7·34 million individuals were suffering from serious illness and chronic diseases.[15]

The intricate relationship between ill health and poverty has been extensively documented previously.[16] On the one hand, poverty serves as a major cause of ill health.[17] Economically disadvantaged individuals can struggle to afford essential resources such as high-quality food, medicines, or safe living environments, which are crucial for maintaining good health.[18–20] Additionally, exposure to hazardous environments is heightened for people who are economically disadvantaged, and access to timely health-care provision is often obstructed by scarce information and inconvenient health-care options. On the other hand, ill health is increasingly recognised as a major contributor to poverty. The unpredictable and substantial costs associated with health care, including out-of-pocket expenditure, transportation costs, and other indirect costs of seeking care, can push individuals into poverty.[19] Chronic illness exacerbates poverty by reducing work capacity, lowering productivity, and leading to substantial income loss.[1,19,21] In extreme cases, the financial burden of medical care alone can precipitate impoverishment. Thus, a vicious cycle emerges, in which poverty begets ill health, and ill health perpetuates poverty.

Despite the strong link between ill health and poverty, health considerations are often inadequately integrated into poverty alleviation strategies. This disconnect is largely due to a fragmented approach to policy making, whereby health initiatives and economic programmes are developed in silos. Poverty reduction efforts typically emphasise direct transfers, such as subsidised goods and services or employment guarantees, and improvements in production capabilities, focusing on enhancing land, labour, and capital to boost income. The role of health, however, frequently receives insufficient attention. This gap is evident in the analysis of Poverty Reduction Strategy Papers from low-income countries, in which few proposals effectively address health needs.[22] Even in countries that adopt a human capital approach that aims to invest in education, health, and nutrition, resources are disproportionately allocated to education, leaving health concerns largely neglected.[23] For example, in Costa

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Rica, major social assistance programmes primarily prioritise educational outcomes, whereas health needs receive comparatively less attention.[24] As a result, poor coordination can weaken efforts to address the root cause of poverty, and some vulnerable populations might still face barriers to essential health-care services that could help disrupt the cycle of poverty.[25] Bridging this gap could support more integrated and sustainable poverty reduction efforts.

Within the health sector, global evidence on health-related poverty alleviation strategies primarily focuses on two main approaches: first, expanding existing mechanisms to reach people with low income, and second, developing new parallel schemes to cover them. Some countries opt to extend the coverage of existing mechanisms, such as social health insurance or national health services, to include people with low income (through full premium subsidies or fee waivers). Bringing people with low income under the same system applicable to the entire population can offer better redistribution opportunities through greater financial and risk pooling and can limit discrimination against people with low income in terms of health-care provision. In addition to treatment, prevention is integrated into these strategies with the aim of reducing future health-care costs and health disparities.[26] Some countries have implemented targeted programmes to cover people with low income, such as Cambodia's Health Equity Fund and Pakistan's Sehat Sahulat and Bait-Ul-Mal programmes.[27,28] The use of poverty-targeting mechanisms is generally aimed at containing programme costs and directing resources to populations with the lowest income.

Although these strategies undoubtedly make important contributions to improving the living conditions of people with low income and expand coverage by prioritising the most vulnerable groups, they often leave many coverage gaps within the country. Proxy means tests and flawed administrative procedures for establishing eligibility for these programmes often lead to exclusion errors that leave many people uncovered in practice.[29] Many of these programmes still have little coverage and often offer different benefit packages or amounts of financial protection for people with low income, thereby reinforcing inequalities.[30] Furthermore, this fragmentation can result in minimal or no ownership from the general population. Consequently, political support and financial commitment can diminish over time, jeopardising the adequacy and sustainability of these actions.[31] Without integration with other schemes to ensure coverage for the entire population, regardless of whether they fall into the low-income category, coverage gaps persist, and the so-called missing middle (ie, individuals in the informal economy, who are engaged in economic activities outside formal employment arrangements, often do not have access to contributory social protection schemes, and are not eligible for these programmes) often remain uncovered.

Recognising the vicious cycle between poor health and poverty, China began to place health more centrally in its poverty reduction efforts in the mid-2010s. This action provides a distinctive case for examining how health can be systematically incorporated into poverty alleviation strategies, particularly in addressing health-related vulnerability among populations with the lowest income.

Part 2: China's Health and Poverty Alleviation Initiative

The integration of health into poverty alleviation in China has been a gradual process shaped by the country's developmental phases and the evolving policy focus at each stage. Before 2015, health and poverty alleviation were largely developed in parallel, with some policy links but no unified framework. Health initiatives, such as Rural Cooperative Medical Schemes and targeted public health campaigns, improved population health and provided partial financial protection. During the period from the 1980s to 2014, China's poverty alleviation efforts were predominantly region-based and investment-led, relying on broad infrastructure development and economic stimulation across areas officially designated as impoverished on the basis of national poverty assessment criteria, including income, living conditions, and socio-economic development indicators.[32] Together, these broad health and development initiatives addressed population-wide poverty and vulnerability and laid an essential foundation for the subsequent transition to more precisely targeted interventions.

A major turning point occurred in 2015, when health-related vulnerability came to be understood as a structural driver of persistent poverty rather than a peripheral social issue. From this point onward, health improvement and poverty alleviation were no longer treated as separate policy domains but were progressively integrated into a unified strategic framework.

This integration was institutionalised through the launch of the Health and Poverty Alleviation Initiative in 2015, which focused on overcoming what is known as the last mile challenge: reaching the most impoverished and vulnerable populations, particularly those facing catastrophic health expenditures in rural and remote areas. This phase specifically targeted the hardest-to-reach populations and regions, which are often geographically isolated. To tackle these challenges, China implemented targeted strategies to accurately identify populations still in poverty, develop tailored interventions, and allocate resources effectively to lift these populations out of poverty. Recognising illness as an important driver of poverty among rural populations, the Chinese government integrated health as a central element into its poverty alleviation agenda. Consequently, a systematic framework was established that concentrates on four key areas: health-care financing, health-care delivery, targeted treatment, and public health and disease control.[33,34] Moreover, a multisectoral

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governance framework was established to coordinate actions across numerous government bodies, including the National Health Commission, the National Rural Revitalization Administration, the National Development and Reform Commission, the Ministry of Human Resources and Social Security, the Ministry of Education, the Ministry of Civil Affairs, the Ministry of Housing and Urban–Rural Development, the Ministry of Water Resources, and other relevant agencies.[33,34] Within this governance structure, the health sector played a central coordinating role in addressing illness-related poverty, and other sectors contributed complementary interventions targeting the broader social determinants of health.

Here, we focus on the design, strategies, and intended mechanisms of China's Health and Poverty Alleviation Initiative. Although the planned interventions and policy frameworks are highlighted here in part 2, the actual implementation and outcomes faced particular challenges and limitations, which are discussed in detail in subsequent parts.

2.1 Goals and strategies

China set an ambitious goal to eradicate poverty by the end of 2020. Preventing individuals from falling into or returning to poverty due to illness was a key element of this goal. The Health and Poverty Alleviation Initiative, launched in 2015, outlined specific objectives:[35,36] each individual in officially designated impoverished areas would have access to basic health-care services and a reduction in out-of-pocket expenses; major infectious diseases and endemic diseases would be effectively controlled in these areas; health indicators (eg, life expectancy, maternal mortality, and infant mortality) would reach the national average; the capacity of the health facilities in those key counties officially designated as impoverished would be greatly strengthened; and the health disparities and the gap in the allocation of health resources between regions would narrow.

To achieve these objectives, three key strategies were adopted. The first strategy was Targeted Poverty Alleviation, initiated in 2013, which marked a shift from earlier, more broad poverty reduction approaches towards a more focused strategy that emphasised precise identification, targeted assistance, and effective management for impoverished populations.[7] The second strategy was a multisectoral approach: engaging all levels of government alongside private, non-profit, and international organisations to address the educational, housing, and clean water needs of people living below the poverty line. The third strategy leveraged established health-care reforms, including the development of infrastructure and integrated resources, such as medical insurance, health information systems, medicines, and the health workforce. These strategies are illustrated in the appendix (p 3).

See Online for appendix

2.1.1 Strategy 1: Targeted Poverty Alleviation

Given the diversity of people living below the poverty line and the limitations of earlier broad measures,[37,38] the Targeted Poverty Alleviation strategy, initiated in 2013, emphasised precise identification of the most vulnerable households and provision of tailored assistance, including targeted interventions such as the Three Regions and Three Prefectures.[39] This strategy encompassed the entire process from accurately identifying individuals in poverty to preventing them from falling back into it.

Precise Poverty Identification was a detailed process designed to identify and manage people with low income, and therefore ensure that assistance reached those most in need. The process began with the collection of comprehensive sociodemographic data from households identified through the national poverty registration process, which were then verified through on-site visits by local officials.[35] These data allowed for the categorisation of households based on their specific needs and economic conditions, ensuring that the assistance provided was appropriately tailored. The verified data were stored in a real-time national database, enabling continuous monitoring and adjustments to aid allocation on the basis of changing conditions. This system not only enabled efficient resource distribution, but also maintained transparency, allowing public oversight to ensure the integrity and effectiveness of the poverty alleviation efforts.

Once precise identification was completed, the focus shifted to precision assistance and management. Tailored assistance measures were developed to address the specific needs of impoverished areas and of each household, with clear responsibilities assigned to poverty alleviation officials and assistance personnel. Deeply impoverished areas were prioritised and posed substantial challenges for the Health and Poverty Alleviation Initiative. These areas are defined as regions with particularly severe and concentrated poverty, often characterised by greater remoteness, weaker infrastructure, and more complex socioeconomic constraints than other impoverished areas. These areas required targeted interventions to address their specific difficulties.[40] Marked by their remoteness and substantially higher poverty rates than the national average, these areas—including, but not limited to, what were known as the Three Areas and Three Prefectures—demanded focused and strategic interventions to overcome their unique difficulties (panel 1). Additionally, precise management was implemented to ensure that policies and funding were directed toward impoverished households and individuals. Key initiatives include establishing the NDMS (panel 2), strengthening the supervision of poverty alleviation funds, and conducting performance evaluations of poverty alleviation interventions to ensure their effectiveness.

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In terms of targeted treatment for different types of diseases, to alleviate the financial burden imposed by the diagnosis and treatment of diseases—particularly diseases involving long-term conditions and complications—the Health and Poverty Alleviation Initiative classified diseases that severely affected the productivity and living conditions of individuals living below the poverty line into three categories: curable severe diseases, chronic diseases, and long-term treatment-dependent critical diseases (referred to as critical diseases). Curable severe diseases were characterised by heavy financial burden, but they had clear diagnostic and treatment pathways that generally led to favourable treatment outcomes. For example, the relative treatment costs for congenital heart disease and childhood leukaemia were considered high, but the prognosis was considered favourable after standardised treatment. Accordingly, the programme identified designated hospitals for concentrated treatment of curable severe diseases, and formulated localised diagnostic and treatment plans, clinical pathways, fee standards, and medical quality management that aligned with the local health-care service capabilities. Following thorough investigations and expert consultations, the Health and Poverty Alleviation Initiative selected 21 curable severe diseases for prioritised management in 2018, which marked a substantial increase from the nine diseases covered in 2016.[45]

Chronic diseases, such as hypertension, diabetes, and severe mental disorders, are long-term conditions characterised by persistent symptoms that diminish labour capacity and quality of life. As part of the Health and Poverty Alleviation Initiative, individuals living below the poverty line were provided with health cards that recorded their health status and medical conditions and entitled them to at least one yearly health check-up. Physicians from township health centres or village clinics sign contracts with individuals living below the poverty line to provide integrated services such as public health interventions, chronic disease management, health counselling, and traditional Chinese medicine interventions. For individuals with chronic disease, the assigned physician is responsible for developing personalised health management plans and delivering contracted services. These services include face-to-face follow-ups; monitoring of health indicators such as heart rate, blood sugar, and blood pressure; and guidance on diet, exercise, and mental health. For patients who require hospitalisation, the assigned physician coordinates with designated hospitals to provide care.[46] When compared with other countries, China's control rates for hypertension and diabetes among people living below the poverty line were remarkably high. The hypertension control rate for this population in China reached 45·4%, well above the median rate of 20·3% (IQR 8·7–24·5) observed in other upper-middle-income countries and substantially higher than the average median rates in low-income countries (10·5% [7·8–14·7]) and lower-middle-income countries (15·4% [12·4–19·6]; appendix pp 4–5). Regarding diabetes, among populations living in poverty, China's control rate of 55·2% far surpasses the median rates found in low-income countries (18·2% [9·8–24·1]), lower-middle-income countries (28·6% [13·6–39·1]), and other upper-middle-income countries (35·8 [20·3–47·7]; appendix pp 6–7).

Critical diseases require ongoing and extensive medical expenses as they cannot be cured with a single treatment, which often results in the loss of labour capacity and economic resources. Compared with curable severe diseases, critical diseases are more difficult to treat and tend to worsen, especially in cases such as cancer and tumours. The required medical expenses are often exorbitant, making them unaffordable for families. To address this dynamic, the government leverages fiscal and medical insurance funds to provide financial health-care protection for people living below the poverty line and engages private enterprises and social organisations through charitable donations and targeted assistance programmes to help alleviate economic burden. The government implements preferential targeted payment policies, with a focus on reducing the deductible thresholds and increasing reimbursement rates for impoverished individuals, and has integrated Urban–Rural Residents Basic Medical Insurance, Catastrophic Insurance, and Medical Financial Assistance to enable coordinated reimbursement (see section 2.1.3 for details). Individuals living below the poverty line can access treatment before payment, with only out-of-pocket

Panel 1: **The Three Areas and Three Prefectures**

The Three Areas are the Tibet Autonomous Region; the southern Xinjiang prefectures of Hotan, Aksu, Kashgar, and Kizilsu Kirgiz; and Tibetan-inhabited areas in Sichuan, Yunnan, Gansu and Qinghai. The Three Prefectures are Liangshan Yi Autonomous Prefecture in Sichuan, Nujiang Lisu Autonomous Prefecture in Yunnan, and the Linxia Hui Autonomous Prefecture in Gansu Province.[40]

The Three Areas and Three Prefectures comprise 209 counties with a total area of 2·90 million square kilometres, accounting for 30·2% of the country's total land area.[38] As of 2016, these areas held for 1·9% of China's total population but 8·2% of the country's population below the poverty line, with a poverty rate of 16·7%—3·7 times the national average.[38]

These areas faced numerous public health challenges, including endemic and infectious diseases, malnutrition, and limited access to essential health-care services due to geographic remoteness and insufficient health-care resources, which perpetuated a vicious cycle of poverty and illness.[35] Endemic and infectious diseases and viruses such as HIV/AIDS, tuberculosis, and hydatid disease were particularly prominent in some deeply impoverished areas (ie, with particularly severe and concentrated poverty) and constituted important drivers of poverty and relapse into poverty.[41–43] These conditions impose substantial physical and economic burdens on affected individuals and their families, reducing their ability to work and increasing their medical expenditure.

To address these issues, targeted interventions were designed, implemented, and tailored to the unique health and socioeconomic needs of each area.

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Panel 2: National dynamic monitoring system for preventing return to poverty due to illness

Background

To enable precise monitoring and targeted delivery of health and poverty alleviation efforts, the National Dynamic Monitoring System for Preventing Return to Poverty Due to Illness (NDMS) was established in 2016. The primary aim was to monitor and manage crucial information related to diseases, health conditions, and expense reimbursements for health and poverty alleviation, down to the household, individual, and specific illness. The system maintains a dynamic monitoring panel of households identified as vulnerable to returning to poverty due to illness, under the principle of policies remaining in place even after households are officially lifted out of poverty.

The foundation of the system was a nationwide survey targeting 45 primary key diseases and 48 secondary key diseases that contribute substantially to disease burden among rural communities with low income. More than 800 000 health workers were dispatched to villages to conduct household surveys, which involved verifying the prevalence of illnesses among people registered as low-income in rural areas and gathering information on the capabilities and resources of local health institutions. This extensive fieldwork laid the groundwork for creating a comprehensive monitoring system that could provide targeted support and interventions.

Design and goal

The system was specifically designed to integrate health and poverty alleviation tasks across all administrative levels, from provinces to villages. Its objectives included providing a comprehensive data repository for key indicators, such as:

- The proportion of poverty caused by illnesses
- The number and geographical distribution of patients living below the poverty line
- Details of medical conditions and treatments
- Progress on health-care interventions and treatment outcomes
- Medical expenses

This approach addressed major challenges, including delays in identifying health-related poverty issues, insufficient coordination between different levels of administration, and insufficient supervision and assessment of health interventions. The real-time, granular data supported policy makers in making informed decisions, allocating resources appropriately, and monitoring the effectiveness of interventions.

Impact

Since its inception, the NDMS has had a profound impact on China's efforts to combat poverty caused by illness. More than 80 million people with low income in rural areas have been registered into the system, covering 25 provinces, 297 cities, 2364 counties, 30 000 towns, and 450 000 villages across the country. 16·94 million individuals living below the poverty line due to illness were identified by the end of 2019, allowing for more precise targeting of interventions.[44] Precision management of 220 000 three-tier health systems at the village, township, and county levels in impoverished areas ensured that health-care resources were directed where they were most needed.[44]

Beyond the NDMS's role in identifying households at risk of returning to poverty due to illness, the system has also been central to strengthening the management and standardised care of chronic diseases among rural communities with low income. In particular, it provides continuous monitoring and follow-up for patients with hypertension and diabetes. By linking patient-level information with service delivery data, the system enables routine tracking of treatment adherence, medication supply, and health outcomes, allowing health authorities to measure progress, identify gaps in service provision, and ensure regular, standardised management in line with national guidelines.

The system has become a cornerstone for enabling dynamic tracking and targeted interventions, and therefore preventing households from falling back into poverty due to illness. By bridging gaps in identification, coordination, and assessment, the system has set an example for large-scale health and poverty alleviation initiatives in other low-income and middle-income countries.

expenses due at discharge, thus simplifying the medical insurance reimbursement process. Additionally, non-state actors are mobilised through charitable organisations to collect public donations and create dedicated funds to reduce or exempt individual financial burdens.[47]

2.1.2 Strategy 2: a multisectoral approach

To address the last mile challenge in poverty alleviation, China adopted a multisectoral strategy in 2015, integrating interventions in health, water, sanitation, housing, nutrition, and education to tackle the structural drivers of poverty and health disparities. Under a coordinated whole-of-government framework, different sectors retained primary responsibility for interventions within their mandates while aligning their programmes with the goals of the Health and Poverty Alleviation Initiative. This approach emphasised that reducing health-related poverty required coordinated efforts beyond the health system, linking medical protection with improvements in living conditions, environmental health, and social welfare.

In rural China, the Minimum Living Standard Guarantee Program (or dibao), under the stewardship of the civil affairs authorities, serves as the cornerstone of the social assistance system. Introduced in 2007, it provides cash transfers to households whose per capita income falls below the locally defined minimum threshold, thereby safeguarding their basic subsistence needs.[48] A large proportion of dibao recipients are households below the national poverty line due to illness

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or disability, creating a substantial overlap with the target population of the Health and Poverty Alleviation Initiative. The two programmes are functionally complementary: while the dibao offers income support to secure basic living conditions, the Health and Poverty Alleviation Initiative reduces the financial burden of disease through enhanced health insurance, critical illness coverage, and medical assistance. In practice, rural households receiving support through the dibao programme are designated as priority recipients within the Health and Poverty Alleviation Initiative and receive higher reimbursement rates, lower deductibles, and direct medical aid. By linking income protection with expanded health coverage, the dibao plays an indispensable last-resort role in reducing the risk of illness-induced poverty and ensuring the sustainability of China's poverty alleviation achievements.

Ensuring access to safe drinking water in rural areas is another core focus of the Health and Poverty Alleviation Initiative, specific to the field of water conservancy.[49] Since 2015, the Ministry of Water Resources has spearheaded the National Rural Drinking Water Safety Consolidation and Promotion Projects, which aim to expand piped water supply to families lying on the last mile and address challenges like fluorine, arsenic, and brackish water contamination.[50] These efforts use technologies such as remediation and purification to improve water quality.[51] In 2018, the Ministry of Water Resources and other entities introduced the Evaluation Standard for Rural Drinking Water Safety (T/CHES 18–2018) to enhance safety assessments, particularly in impoverished areas. Furthermore, the National Rural Drinking Water Quality Monitoring Network has collected data from more than 98% of townships, providing crucial monitoring for effective management.[52,53]

Sanitation improvement has been an important component of China's efforts to improve population health. China has long been committed to improving sanitation, yet by 2012, approximately 28% of the population living in rural areas did not have access to improved sanitation (the latest data available before the launch of the Health and Poverty Alleviation Initiative).[54,55] Since the initiation of the programme, key policy initiatives, including the 5-Year Action Plan for Improving Rural Living Environment and the Healthy China 2030 Planning Outline, have been introduced to target populations previously unreached by earlier efforts. Chinese leadership has consistently underscored the importance of the so-called toilet revolution in various instances, emphasising its precise and effective promotion as a crucial factor in public health.[56] The Chinese government has mandated that revolution efforts start with the tourism system and then be extended to rural areas.[57,58]

Improving safe housing is another central element of China's poverty eradication efforts, embedded in the Two Assurances and Three Guarantees policy.[59] To support this goal, the central government allocated ¥23 billion ($5·5 billion in 2017 PPP) for the renovation of dilapidated rural houses. The subsidy per household increased from ¥8500 ($2033·50 in 2017 PPP) in 2015 to ¥14 000 ($3349·30 in 2017 PPP) by 2017.[46] Since its launch, the renovation policy has expanded to include comprehensive guidelines for subsidy allocation, identification of dilapidated buildings, construction standards, and fund management. Additionally, the government has integrated housing renovations with improvements in village infrastructure and aesthetics, such as road construction, green spaces, safe water supply, and garbage and sewage treatment.

Malnutrition has long been a concern in China, particularly among people living in poverty. In 2013, rural areas reported high malnutrition rates among children younger than 6 years, with 8·1% stunted, 2·5% underweight, and 2·0% wasted.[60] Since 2015, key interventions have focused on reaching the last-mile population, particularly in rural and underserved areas. The Chinese government therefore adopted the National Nutrition Plan (2017–30), which targets reductions in malnutrition, including stunting, anaemia, breastfeeding, and folic acid deficiency. The plan specifically focuses on vulnerable groups such as children, older people, individuals with illnesses, and people living in impoverished regions.[61] Additional key components include enhanced nutrition monitoring, updated dietary intake guidelines, and educational initiatives promoting healthy diets. Furthermore, existing programmes, such as Ying Yang Bao, have been expanded. Ying Yang Bao is a government-supported nutrition intervention programme that provides fortified food supplements and micronutrient supplementation to infants and young children, particularly those aged 6–24 months in economically disadvantaged rural areas. Separately, the National Nutrition Plan proposed nutrition-package interventions for pregnant women as part of its early-life nutrition strategy. The programme provides essential nutrients, including iron, zinc, calcium, vitamin A, and vitamin D, to address nutritional deficiencies among populations at high risk of malnutrition.[62]

In terms of education, China has 9 years of compulsory education, but although approximately 95% of the population had completed compulsory education by 2014, challenges persist in reaching the remaining 5%.[63] To address this gap, education poverty alleviation was incorporated into the 13th 5-Year Plan in 2015, specifically targeting last-mile populations in rural and remote areas.[59] By 2019, the central government allocated more than ¥300 billion ($71·8 billion in 2017 PPP) to local education, with more than 80% directed toward the middle and western regions.[64] In addition, 1 272 100 rural teachers in these areas benefitted from a living allowance policy aimed at improving educational quality and retention in impoverished regions.[65] By addressing the crucial determinants of health, these multisectoral

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initiatives aim to reduce health risks and improve quality of life, particularly in impoverished areas.

2.1.3 Strategy 3: leveraging existing health-care reform

A key strategy of China's Health and Poverty Alleviation Initiative was to build on its existing health-care reforms and prioritise the enhancement of both health-care delivery and financing mechanisms to better serve people living below the poverty line.[66] In 2009, 6 years before the start of the Health and Poverty Alleviation Initiative, China initiated comprehensive health-care reform, which prioritised equal access to basic health care and financial risk protection.[67] The reform focused on improving access to health care and financial protection among populations with low income, and some health and poverty alleviation measures acted as add-ons to health-care reform. We illustrate this strategy in terms of infrastructure, health workforce, health information systems, and health-care financing.

In terms of infrastructure, the health-care reform aimed to establish a functioning health-care system in China (figure 2). The three-tiered health-care delivery system in rural China—county hospitals, township health centres, and village clinics—is what people living below the poverty line mainly relied on;[68–70] however, among the impoverished areas (ie, 832 officially designated impoverished counties, 12 913 towns, and 219 914 villages), 46 towns had no township health centres, 666 towns had no qualified doctors in their health centres, 1022 villages had no clinics, and 6903 villages had no qualified doctors in their clinics.[71] Because of the Health and Poverty Alleviation Initiative, the health-care services in all of these areas had been covered by the end of 2019.[70]

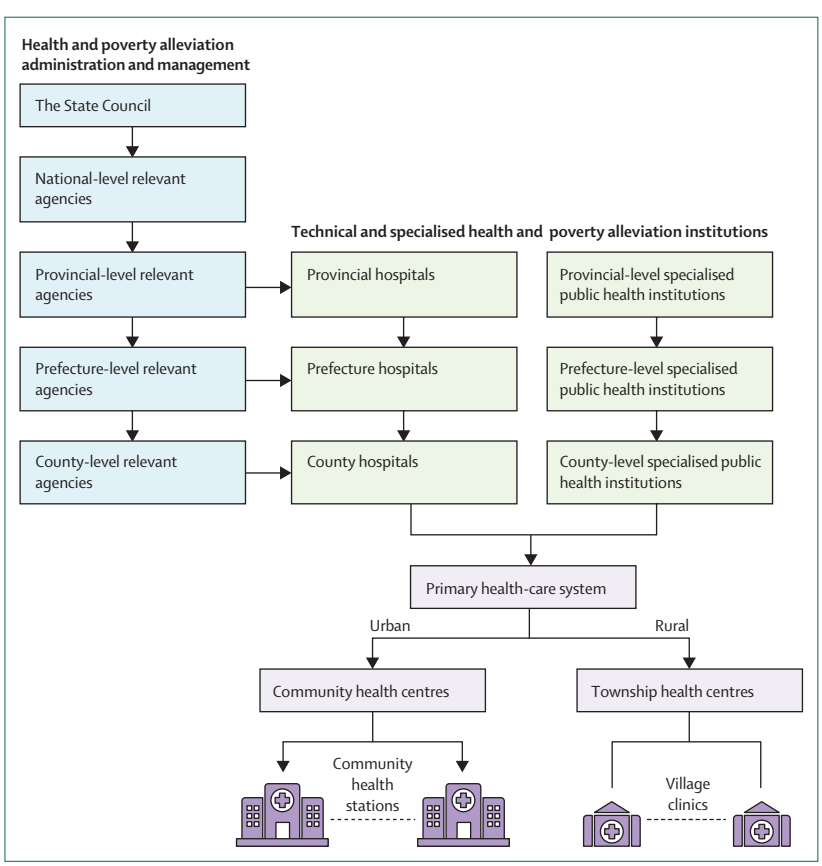

Figure 2: **The health service system of the Health and Poverty Alleviation Initiative**
Relevant agencies at all levels mainly include the Poverty Alleviation Office, the Health Commission, and other departments and institutions.

At the same time, the infrastructure of county hospitals in officially designated impoverished areas was improved. For example, according to data from the NDMS, between 2019 and 2023, the total number of county hospital beds in officially designated impoverished counties increased by more than 78 000, which boosted the number of beds per thousand people from 1·4 to 1·8, with an annual growth rate of 7·1%. Furthermore, although data on the number of hospital beds per thousand people in impoverished areas or among people living below the poverty line are not well documented in most other low-income and middle-income countries, China's figures exceed those of several upper-middle-income countries, including Costa Rica (1·1) and Mexico (1·0).[72]

In addition, standardised facility requirements were set to ensure that county hospitals, village clinics, and township health centres had the necessary medical equipment, medicines, and instruments. Specifically, according to NDMS data, the proportion of county hospitals equipped with 16-slice or higher CT scanners increased from 79·5% in 2019 to 89·8% in 2023, and the proportion equipped with color ultrasound reached 99·2% in 2023. Some township health centres were required to be equipped with more specialised devices, such as hearing and vision screening tools, psychological and behavioural development screening instruments, color ultrasound machines, and other diagnostic and treatment equipment tailored to the services the health centres provide. Village clinics were mandated to have basic tools such as stethoscopes, blood pressure monitors, thermometers, weight and height measurement devices, blood glucose meters, and other related equipment.[73]

A skilled health workforce is necessary for the delivery of quality health services in addition to the availability of sound infrastructure. China adopted a range of measures to promote the sustainable development of the health workforce in officially designated impoverished areas, with a focus on strategic workforce deployment, continuous training, and the wellbeing of health professionals.

In 2016, a policy mechanism called paired-up assistance was launched, under which 1007 tertiary hospitals partnered with 1172 county hospitals across 832 counties affected by poverty.[70] The primary goal was to decentralise high-quality health-care resources to benefit underserved populations. Tertiary hospitals sent health-care teams, including middle-level and senior-level professionals from various fields, such as medicine, technology,

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pharmacy, nursing, and management, to assist with capacity-building at the paired county hospitals. Under this initiative, weaker departments in county hospitals were strengthened, and through these efforts, tertiary hospitals enhanced the management and treatment capacity of county hospitals in officially designated impoverished areas.[70,74]

In addition to the paired-up assistance mechanism, broadly speaking, higher-level health institutions in China were urged to regularly send their health professionals to county hospitals and primary health-care facilities for 1-year or 2-year assignments. These professionals provided both health-care services and hands-on guidance to local health workers. In return, they were given priority for career advancement opportunities, such as faster promotions. Similarly, health workers from county hospitals and primary health-care facilities were selected to receive more training and gain experience at higher-level health institutions.[75]

A key long-term investment in China's poverty alleviation health workforce was the National Compulsory Service Program, which fully funded students, primarily from rural areas, to attend medical school.[76] From 2010 to 2023, approximately 80 000 students participated in the programme, representing the future of China's primary health care (PHC).[77] Upon completion of medical school, participants were required to undergo a 3-year residency in general practice, followed by a 3-year commitment to work as general practitioners (GPs) in township health centres. Launched in 2010, the programme saw its first cohort of fully qualified GPs begin working in township health centres in 2018—an important milestone in the middle of the Health and Poverty Alleviation Initiative.[78] To strengthen the impact of this initiative, the Health and Poverty Alleviation Initiative enhanced incentives for fulfilling this compulsory service obligation, which required programme participants to work in designated township health centres for a specified period after graduation in exchange for subsidised medical education. These incentives included offering more competitive salaries, better career development opportunities, and attractive pension plans, thereby encouraging GPs to remain in officially designated impoverished areas for longer periods (appendix pp 8–9).[79,80]

China's health and poverty alleviation efforts also placed a strong emphasis on information technology in order to improve health care in impoverished areas. The country established a five-tier telemedicine network that connected provincial hospitals to village clinics, enabling remote consultations, diagnoses, and medical training.[81–83] This network was part of the paired-up assistance mechanism mentioned previously, in which tertiary hospitals collaborated with local health-care institutions to provide ongoing support. Central government funds were allocated to equip these areas with essential telemedicine tools and training, ensuring that health workers could effectively use the technology. Accordingly, telemedicine became a crucial tool for delivering health-care services to remote areas, offering capabilities such as remote electrocardiographs, imaging, and pathological diagnoses. These technologies enabled health-care providers in township health centres and county hospitals to consult with specialists in real time, thereby improving diagnostic accuracy and treatment outcomes. The widespread adoption of telemedicine also reduced the need for patients to travel long distances, which eased both financial and logistical burdens on families living below the poverty line.[84]

Moreover, artificial intelligence (AI) technologies were introduced in rural areas to improve health-care services. AI tools, including clinical decision support systems, imaging-assisted diagnoses, and pathology analysis, were integrated into primary health-care facilities to assist local health workers in making more accurate diagnostic and management decisions.[85] For instance, the eHealth China Heart Initiative used big data (ie, large and complex datasets generated from multiple sources) and AI to screen and manage risk factors associated with cardiovascular diseases and establish a new model for chronic disease management to better serve populations in impoverished areas. Another example was remote ultrasound diagnostic robots that allowed specialists in tertiary hospitals to conduct examinations on patients remotely and deliver specialised care without the need for in-person visits.[44]

The operation of the Health and Poverty Alleviation Initiative relied heavily on information systems. The government established the NDMS to monitor and manage programme implementation. In 2016, to comprehensively track key data such as disease verification, health management, and expense reimbursement for health and poverty alleviation targets, more than 800 thousand health workers conducted surveys in villages to investigate and verify the prevalence of illnesses among people registered as living below the poverty line in rural areas and verify the basic information of health institutions. Building on this foundation, the NDMS was developed to provide targeted support. The system was designed to integrate health and poverty alleviation tasks from the provincial level to the village level and store comprehensive data on the proportion of poverty that was caused by illness, the number and distribution of patients living below the poverty line, medical conditions, treatment progress, and medical expenses. This system addressed key challenges, including the delayed identification of the individuals living below the poverty line in rural areas, insufficient coordination between different administrative levels and sectors, and insufficient dynamic supervision and assessment of health and poverty alleviation interventions. Since its inception, the system has registered more than 80 million individuals living below the poverty line in rural areas across 25 provinces,

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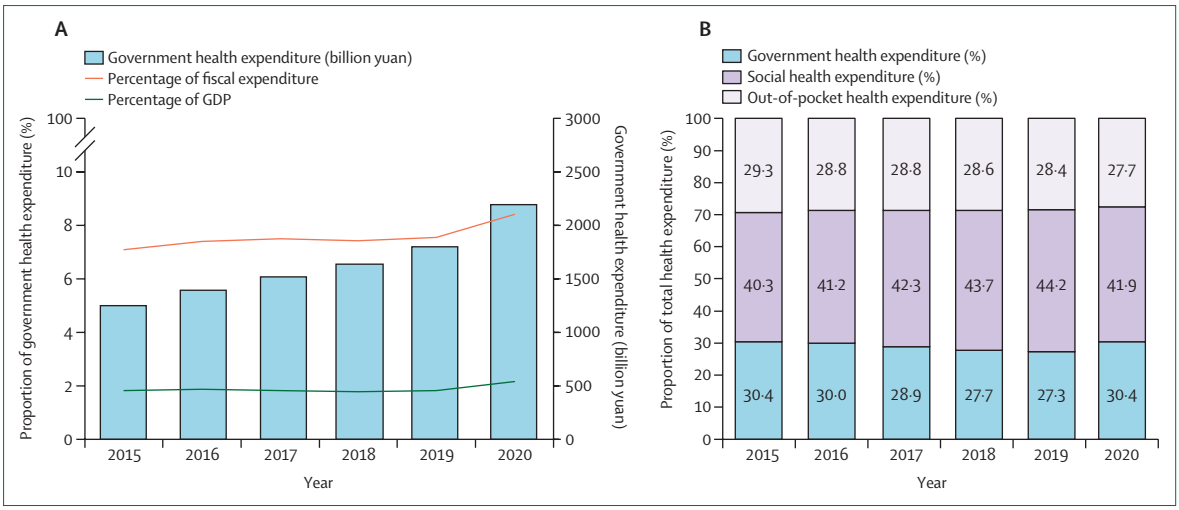

Figure 3: **Components and development trends of total health expenditure**
(A) Government health expenditure and its proportion of total fiscal expenditure and of gross domestic product, 2015–20. (B) Composition of total health expenditure by government, social, and out-of-pocket health expenditure, 2015–20. Data are from the China Health Statistical Yearbook (2016–21).[89–94] GDP=gross domestic product.

297 cities, 2364 counties, 30 000 towns, and 450 000 villages across China.[86] Although infrastructure, health workforce, and health information systems are discussed separately, in practice, they represent a holistic approach to strengthening health-care delivery for the purpose of health and poverty alleviation.

Health-care financing is another aspect of China's health-care reform. The health-care reform launched in 2009 expanded social health insurance coverage, which led to a decline in catastrophic health expenditures.[67,87,88] However, eradicating poverty required much more effort. Increased government spending was necessary, and the medical security system demanded strengthening.

Government health expenditure increased from ¥1·2 trillion ($184·8 billion based on 2015 exchange rates, used throughout this chapter) in 2015 to ¥2·2 trillion (~$338·8 billion) in 2020 (figure 3). The proportion of government health expenditure in both total fiscal expenditure and gross domestic product (GDP) steadily increased, rising from 7·1% and 1·8% in 2015 to 8·4% and 2·2% in 2020, respectively. Meanwhile, out-of-pocket health expenditure as a percentage of total health spending decreased from 29·3% in 2015 to 27·7% in 2020, reflecting a reduction in the financial burden on individuals.

China's overall poverty reduction efforts were supported by pooled financing mechanisms. The Anti-Poverty Fund (APF) was jointly established through contributions from central, provincial, and local governments. In 2020—the final year of China's poverty reduction efforts—the APF collectively accounted for approximately 0·35% of China's GDP. Additional financing sources were also mobilised, and the total volume of assistance provided, including other funds such as loans, financial credits, and transfers from eastern provinces, is estimated to have reached up to 1% of China's GDP in 2020, substantially exceeding the scale of the APF.[95] When it comes to the Health and Poverty Alleviation Initiative, from 2015 to 2020, the central government of China invested a total of ¥1·4 trillion (~$215·6 billion), with an average annual growth rate of 11·6%. More than ¥170 billion (~$26·2 billion) was directed towards more than 150 000 health infrastructure projects in officially designated impoverished areas (figure 4).[97] Additionally, between 2018 and 2020, a total of ¥1·2 billion (~$184·8 million) was allocated for the prevention of endemic diseases, pneumoconiosis, and major chronic diseases. This funding supported early screening and intervention; health management; treatment; monitoring and evaluation of disease prevention programmes; and health education initiatives.[97]

The Health and Poverty Alleviation Initiative in China is closely linked to the medical security system, which comprised three primary components: Urban–Rural Residents Basic Medical Insurance (URRBMI), Catastrophic Medical Insurance (CMI), and Medical Financial Assistance (MFA; figure 5). These different types of programmes collectively helped mitigate ill health risks and vulnerabilities for people living below the poverty line.[98] Coverage surged from 20·5% in 1998 to 95·6% in 2013 among the general population, corresponding to an annualised percentage growth rate of 10·8%. A similar upward trend was observed across all income levels, including people living below the poverty line, who had a coverage rate of 95·6% by 2013. Subsequent to the initiative's launch in 2015, concerted efforts were made to broaden the scope of social health insurance coverage, extending it to previously underserved demographics and effectively addressing the challenge of reaching the most remote areas. During this phase, social health insurance coverage expanded

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from 95·6% in 2013 to 97·1% in 2018, with an annualised percentage growth rate of 0·31%. Particularly noteworthy is the remarkable increase in coverage among people living below the poverty line, who had the most rapid annual growth rate during this period of 0·48%, surpassing the rates observed among all other income groups, which ranged from 0·23% to 0·40% (table 1).

The medical expenses of patients with low income were first reimbursed through the URRBMI, which served as the main structure of China's medical security system for poverty alleviation. For patients living below the poverty line, URRBMI reduced out-of-pocket costs by subsidising premiums, increasing reimbursement rates, and expanding the benefit package. For example, the reimbursement rate for hospitalisation expenses was increased by at least five percentage points for individuals living below the poverty line and the deductible was waived for these individuals when hospitalised in provincially designated medical institutions upon referral.[100]

CMI was designed to address severe illnesses. Initially piloted in 2013, CMI was fully implemented nationwide by 2016, providing supplementary benefits for individuals covered by URRBMI who faced catastrophic health expenditures. Funded through medical insurance transfers and government subsidies, CMI ensured automatic enrolment for URRBMI beneficiaries without additional charges. In 2019, CMI universally lowered its deductible to 50% of the previous year's per capita disposable income and increased its reimbursement rate from 50% to 60%. For people living in poverty, CMI introduced preferential payment policies, halving the deductible again, increasing the reimbursement rate by 5 percentage points, and eliminating the reimbursement ceiling.[101]

For the expenses not covered by URRBMI and CMI, MFA ensured access to health care for the most economically vulnerable. Initially piloted in 2003 and fully implemented nationwide in 2008, MFA was funded through the government budget, the lottery welfare fund, and donations from individuals, enterprises, and social organisations.[102] For the Health and Poverty Alleviation Initiative, MFA introduced preferential assistance policies, such as reducing or eliminating deductibles and increasing reimbursement rates. Additionally, MFA provided cash assistance after the reimbursement from URRBMI and CMI and covered some out-of-pocket expenses below the deductible thresholds set by both programmes.[103] Lastly, local governments served as safeguards by purchasing commercial insurance or directly providing financial assistance for services not covered by URRBMI, CMI, or MFA (appendix p 10). In summary, health-care financing enhanced access to health care and contributed to broad poverty alleviation by easing the economic burden of ill health.

2.2 Implementation system

The implementation system for poverty alleviation was characterised by a dual structure: a vertical dimension involving the interplay between the central government (the State Council) and local governments (bodies operating at the province level and below), and a horizontal dimension encompassing coordination among diverse stakeholders such as government departments, hospitals, primary health-care facilities, and social entities (eg, enterprises).[49] This coordinated implementation structure, integrating both horizontal and vertical approaches, is used for the execution of health and poverty alleviation initiatives, with the aim of ensuring that essential health services and support consistently reach people living below the poverty line.[104]

2.2.1 A Combined top-down and bottom-up approach

In the expansive geographical context of China, a nuanced approach to health governance is necessary due to the fact that uniform policies might not be suitable

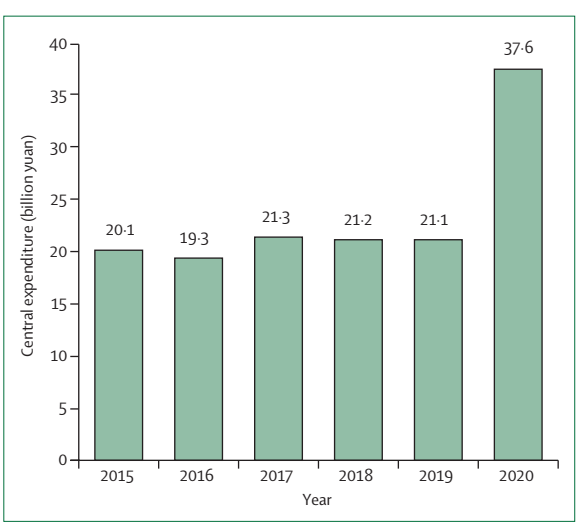

Figure 4: **Investment from the central budget for project construction in provinces with low-income areas**
Data are from the Health Poverty Alleviation Program Online Exhibition.[96]

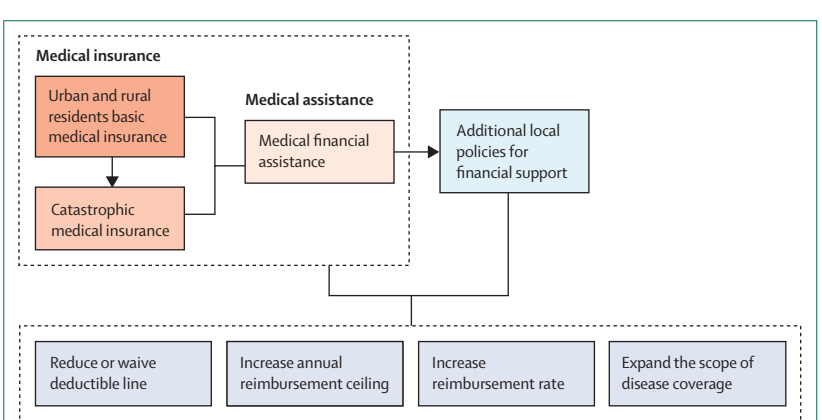

Figure 5: **An overview of the Chinese medical insurance system and its aid policies**

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	1998	2003	2008	2013	2018	Annualised growth rate between 1998 and 2013	Annualised growth rate between 2013 and 2018
Overall	20·5%	22·2%	87·1%	95·6%	97·1%	10·8%	0·31%
First quartile	23·9%	28·0%	88·5%	95·6%	97·2%	9·7%	0·33%
Second quartile	20·9%	23·0%	88·1%	95·9%	97·3%	10·7%	0·29%
Third quartile	20·0%	20·6%	87·3%	96·0%	97·1%	11·0%	0·23%
Fourth quartile	16·6%	16·8%	84·2%	94·9%	96·8%	12·3%	0·40%
In the fourth quartile, but living above the poverty line	16·9%	16·9%	85·7%	94·9%	96·6%	12·2%	0·36%
In the fourth quartile and living below the poverty line	22·1%	18·3%	81·5%	95·6%	97·9%	10·3%	0·48%

Data are from the Center for Health Statistics and Information Analysis Report of National Health Services Survey in China, 2018.[99] The first quartile represents individuals with the highest income and the fourth quartile represents individuals with the lowest income.

Table 1: **Coverage of social health insurance between 1993 and 2018 by income quartile**

across all regions. China typically operates under a highly centralised governance model, with local health authorities acting under the guidance of the central government. Before the health-care reforms initiated in 2009, resource allocation was predominantly determined by the central government, which sometimes led to challenges such as mismatched resource distribution, policy implementation disconnects from local realities, and underdeveloped health-care systems.[105,106] This situation led to a gradual reform of health governance, including decentralisation of authority to lower levels of government.[106] China's Health and Poverty Alleviation Initiative featured a combination of both top-down and bottom-up approaches towards policy making and implementation.[107] This approach aimed to leverage the strengths of both central and local governments, allowing local governments to tailor policies on the basis of local conditions. The shift towards decentralisation was intended to align policy implementation more effectively with the diverse health needs of people living below the poverty line.[108]

The State Council and relevant departments served as the principal architects and primary initiators of China's health and poverty alleviation policies (figure 6). The State Council plays a pivotal role in all stages of the policy through legislative enactments and fiscal support.[109] The delineation of responsibilities among governmental tiers (ie, the vertical dimension) establishes a clear framework wherein the central and provincial authorities conduct top-down surveys of populations living below the poverty line to facilitate more refined estimation of poverty scales and precise identification of key vulnerable populations. This framework in turn facilitates a hierarchical oversight across vertical governments in the implementation of the Health and Poverty Alleviation Initiative.[110]

The State Council also inaugurated a poverty alleviation task force and assigned the leadership of all governmental sectors in order to affirm their primary responsibilities in the execution of poverty alleviation policies.[110] The Central Government designated the implementation of the Health and Poverty Alleviation Initiative as one of the seven major actions for the comprehensive eradication of poverty in China, with the mandate to ensure that rural populations living below the poverty line have access to essential medical and health services, and to strive to prevent poverty caused or exacerbated by health issues.[108] Subsequently, the National Health Commission was designated as the primary agency responsible for health-related poverty reduction initiatives. As the oversight and coordination entity for health and poverty alleviation policies and implementation, health commissions of all governmental levels established the Poverty Alleviation and Paired Support Work Leadership Teams.[111] These teams have developed comprehensive plans of work that span from the provinces and counties down to townships and villages. The leadership team monitors populations who are experiencing or who are at risk of poverty due to health issues.[112] Targeted public health and medical services were provided to these groups as part of the programme's approach to integrating health interventions with poverty alleviation efforts.[112]

From a bottom-up perspective, local governments in China, including provincial, municipal, and county governments, are not merely implementers of central government policies; rather, they adapt these policies and strategies to suit local conditions.[113] By maintaining direct interaction with residents, these local entities develop a deep understanding of their communities' environments and specific needs. This proximity enabled local governments to identify and address unique challenges, thereby aiming to strengthen the health and poverty alleviation framework at the grassroots level.[114]

Furthermore, local governments act as a feedback loop in the national policy-making process. Through established bottom-up feedback channels, they provide local evidence and experiences that help inform and refine higher-level policies.[114] For example, successful initiatives at the county or provincial levels, such as innovative health-care delivery models or unique social safety net programmes, are often presented at national forums as exemplars or best practices. These local initiatives not only influence national policy revisions but

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also guide the direction of future poverty alleviation strategies.[115,116] By closely monitoring these local adaptations, national policy makers can identify effective models and integrate these insights into national policies. This process aims to ensure that policies remain flexible, responsive, and grounded in the real world.[117]

In addition, local governments actively engage in data collection and reporting, thereby contributing substantially to national poverty assessments. Regular surveys, reports, and participatory assessments allow local governments to provide real-time data that reflect the evolving needs of their populations.[118] Such data are crucial for adjusting national poverty standards, resource allocation, and intervention priorities. As a result, local governments play a dynamic role in shaping the national strategy, aiming to ensure it aligns with the needs of the most vulnerable populations.[119]

A case in point is the Precise Poverty Identification process, by which local officials were tasked with registering and categorising those living below the poverty line.[120] This process involved bottom-up participation, as local teams did more than execute a top-down directive—they actively contributed to refining poverty identification criteria and helped ensure no household below the poverty line was overlooked. The detailed data collected by these local teams enabled the identification of vulnerable populations and informed subsequent resource allocation and poverty alleviation strategies.[121,122] Consequently, national policy makers, equipped with these granular data, were better able to direct resources and services to areas with the greatest need.[122] This bottom-up approach fosters a dynamic interaction between local implementation and national policy making, making the entire poverty alleviation effort more adaptive, responsive, and effective.[123] The continuous flow of information from local governments to higher levels of government allowed health and poverty alleviation policies to be adjusted in response to local conditions. By incorporating local knowledge, the the Precise Poverty Identification process aimed to align interventions with both local conditions and national priorities.[113]

2.2.2 Horizontal implementation structure

Within the framework of collaborative governance in China, the integration of health and poverty alleviation initiatives has brought together diverse stakeholder groups.[111] Each group contributes to the enhancement of the health system and services in impoverished areas. The entire Health and Poverty Alleviation Initiative is characterised by multisectoral collaboration and multistakeholder cooperation. The cornerstone of this collective effort is a comprehensive framework aimed at bridging health disparities and bringing together political commitment, led by the central government, the implementation of whole-of-government approaches, and the engagement of private actors, including health-care institutions and enterprises.[117] By assigning clear roles and responsibilities to each stakeholder, China's health and poverty alleviation measures strive to forge a coherent path towards equitable health care and poverty reduction (appendix p 11).[124]

Each level of government acknowledged that reaching health-related poverty alleviation targets required collaborative endeavours of traditionally siloed agencies, and sometimes required these agencies extending beyond their immediate scope. Establishing partnerships beyond health care, such as with stakeholders from education, infrastructure, communication, transportation, the private sector, and civil society, would be essential for achieving success.[111] For example, the Department of Environmental Resources and Protection played an active role in strengthening crucial infrastructure, such as water conservation, transportation, and power. These improvements not only elevated living standards and quality of life, but also promoted

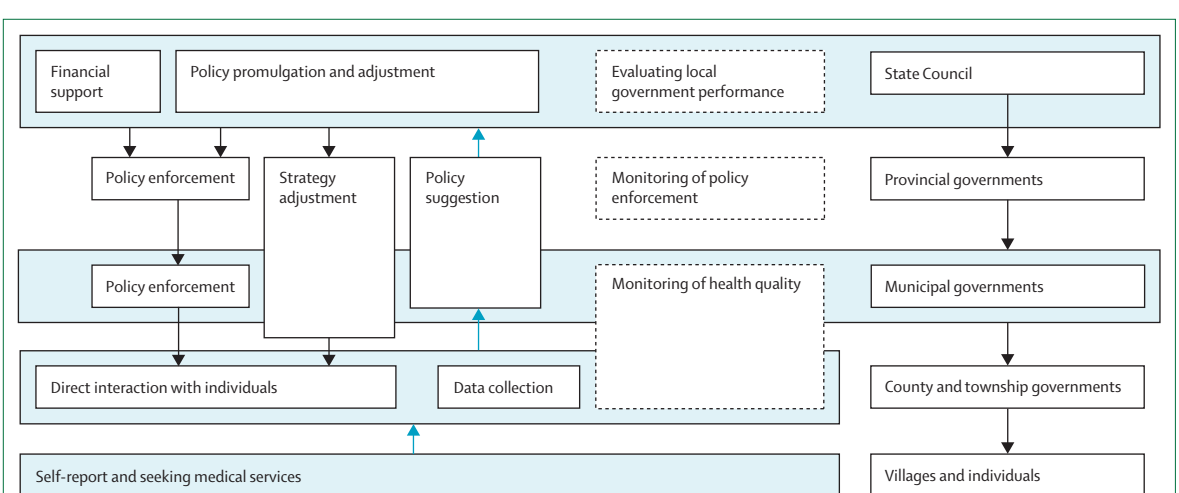

Figure 6: **Main bodies for promoting and implementing the Health and Poverty Alleviation Initiative**

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coordinated economic, social, and health development, and contributed to overall progress.[125] Initiatives such as the Cun Cun Tong Project (a national initiative to extend radio and television broadcasting coverage to rural villages) were instrumental in increasing communication, which leveraged media channels to facilitate improved access to digital health-care services for underserved communities. Because China has increasingly embraced the concept of integrating health into all policies, the approach has gained substantial traction for China's health and poverty alleviation endeavours.[126]

In 2016, the National Health and Family Planning Commission (now the National Health Commission), in collaboration with 14 other departments, issued the Guiding Opinions on Implementing the Health and Poverty Alleviation Campaign.[127] This directive extended across multiple governmental entities, including among many agencies the Ministry of Water Resources, which was responsible for resource and environmental protection, and the Ministry of Human Resources and Social Security, a crucial contributor to social welfare and security. In compliance with the mandates of this central policy guidance document, the National Health Commission coordinated the establishment of an interdepartmental health and poverty alleviation leadership group that implements targeted strategies in not only health and poverty alleviation, but also industrial support, employment assistance, and consumer aid, thereby facilitating the poverty eradication endeavours of counties designated as impoverished.[128]

In addition, enterprises and other non-state actors played an indispensable role in health and poverty alleviation in China.[128] Enterprises contributed through fund donations, provision of medical equipment, and other means to primary health-care systems. Similarly, non-profit organisations, volunteer groups, and other societal entities engaged in health and poverty alleviation through initiatives such as health promotion and campaigns (appendix p 12).[129] The involvement of these stakeholders continues to add supplementary resources and support, enhancing the sustainability and effectiveness of health and poverty alleviation endeavours.[130] Their participation fosters collaboration across various societal spheres, thus enabling a multipronged approach that facilitates the seamless execution of the Health and Poverty Alleviation Initiative.

2.4.3 A national information system to identify and monitor the health of people with low income

The Health and Poverty Alleviation Initiative would not be possible without a well designed information system for tracking progress towards predefined goals and assessing the effectiveness of interventions. The National Dynamic Monitoring System for Preventing Return to Poverty Due to Illness was established in 2016 to systematically collect, analyse, and interpret data (panel 2).[131] This database helps policy makers at all levels obtain valuable insights regarding the allocation and utilisation of resources, as well as areas that require improvement, to inform decision making.[132]

Data monitoring is spearheaded by the State Council Leading Group Office of Poverty Alleviation. Routine monitoring is conducted by the leading offices for health and poverty alleviation at multiple levels of government, including the central, provincial, city, county, and township governments. The adoption of this data-centric approach serves several functions: it allows for precise targeting of vulnerable population groups and individuals, provides evidence for efficient resource allocation and budgeting, and enables real-time monitoring of real-world programme implementation.[132] More importantly, the synergy between these data and administrative layers provides a framework for health and poverty alleviation in China. Data insights inform policy decisions at the higher levels of government, and administrative bodies take cues from these insights for efficient and targeted implementation. Meanwhile, the data are also shared within the government to ensure that health department work done in conjunction with other departments delivers health-care interventions that are effectively reaching communities living below the poverty line.[133] The data collection, analysis, and sharing mechanism ensures policy coherence and operational synergy, enabling timely adaptation to dynamic conditions and specific emerging health issues.[133]

2.2.3 Monitoring and accountability

Monitoring and accountability are crucial for ensuring the effectiveness and efficiency of efforts. A strong monitoring system has been established as a prerequisite for the Health and Poverty Alleviation Initiative to evaluate progress, identify challenges, and thereby hold responsible parties accountable for their actions.[131]

Beyond the NDMS, China's Health and Poverty Alleviation Initiative also relies on China's hierarchical government structure to establish accountability systems at all levels. High-level authorities oversee the performance of government organisations at the lower levels and hold them accountable through regular and sometimes unannounced inspections, through supervision, and through evaluation activities.[132] Prescribed health and poverty alleviation targets, which are agreed to by lower-level health departments, are therefore strictly evaluated against, and are essential for the next year's financial resource allocation and future project planning. The health-related poverty reduction indicators are also directly linked to the leading government official's individual performance, an essential criterion for their promotion and career advancement.[121] Such an arrangement not only encourages government officials to prioritise health, but also provides incentives to improve the implementation of health-related poverty alleviation measures and outcomes.

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In addition to the top-down approach, a bottom-up mechanism for accountability exists in China's Health and Poverty Alleviation Campaign, known as the letters and visits system (*xin fang*).[134] Disciplinary supervision committees at various levels of government have set up hotlines for reporting in towns and villages, establishing a comprehensive multidimensional reporting network that includes the internet, phone calls, letters, and in-person visits. This system allows citizens to directly report any suspected violations of discipline or law within the realm of poverty alleviation, facilitating the widespread collection of information relating to issues. The disciplinary supervision committees collaborate with auditing, finance, and poverty alleviation offices to conduct household visits in impoverished areas. This action has helped to rectify problems in poverty alleviation efforts, such as slow project implementation, potential corruption, and inappropriate work performance. This interconnected accountability mechanism not only strengthens the government's oversight capabilities in terms of health and poverty alleviation but also improves the participation of local people.[134]

These structured approaches to accountability within the health and poverty alleviation framework underscore a comprehensive strategy that extends beyond implementation and ensures effective oversight, continuous improvement, and adherence to rigorous standards.[131] The establishment of robust accountability mechanisms is also pivotal in aligning the efforts of various administrative levels and sectors towards the shared goal of eradicating poverty through improving health outcomes. Through these multilevel and multichannel mechanisms of accountability, the resulting governance system is largely adaptive, responsive, and effective, and is underpinned by a commitment to accountability, inclusivity, and data-driven decision making.[135]

Specific channels are also in place for local communities to inform provincial and national policy and share experiences. For example, successful locally adapted policies and activities are often presented nationally as best practices for poverty alleviation, which then inform national policy revision for implementation in counties with similar conditions (panel 3).[139]

2.2.4 Public communication strategies to improve health awareness among populations with low income

Individuals are action takers when it comes to their own health and are expected to exercise responsibility, such as by adopting healthy lifestyles, self-reporting health conditions, and seeking medical services when necessary (panel 4).[141] Health-promoting behaviours, such as physical activity, healthy eating, stress management, and maintaining healthy relationships, improve individual resilience and health. Individuals are also encouraged to adhere to medical advice and treatment plans and comply with preventive measures such as vaccinations and screenings.[123]

Whereas governments and organisations are responsible for implementing health and poverty alleviation policies and programmes, individuals also bear the responsibility for their own health and wellbeing and are encouraged to actively participate in poverty alleviation efforts. People living below the poverty line are not only the subjects of health and poverty alleviation interventions but contributors as well. The enhancement of health awareness among these groups aligns the government-led Health and Poverty Alleviation Initiative with the health needs of the people living below the poverty line. This alignment fosters involvement of individuals in policy making processes in communities, which steers these local actions towards greater precision and people-centred approaches.[142]

Part 3: Assessment of the Health and Poverty Alleviation Initiative

To assess the Health and Poverty Alleviation Initiative, the ideal approach would involve examining a comprehensive set of indicators across multiple stages: inputs, outputs, and outcomes. A holistic framework would allow for robust assessment of the programme's contributions to poverty reduction, health-care accessibility, and broader health outcomes; however, despite extensive data collection by China's central and local governments, the ideal approach is not feasible. As these data were collected for routine administrative purposes rather than specifically for evaluation or research, they are insufficient for conducting a robust longitudinal impact analysis. In fact, much of the data are only accessible for specific populations or are limited to particular years (eg, data covering only people living in poverty or data available solely for 2013 and 2018).

To ensure comparability and consistency, we therefore focus on a set of key indicators that best capture different aspects of the effectiveness of the initiative. Although not exhaustive, these indicators provide valuable insights into the initiative's effects on reducing poverty and improving health conditions. Specifically, we consider indicators on inputs, outputs, and outcomes. Inputs include resources allocated to health care and essential services such water, sanitation, and housing. Outputs focus on the programme's immediate results, such as treatment rates for curable severe diseases and improvements in essential services. Outcomes assess the broader effects, including reductions in out-of-pocket inpatient expenses and increased control of chronic diseases among the people experiencing poverty. This framework enables us to trace the connection between interventions and their effects.

3.1 Reduced number of people and counties below the poverty line

China's efforts in poverty alleviation are not new; however, before the Health and Poverty Alleviation Initiative, poverty reduction in China was primarily a result of robust

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Panel 3: The data monitoring and accountability system in Hebei Province

Hebei Province illustrates how data monitoring and accountability systems were institutionalised to strengthen health-related poverty alleviation. The provincial Health and Poverty Alleviation Task Force coordinated reporting across counties. Local taskforces collected data on medical expenditures, catastrophic illness, and service access, and submitted quarterly and annual reports. Health and poverty alleviation target responsibility statements were signed at each level, linking outcomes directly to evaluation of and career advancement for government officials.

At the county level, Julu County developed a 1+3+1 dynamic monitoring and support model after being lifted out of poverty in 2019:[136]

- One monitoring web: a digital platform, mobile app, and WeChat mini-program integrated data from 24 departments (health, education, insurance, etc). Village grid workers visited 291 villages every 2 weeks, and households could self-report via QR code. By 2022, 1740 households (5153 people) were under dynamic monitoring.
- Three layers of support: targeted policy aid (medical and education subsidies), livelihood promotion (employment training and industry projects), and safety nets (social relief funds, 1-yuan insurance [ie, a low-cost supplementary insurance scheme], and long-term care insurance).
- One follow-up evaluation: Huitoukan (a follow-up review mechanism to reassess poverty risks after initial risk elimination) reviews verified risk elimination and households with unresolved risks received monthly, quarterly, and annual follow-ups.

Results and effects

The Julu 1+3+1 model enabled early detection of households at risk of returning to poverty due to illness, natural disaster, or unstable employment. Households reported that wherever there is need, the policy arrives, and local data showed that poverty re-entry rates declined substantially after its adoption. In Huanghua City, improvements were made in data sharing across health, education, and housing departments to achieve alignment and coherence in policy making.[137,138]

Accountability was reinforced through bottom-up mechanisms. The Hebei Discipline Inspection and Supervision Commissions expanded channels for public complaints via letters, a hotline, the internet, and social media. In 2019, inspections of all nationally designated low-income counties within Hebei uncovered 76 problems and more than 900 leads indicating potential poverty-related problems, leading to targeted corrections and improved transparency.[138]

Analysis and dissemination

These experiences were shared at provincial and national levels as best practices. The Julu 1+3+1 model particularly informed the central government's refinement of dynamic monitoring systems, which are now implemented in multiple provinces with similar socioeconomic contexts.

Political economy significance

Hebei's case illustrates how vertical accountability (evaluation of government officials tied to performance) and horizontal accountability (eg, multidepartment data sharing and citizen complaint channels) worked together. Although challenges, such as ensuring data quality and sustainability, remain, the system has shown that intersectoral collaboration, when paired with robust accountability, can achieve measurable improvements in both governance and health outcomes.

economic growth. China's national poverty line has been periodically adjusted; under the standard used in the targeted poverty alleviation campaign, rural residents were considered impoverished if their annual per capita income was below ¥2300 (approximately $340 based on the 2010 average exchange rate) in 2010 prices. Between 2000 and 2014, the number of people living below the national poverty line dropped from 462·2 million in 2000 to 70·2 million in 2014, a reduction of 84·8% (figure 7). By 2015, 55·8 million individuals remained in poverty in China, or 5·7% of the country's total population.

The 2015 launch of the Health and Poverty Alleviation Initiative signalled a recalibration of China's poverty reduction strategy, bringing health initiatives into alignment with economic policies. This integrated approach led to a concurrent and rapid decline in both the number of officially designated impoverished counties and the overall number of people living below the poverty line. From 2015 to 2020, this population decreased at an annual rate of 10 million people, and by 2020, all 832 counties officially designated as impoverished in 2015 had exited impoverished county status (figure 8). The primary criterion for exit was that the proportion of the population living below the national poverty line had fallen below 2% (3% in western regions). This downward trend was consistent when measured against The World Bank's poverty standards (figure 9). Although China eliminated extreme poverty in 2020, an estimated 17·0% of the population still lived below the Wold Bank poverty line for upper-middle-income countries of $6·85 per person per day (2017 PPP) in 2021.

Importantly, the programme directly addressed health-related impoverishment. According to the NDMS, in 2017, more than 15·8 million people nationwide were living below the poverty line due to illness. This number declined to 10·5 million in 2018 and to 4·8 million in 2019. By 2020, all individuals in China had been lifted out of poverty, and consequently, the number of people considered impoverished due to illness was reduced to zero (table 2). The reduction was evident across provinces, although the

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pace varied. For example, in provinces with larger rural populations, such as Henan, Hunan, and Sichuan, the number of people living in health-related poverty declined by more than half from 2017 to 2019 (table 2). Other provinces, such as Fujian and Shandong, had nearly eliminated such poverty by 2019. These regional differences illustrate both the scale of the challenge and the effectiveness of targeted health interventions.

3.2 Assessment of health-specific indicators

To assess changes in health-specific outcomes, we examined indicators of financial protection, treatment coverage for curable severe diseases, and control of chronic diseases among people living below the poverty line.

3.2.1 Reduced out-of-pocket inpatient expenses as a proportion of total inpatient expenditure among the impoverished population

Using data from the National Health Service Surveys, figure 10 compares the changes in the proportion of out-of-pocket inpatient expenditure per capita relative to total inpatient expenditure between 2013 and 2018 for both people living below and people living above the poverty line. The data show a significant decline in the proportion for people living below the poverty line, which dropped from 41·0% (95% CI 37·3–44·7) in 2013 to 31·0% (29·0–33·0) in 2018 (p<0·0001).[144] By contrast, no significant change was observed for people living above the poverty line, with the proportion remaining stable at 49·8% (48·2–51·4) in 2013 and 48·3% (47·5–49·1) in 2018 (p=0·18).

This pattern is consistent with previous research showing that the Health and Poverty Alleviation Initiative was strongly targeted towards reducing the medical burden among people with low income, leading to a marked decline in their out-of-pocket share.[110,144,145] Meanwhile, the persistently high proportion of out-of-pocket expenditure among people with middle or high income has also been reported in earlier studies.[14] Several explanations have been put forward: compared with people with low income, those with more income are more likely to seek care in tertiary or high-level hospitals where costs are substantially higher, choose branded or non-reimbursable medicines that are not fully covered by health insurance, and make greater use of discretionary diagnostic and therapeutic services.[146–148] These patterns result in a higher and somewhat stable out-of-pocket share among people living above the poverty line, even as financial protection improved substantially for people with low income.

3.2.2 An initial large drop followed by a slight increase in the proportion of out-of-pocket medical expenses among people living below the poverty line

A direct comparison between populations living above versus below the poverty line is not possible because the NDMS does not include individuals living above the poverty line. Nevertheless, with the large-scale data provided by the NDMS, figure 11 illustrates out-of-pocket expenses as a proportion of total health expenditure for the people living below the poverty line from 2016 to 2024. The proportion declined sharply from 42·4% in 2016 to 15·9% in 2017, and then to 9·0% in 2018. Following this decline, the percentage varied only slightly between 2019 and 2021. In 2022, the proportion increased to 23·0%; however, this upward trend appears to be reversing, as indicated by the slight decrease in 2023 to 20·2% and another drop in 2024 to 17·1%.

Although the proportional decline in out-of-pocket inpatient expenses among people with low income is encouraging, absolute medical expenses have remained high,[149,150] which suggests that reduced out-of-pocket shares did not necessarily translate into less financial distress. In addition, outpatient spending has been highly volatile, partly due to structural changes in

***Panel 4:* Initiatives to empower individual awareness of health responsibility**

Different levels of government, medical institutions, and other relevant departments in China use various methods to raise public health awareness and disseminate health information, particularly in impoverished areas, aiming to strengthen individuals' awareness of and responsibility for their own health. For example, since 2005, China has been promoting the Millions of Rural Residents Health Promotion campaign nationwide, focusing on the health issues of rural residents living below the poverty line. This initiative aims to strengthen basic health literacy through health education. Local governments also provide personalised health education and training for individuals living below the poverty line with chronic diseases, such as diabetes and coronary heart disease, through family physician and community doctors. Furthermore, comprehensive health education is provided to students in primary and secondary schools in all impoverished areas, enhancing the health knowledge of young people through activities and specialised courses. This action has led these individuals to recognise their responsibility for their own health, and thus actively participate in activities to improve their health status.[140] As a result, health behaviours among people living below the poverty line have been improved.

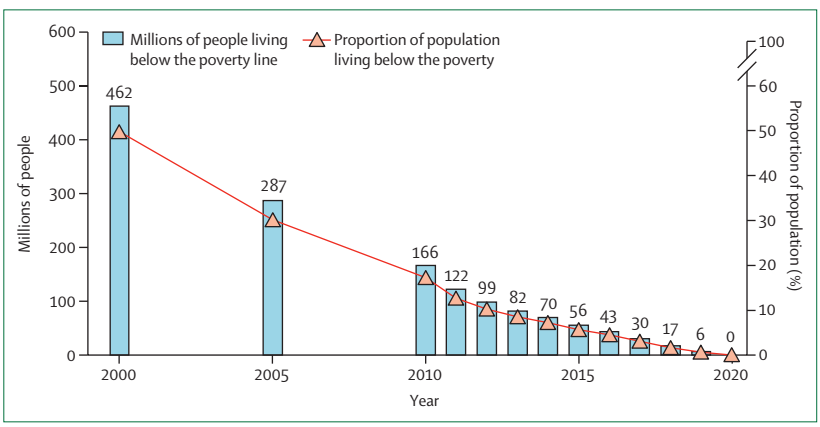

Figure 7: **Number of impoverished people in China and poverty rate at the national poverty line**
Data are from the white paper Poverty Alleviation: China's Experience and Contribution.[7] The national poverty line was defined as ¥2300 per person per year at 2010 prices and modified each year on the basis of the inflation rate.

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health service utilisation during the COVID-19 pandemic, when full reimbursement of COVID-19-related hospitalisations temporarily lowered inpatient out-of-pocket ratios[151] but non-COVID-19-related services, such as chronic disease management, were delayed or disrupted.[152] These factors jointly contributed to year-to-year variability in financial burden indicators. Evidence from previous studies shows that, despite broad insurance coverage, catastrophic health expenditure has persisted in vulnerable groups, underscoring the importance of sustained fiscal mechanisms to protect households from medical impoverishment.[153,154]

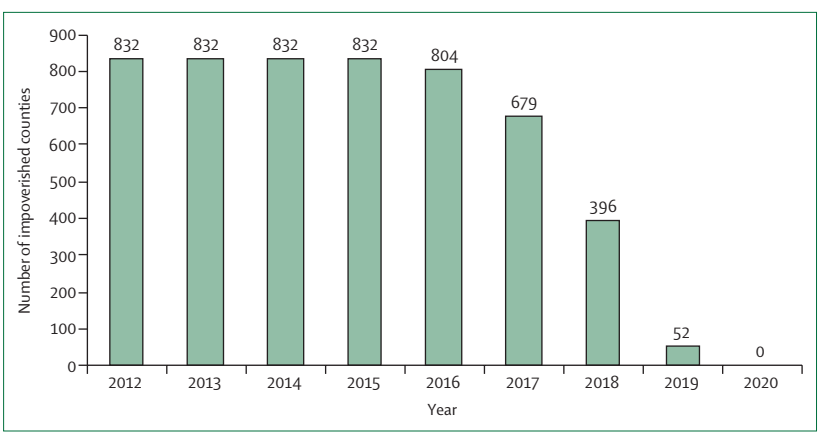

Figure 8: **Number of impoverished counties in China, 2012–20**
Data are from the white paper Poverty Alleviation: China's Experience and Contribution.[7] Impoverished counties are defined as counties officially designated by the Chinese Government as priority areas for national poverty-alleviation programmes according to nationally defined poverty and socioeconomic criteria. The national poverty line was defined as ¥2300 per person per year at 2010 prices and modified each year on the basis of the inflation rate.

3.2.3 High treatment rates for curable severe diseases among people living below the poverty line

The State Council Leading Group Office of Poverty Alleviation and Development and five other departments jointly formulated the Three-Batch Action Plan for the Health Poverty Alleviation Project, which grouped people living below the poverty line according to their disease and health-care needs and provided tailored interventions for each group. The three groups comprised people with severe diseases requiring concentrated treatment, people with chronic diseases requiring contracted health management services, and people with serious illnesses requiring additional financial protection. This plan included one batch for curable severe diseases, one batch for chronic diseases, and one batch for long-term treatment-dependent critical diseases (referred to as critical diseases). Since the launch of the Three-Batch Action Plan in 2017, the treatment rates for curable severe diseases among people living below the poverty line have increased, even though records on treatment rates have only been available since 2017. In 2017, according to the NDMS, 1·5 million cases of 24 different diseases were diagnosed, with 82·5% of affected individuals receiving treatment. As the criteria for curable severe diseases expanded, the number of diagnosed people surged, and by 2020, 2·8 million patients were diagnosed with one or more of 30 diseases. Notably, from 2017 to 2020, the treatment rate skyrocketed to 99·6%. This near-universal treatment rate was

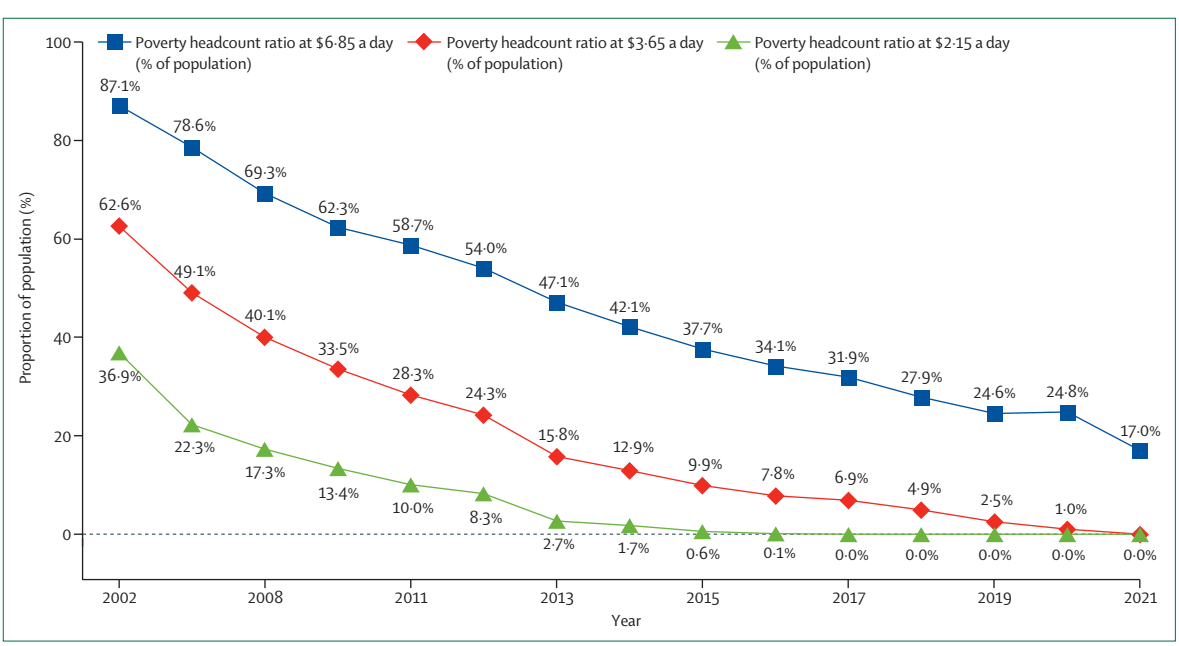

Figure 9: **Poverty rates by various poverty lines in China**
Data are from The World Bank.[143] Poverty headcount ratio refers to the proportion of the population living below the given poverty line and use 2017 purchasing power parity.

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	2017, thousands of people	2018, thousands of people	2019, thousands of people
Overall	15 827·7	10 520·6	4792·0
Anhui	1107·8	611·5	241·5
Chongqing	152·5	146·7	83·6
Fujian	51·4	9·1	0·05
Gansu	666·6	543·0	316·5
Guangxi	716·2	628·6	347·5
Guizhou	708·3	573·7	311·4
Hainan	56·9	37·6	16·2
Hebei	936·0	558·6	226·6
Heilongjiang	293·0	201·9	83·7
Henan	1825·9	1308·9	587·0
Hubei	1644·5	1143·6	539·0
Hunan	1655·3	1109·2	464·2
Inner Mongolia	269·9	236·5	102·5
Jiangxi	688·1	444·6	228·7
Jilin	251·9	139·7	58·9
Liaoning	341·7	165·9	111·6
Ningxia	79·1	57·7	30·4
Qinghai	87·8	48·3	12·1
Shaanxi	784·6	576·1	207·4
Shandong	244·9	48·3	0·002
Shanxi	554·4	312·6	106·2
Sichuan	1318·3	652·0	231·0
Yunnan	1115·6	705·1	343·0
Xinjiang	235·7	237·1	136·3
Xizang	41·5	24·3	6·6

By 2020, all individuals in China had been lifted out of poverty, and consequently, the number of people impoverished due to illness was reduced to zero. Data are from the NDMS.

Table 2: **Number of people impoverished due to illness by province**

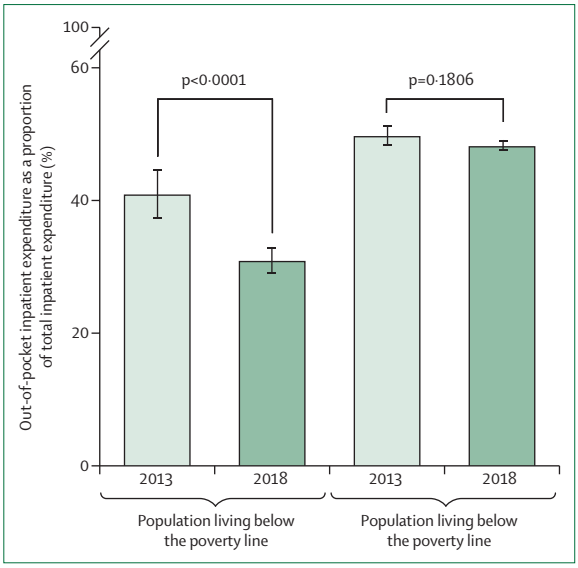

Figure 10: **Out-of-pocket inpatient expenditure**
Data are from the National Health Service Surveys 2013 and 2018.[144] The national poverty line was defined as ¥2300 per person per year at 2010 prices and modified each year on the basis of the inflation rate.

sustained through 2023, with the treatment rate improving to 99·8% (figure 12).

According to the NDMS, treatment rates of people living below the poverty line across diseases and provinces, which initially varied substantially in 2017, improved dramatically to nearly universal treatment by 2020 and remained consistent through to 2023. In 2017, treatment rates for various curable severe diseases ranged from a low of 65·6% for congenital cleft lip and palate to 93·5% for end-stage renal disease. Notably, eight diseases had treatment rates of less than 80%; cleft lip and palate (65·6%), hypospadias (74·9%), and pneumoconiosis (75·9%) were the three lowest rates. Disparities across provinces were also substantial in 2017, with only five provinces reaching treatment rates of more than 95%: Shanxi (99·5%), Anhui (97·7%), Chongqing (98·0%), Shaanxi (98·7%), and Ningxia (95·6%); however, by 2020, these disparities were eliminated, as treatment rates for almost all diseases and provinces surged to more than 98%, a remarkable rate maintained through 2023 (figure 12).

Although these data suggest remarkable improvements in treatment coverage, alternative factors could have contributed to the rapid increase. For example, the strict reporting and monitoring system under the Three-Batch Action Plan could have incentivised health-care providers to ensure treatments were documented, which could have inflated reported coverage. Changes in detection intensity, reporting completeness, and surveillance practices—known as surveillance bias—could also have affected observed trends. These considerations suggest that nearly universal treatment rates should be interpreted cautiously and understood in the broader context of data reporting and system incentives, rather than as direct evidence of programme effects. Furthermore, because comparable data for non-low-income households are unavailable, we cannot rule out the possibility that broader improvements in diagnosis and treatment contributed to these trends.

3.2.4 Increased control rates of chronic diseases among people living below the poverty line

Here, we focus on hypertension and diabetes because these non-communicable diseases are nationally prioritised and systematically monitored by the NDMS. The system provides continuous nationwide tracking and standardised management for these conditions among all households below the poverty line, which enables us to assess trends in treatment and control over time.

Using NDMS data, we presented the control rates of hypertension and diabetes among people living below the poverty line who are diagnosed with these diseases in tables 3–5 and the appendix (pp 13–14). Although data

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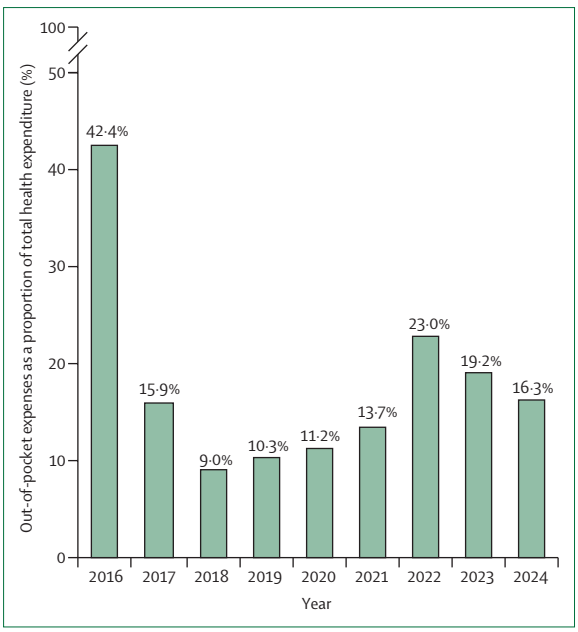

Figure 11: **Out-of-pocket expenses as a proportion of total health expenditure among people living below the poverty line**
Data are from the National Dynamic Monitoring System for Preventing Return to Poverty Due to Illness. The national poverty line was defined as ¥2300 per person per year at 2010 prices and modified each year on the basis of the inflation rate.

recorded before 2018 were unavailable, we observed a large increase in the control rate of hypertension after this date, rising from 33·0% in 2019 to 45·4% in 2022: a percentage change of 37·6%. Provinces such as Guangxi, Hebei, Hunan, Shaanxi, and Xinjiang had notable progress, with Hebei reaching a control rate of 66·7% and Guangxi reaching a control rate 62·8% by 2022. Conversely, provinces including Liaoning, Yunnan, and Guizhou maintained hypertension control rates of less than 30%. Several other provinces, including Anhui, Gansu, Hubei, Jilin, Ningxia, and Sichuan, had modest or fluctuating improvements, ultimately remaining near or slightly below the overall rates (table 4).

Similarly, per NDMS data, the control rate of diabetes continuously increased, from 46·5% in 2019 to 55·2% in 2020: a percentage change of 18·7%. Hebei had the highest control rate, increasing from 52·5% in 2019 to 75·7% in 2022, and Guangxi maintained a leading position in most years, reaching 72·9% in 2022. Provinces such as Hunan, Shaanxi, Fujian, Chongqing, and Xinjiang had substantial improvements, with higher-than-average control rates in 2022, the last year data were available. Several provinces, including Henan, Hubei, Jilin, and Ningxia, had irregular trajectories characterised by sharp peaks or declines (table 5).

This increase was consistently observed across sex and age (table 3; appendix p 13). The data showed a larger increase in the control rate of hypertension among people living in the eastern regions of China between 2019 and 2022, with a percentage change of 73·7%, followed by the western regions at 42·1%, and then the middle regions with a comparatively lower increase of 26·6%.

These data reflect the systematic tracking of treatment and control among households below the poverty line. We note, however, that diagnosis rates would provide additional insight into population health, and future analyses should incorporate such data if they become available.

3.3 Assessment of health-related indicators

This section assesses changes in key health-related living conditions associated with the Health and Poverty Alleviation Initiative, focusing on access to safe water, improved sanitation, and housing.

3.3.1 Safe water

We evaluated the effectiveness of the Health and Poverty Alleviation Initiative on access to clean water using data from the China Family Panel Studies. Our results indicated that since the launch of the programme, access to safe drinking water has continuously improved, particularly among people living below the poverty line. In 2014, 89·4% of people living below the poverty line and 94·2% of people living above the poverty line had access to clean water, an absolute difference of 4·8 percentage points. Between 2014 and 2020, the percentage of people living below the poverty line with access to clean water rapidly increased to 94·5%, with an annual growth of 0·85 percentage points. Meanwhile, the annual change for people living above the poverty line was 0·32 percentage points. As a result, the absolute difference between the two groups narrowed to 1·6 percentage points in 2020 (table 6).

In the appendix (pp 15–17), we present the causal effect of Health and Poverty Alleviation Initiative on access to tap water through difference-in-difference (DID) analyses, with data from China Health and Retirement Longitudinal Study (CHARLS).[156] Our DID indicated that people living below the poverty line had a faster improvement rate than those living above it by 9·9 percentage points (95% CI 6·6 to 13·1). This result suggested that the initiative to enhance access to tapped water has significantly reduced the gap between people living below versus above the poverty line. Findings from the China Family Panel Studies were consistent with this result (appendix p 18).

China is among the countries with the highest prevalence of fluorosis and the most severe detrimental impacts of fluorosis in the world.[157] Drinking-water fluorosis is an important form of endemic fluorosis. Compared with non-impoverished areas, fluoride pollution tends to be more severe in impoverished areas, which often rely on groundwater sources that have higher concentrations of fluoride, resulting in a higher prevalence of fluorosis, including skeletal fluorosis and

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dental fluorosis.[158–160] Across all localities, solutions have been implemented to address the issue of excessive fluoride in drinking water for 9·75 million rural residents and in brackish water for 1·20 million rural residents.[161] Consequently, the number of patients with dental fluorosis decreased from 18·16 million in 2015 to 0·30 million by 2021, representing a substantial 98·4% reduction. Similarly, the number of patients with skeletal fluorosis declined from 1·27 million to 0·07 million over the same period, a 94·8% decrease.[162,163]

3.3.2 *Improved sanitation*

The substantial increase in access to flushable toilets over the past decade serves as a robust indicator of progress in hygiene and sanitation. According to CHARLS,[156] access to flushable toilets among people living below the poverty line more than doubled between 2015—when China's Health and Poverty Alleviation Initiative was launched—and 2020, reaching 66·4% coverage, with an annual increase of 6·7 percentage points. By contrast, before the launch of the initiative, the increase was considerably slower, rising from 24·5% in 2011 to only 32·7% in 2015, which corresponds to an annual increase of 2·1 percentage points. Meanwhile, the change in flushable toilet access among people living above the poverty line has been more moderate; it initially decreased slightly from 48·6% in 2011 to 47·9% in 2015 before increasing to 71·5% in 2020. The annual increase between 2015 and 2020 for this group was 4·7 percentage points, indicating a less steep progression compared with people living below the poverty line. As a result, the absolute difference in access to flushable toilets between the two groups significantly narrowed, from 15·2 percentage points in 2015 to 5·1 in 2020 (figure 13).

Through the DID analyses, we investigated the change of sanitation over time as well as improvement induced by programme implementation (appendix pp 19–20). The regression results in our DID analysis showed that since the launch of the Health and Poverty Alleviation Initiative, improvement in access to flushable toilets among people living below the poverty line was 10·2 percentage points (95% CI 7·0–13·4) higher than that of people living above the poverty line. This finding underscored the effectiveness of the government's initiatives in enhancing sanitation conditions for people living below the poverty line. As sanitation conditions improved, we observed a significant reduction in parasitic infections. Specifically, the infection rates of typhoid and paratyphoid fever, dysentery, and hepatitis A decreased by 51·0%, 63·6%, and 44·8%, respectively, between 2014 and 2020 (appendix pp 21–23).

3.3.3 *Housing*

Improving safe housing has been one of the central objectives of efforts to fulfill the Two Assurances and Three Guarantees implemented by central and local governments.[15] Through the concerted efforts of the Chinese government, the cumulative number of rural households benefiting from the renovation of dilapidated houses reached 17·94 million by 2019, marking a

	2017	2020	2023
Total	**82·5%**	**99·6%**	**99·8%**
Acute myocardial infarction	83·3%	99·7%	99·8%
Bladder cancer	78·9%	99·7%	99·7%
Breast cancer	81·3%	99·7%	99·6%
Cataract	80·1%	99·8%	99·8%
Cervical cancer	81·0%	99·6%	99·6%
Chronic obstructive pulmonary disease	81·3%	99·8%	99·8%
Cleft lip and palate	65·6%	99·2%	99·1%
Colorectal cancer	85·2%	99·7%	99·6%
Congenital heart disease in children	79·2%	99·5%	99·6%
End-stage renal disease	93·5%	99·9%	99·8%
Oesophageal cancer	87·2%	99·7%	99·7%
Gastric cancer	87·1%	99·7%	99·6%
Haemophilia	84·8%	99·5%	99·8%
Hypospadias	74·9%	99·5%	99·6%
Kidney cancer	79·1%	99·6%	99·5%
Leukaemia in children	89·0%	99·7%	99·6%
Liver cancer	84·1%	99·6%	99·5%
Lung cancer	85·6%	99·7%	99·6%
Ovarian cancer	81·1%	99·6%	99·6%
Pneumoconiosis	75·9%	94·6%	98·5%
Rheumatic heart disease	76·2%	99·6%	99·6%
Severe epilepsy	76·7%	99·3%	99·7%
Severe mental disorders	83·4%	99·7%	99·9%
Thalassaemia	87·6%	99·4%	99·7%
Other diseases	NA	99·7%	99·7%

	2017	2020	2023
Total	**82·5%**	**99·6%**	**99·8%**
Anhui	97·7%	99·8%	99·9%
Chongqing	98·0%	100·0%	99·9%
Fujian	54·2%	98·2%	98·6%
Gansu	77·6%	100·0%	100·0%
Guangxi	93·6%	99·1%	99·9%
Guizhou	77·8%	100·0%	99·8%
Hainan	63·3%	100·0%	100·0%
Hebei	94·4%	99·9%	99·9%
Heilongjiang	72·1%	99·7%	99·5%
Henan	86·5%	99·2%	100·0%
Hubei	65·1%	99·7%	100·0%
Hunan	91·2%	99·4%	99·3%
Inner Mongolia	94·7%	100·0%	99·8%
Jiangxi	93·6%	99·7%	99·6%
Jilin	76·3%	100·0%	99·9%
Liaoning	47·2%	100·0%	99·9%
Ningxia	95·6%	99·8%	99·6%
Qinghai	80·3%	100·0%	100·0%
Shaanxi	98·7%	100·0%	100·0%
Shandong	65·8%	99·0%	98·4%
Shanxi	99·5%	99·9%	100·0%
Sichuan	30·1%	99·5%	99·9%
Tibet	49·1%	99·4%	98·9%
Xinjiang	62·1%	100·0%	99·9%
Yunnan	93·0%	99·7%	99·9%

Figure 12: **Proportion of people living below the poverty line with curable severe diseases who received treatment, by disease and by province, in 2017, 2020, and 2023**

Data are from the National Dynamic Monitoring System for Preventing Return to Poverty Due to Illness. The proportion of people receiving any type of treatment in hospitals or from family doctors was calculated as the number of diagnosed people divided by the number of cases treated in hospitals or by family doctors. Other diseases included are stroke, HIV/AIDS opportunistic infections, neuroblastoma, osteosarcoma, multidrug-resistant tuberculosis, and childhood lymphoma. The national poverty line was defined as ¥2300 per person per year at 2010 prices. NA=not available.

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	Hypertension						Diabetes					
	2019	2020	2021	2022	Percentage point increase between 2022 and 2019	Percentage increase between 2019 and 2022	2019	2020	2021	2022	Percentage point increase between 2022 and 2019	Percentage increase between 2019 and 2022
Overall	33·0%	37·1%	41·7%	45·4%	12·4	37·6%	46·5%	50·0%	51·8%	55·2%	8·7	18·7%
Age, years												
<60	35·9%	40·4%	45·4%	50·0%	14·1	39·3%	44·4%	47·6%	49·2%	53·4%	9·0	20·3%
≥60	32·2%	36·1%	40·4%	43·8%	11·6	36·0%	47·5%	51·1%	53·0%	56·1%	8·6	18·1%
Region												
East	33·4%	42·8%	51·7%	58·0%	24·6	73·7%	44·4%	52·9%	60·9%	67·0%	22·6	50·9%
Middle	36·4%	40·1%	41·9%	46·1%	9·7	26·6%	50·9%	54·2%	55·9%	57·3%	6·4	12·6%
West	30·2%	33·9%	40·1%	42·9%	12·7	42·1%	42·7%	45·4%	47·2%	51·0%	8·3	19·4%
Sex												
Female	33·5%	37·6%	42·2%	45·9%	12·4	37·0%	45·9%	49·4%	51·4%	54·8%	8·9	19·4%
Male	32·4%	36·6%	41·1%	44·8%	12·4	38·3%	47·5%	50·9%	52·3%	55·8%	8·3	17·5%
Education level												
No school	31·5%	34·2%	38·3%	41·1%	9·6	30·5%	49·0%	51·0%	52·3%	54·6%	5·6	11·4%
Primary	32·2%	36·3%	40·8%	44·4%	12·2	37·9%	45·3%	49·0%	50·3%	54·1%	8·8	19·4%
Secondary	36·7%	41·9%	47·1%	51·5%	14·8	40·3%	46·9%	51·1%	54·0%	57·5%	10·6	22·6%
Higher	38·6%	43·7%	49·5%	53·3%	14·7	38·1%	49·0%	53·0%	56·8%	59·1%	10·1	20·6%

Data are from the National Dynamic Monitoring System for Preventing Return to Poverty Due to Illness. Controlled hypertension is defined as a diagnosed individual's blood pressure measurements consistently falling below 140 mm Hg for systolic blood pressure and 90 mm Hg for diastolic blood pressure throughout a given year. Controlled diabetes is defined as a diagnosed individual's blood glucose measurement throughout a given year consistently falling below 7·0 mmol/L. The control rate of hypertension or diabetes is calculated as the number of individuals with controlled hypertension or diabetes divided by the number of diagnosed people who had at least one recorded blood pressure or glucose measurement. The percentage change between 2019 and 2022 is calculated as the difference in percentage points between 2022 and 2019, divided by the control rate of hypertension or diabetes in 2019. The national poverty line was defined as ¥2300 per person per year at 2010 prices and modified each year on the basis of the inflation rate.

Table 3: **Control rates of hypertension and diabetes between 2019 and 2022 among people living below the poverty line**

substantial expansion compared with the 2·66 million houses renovated in 2013. Among these houses, 7·33 million rural dilapidated houses were renovated the households below the poverty line. According to official statistics from the National Bureau of Statistics, the renovation of dilapidated houses for these households was largely completed by 2020.[164] A total of ¥189·1 billion (approximately $45·2 billion in 2017 PPP) was invested by the government in housing renovation up until 2019 (figures 14, 15).

The DID approach was used to identify the causal effect of the Health and Poverty Alleviation Initiative on housing condition improvement through data from CHARLS. The results in DID model 3 showed that the improvement was more prominent among individuals living below versus above the poverty line by 8·2 percentage points (95% CI 5·1–11·3), underscoring the impact of associated public investments (appendix pp 24–25).

Part 4: Challenges and strategic responses

The Health and Poverty Alleviation Initiative concluded in 2020 and reported initial success; however, poverty alleviation is a journey. This process is not finished. The gains of poverty alleviation must be sustained and people should be prevented from falling back into poverty. Here, we identify the current and emerging challenges in doing so and discuss future directions.

4.1 Current Challenges

Despite the substantial achievements of China's Health and Poverty Alleviation Initiative in reducing poverty and improving access to health services, several challenges remain regarding its long-term sustainability, equity, evaluation, and broader impacts. As China transitions from poverty eradication to preventing the recurrence of poverty and addressing evolving health needs, maintaining financial and institutional support, reducing persistent inequalities, generating robust evidence of effectiveness, and ensuring that interventions achieve sustainable improvements in wellbeing remain crucial priorities. This section discusses the challenges that require continued attention.

4.1.1 Sustainability

The Health and Poverty Alleviation Initiative in China heavily relied on continuous fiscal input, with few other funding channels to diversify its financial base. As described earlier, during the period 2015–20, China's central government committed a huge investment of ¥1·4 trillion (~$215·6 billion) to the Health and Poverty

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	2019	2020	2021	2022
Overall	33·0%	37·1%	41·7%	45·4%
Anhui	45·5%	44·7%	46·6%	45·5%
Chongqing	30·3%	31·2%	33·5%	38·7%
Fujian	40·5%	44·1%	49·7%	52·1%
Gansu	32·8%	34·8%	33·5%	35·1%
Guangxi	53·6%	54·0%	58·2%	62·8%
Guizhou	24·6%	24·7%	28·2%	28·6%
Hainan	19·8%	26·2%	35·3%	40·3%
Hebei	40·4%	52·9%	60·6%	66·7%
Heilongjiang	30·6%	36·6%	44·2%	44·4%
Henan	0·7%	1·0%	26·4%	36·7%
Hubei	28·4%	33·7%	37·7%	33·4%
Hunan	47·5%	55·6%	57·2%	60·6%
Inner Mongolia	27·9%	31·3%	36·5%	38·2%
Jiangxi	32·2%	34·5%	38·8%	44·6%
Jilin	33·1%	40·6%	45·8%	40·7%
Liaoning	13·7%	15·7%	19·3%	23·6%
Ningxia	40·3%	40·9%	44·1%	37·5%
Qinghai	20·8%	21·2%	29·5%	32·7%
Shaanxi	32·4%	42·7%	59·8%	63·3%
Shandong	28·7%	24·5%	41·2%	35·3%
Shanxi	42·8%	48·1%	54·8%	56·9%
Sichuan	37·1%	39·8%	45·6%	45·9%
Yunnan	21·2%	25·0%	25·6%	26·3%
Xinjiang	19·4%	28·2%	53·1%	57·5%
Xizang	3·7%	3·2%	5·4%	5·2%

Data are from the National Dynamic Monitoring System for Preventing Return to Poverty due to Illness. Controlled hypertension was defined by having blood pressure readings at all follow-up visits within a calendar year that were consistently below the control threshold (ie, systolic blood pressure <140 mm Hg and diastolic blood pressure <90 mm Hg). The controlled hypertension rate was calculated as the number of patients with controlled hypertension divided by the number of patients with hypertension who had at least one recorded blood pressure measurement. The proportion of people with controlled hypertension was calculated for each study year among the respective patient populations. The national poverty line was defined as ¥2300 per person per year at 2010 prices and modified each year on the basis of the inflation rate.

Table 4: **Proportion of hypertension cases controlled between 2019 and 2022 among people living below the poverty line by province**

	2019	2020	2021	2022
Overall	46·5%	50·0%	51·8%	55·2%
Anhui	58·1%	56·7%	59·4%	57·8%
Chongqing	45·5%	47·9%	49·5%	56·7%
Fujian	48·0%	51·0%	56·7%	59·2%
Gansu	46·2%	48·4%	47·1%	52·1%
Guangxi	71·9%	71·0%	68·9%	72·9%
Guizhou	36·9%	34·0%	34·4%	34·6%
Hainan	37·6%	43·2%	51·8%	54·5%
Hebei	52·5%	62·4%	70·2%	75·7%
Heilongjiang	42·9%	61·2%	63·3%	61·6%
Henan	44·2%	85·9%	60·7%	54·6%
Hubei	41·7%	45·6%	50·8%	47·2%
Hunan	55·8%	62·6%	64·0%	67·3%
Inner Mongolia	33·3%	36·3%	43·2%	46·2%
Jiangxi	42·6%	43·2%	48·1%	53·1%
Jilin	48·3%	55·3%	62·2%	56·7%
Liaoning	25·2%	26·4%	29·5%	35·1%
Ningxia	49·2%	51·1%	50·7%	51·4%
Qinghai	24·9%	26·7%	35·1%	42·1%
Shaanxi	43·2%	55·4%	66·7%	69·9%
Shandong	37·0%	42·6%	56·0%	55·5%
Shanxi	45·0%	47·5%	54·5%	56·1%
Sichuan	48·9%	51·7%	56·1%	54·9%
Yunnan	28·1%	29·4%	25·6%	24·7%
Xinjiang	24·5%	29·0%	52·7%	57·6%
Xizang	19·7%	11·2%	29·8%	20·6%

Data are from the China Population and Development Research Center.[86] Controlled diabetes was defined by having fasting blood glucose values at all follow-up visits within a calendar year that were consistently below the control threshold (ie, <7·0 mmol/L). The controlled diabetes rate was calculated as the number of patients with controlled diabetes divided by the number of patients with diabetes who had at least one recorded blood glucose measurement. The proportion of people with controlled diabetes was calculated for each study year among the respective patient populations. The national poverty line was defined as ¥2300 per person per year at 2010 prices and modified each year on the basis of the inflation rate.

Table 5: **Proportion of people with diabetes who had controlled disease between 2019 and 2022 among people living below the poverty line by province**

Alleviation Initiative, reflecting a sustained annual funding growth of 11·6%. As China's economic growth slows, government fiscal resources—central to the success of the programme—could become constrained. Reduced public spending could limit the effects of the initiative, particularly in the most vulnerable regions. Additionally, the medical insurance fund might be insufficient to sustain the medical expenses of people living below the poverty line in the long term. This financial pressure raises concerns about long-term sustainability, particularly as per capita health expenditure continues to rise, potentially driving the catastrophic health expenditure among people living in poverty. Similarly, financial feasibility is a concern in other countries. In fact, the government dominance of the initiative has both strengths and limitations. Although a strong government can mobilise sufficient resources, the sustainability and scaling-up of challenges can deter governments that are not strong. In previous sections, we briefly introduced the non-state actors; however, their participation is small in scale, and a diversified investment mechanism has not yet been established.

In addition to substantial financial input, the Health and Poverty Alleviation Initiative was supported by a large and dedicated health workforce. With the eradication of extreme poverty in China, concerns have arisen regarding the sustainability of this workforce and its continued engagement in vulnerable regions. Thus, an institutionalised system is needed to continuously monitor and prevent populations from returning to

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	2014	2016	2018	2020	Annual percentage point change
People living below the poverty line	89·4%	89·5%	92·3%	94·5%	0·85
People living above the poverty line	94·2%	95·2%	94·2%	96·1%	0·32
Absolute difference between people living below and above the poverty line, percentage points	4·8	5·7	2·1	1·6	−0·53

Data are from the China Family Panel Studies.[155] Access to clean water was identified by the survey question asking what the primary water source for cooking is at the respondent's residence. The respondent was considered to have access to clean water if the reported water source was well water, tap water, or purified, filtered, or bottled water. The respondent was not considered to have access to clean water if the reported water source was river, lake, pond, spring, or rain water. The national poverty line was defined as ¥2300 per person per year at 2010 prices and modified each year on the basis of the inflation rate.

Table 6: **Percentage of individuals with access to clean water by poverty status**

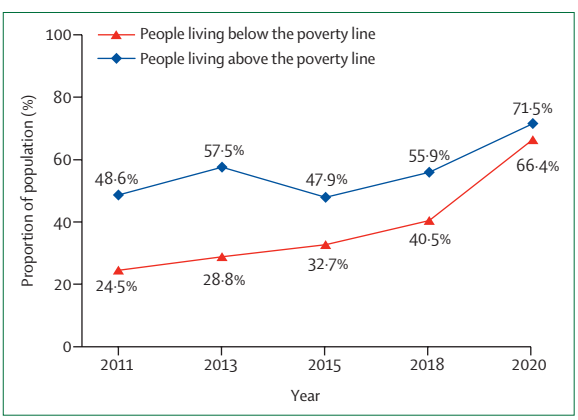

Figure 13: **Percentage of population with access to a flushable toilet**
Data are from the China Health and Retirement Survey, 2011–20.[156] Access to a flushable toilet was identified by the survey question relating to whether the respondent had a flushable toilet in their residence. The national poverty line was defined as ¥2300 per person per year at 2010 prices and modified each year on the basis of the inflation rate.

poverty. The period from 2020 to 2025 was a transitional phase with the aim of consolidating the outcomes of poverty reduction; however, beyond 2025, sustaining long-term monitoring mechanisms and supportive policies for vulnerable populations remains an ongoing challenge.

4.1.2 Improved but persistent inequalities

Although health inequalities in China have improved over time, substantial disparities persist, particularly between urban and rural areas. Direct data on child mortality disparities between people living above versus below the poverty line were scarce; however, given that poverty is heavily concentrated in rural China, whereas urban residents predominantly live above the poverty line, the urban–rural divide offered a clear reflection of these inequalities. From 2000 to 2014, China saw a marked reduction in neonatal mortality, which fell from 22·8 to 5·9 deaths per thousand livebirths. Urban areas saw a 63·2% decline in the neonatal mortality rate, from 9·5 to 3·5 deaths per thousand livebirths, and rural areas had an even greater reduction of 73·3%, from 25·8 to 6·9 deaths per thousand livebirths. Despite these impressive declines, a notable urban–rural gap remained in 2014, with the disparity standing at 3·4 deaths per thousand livebirths (figure 16).

From 2015, when the initiative was launched, improvement occurred but inequality remained. From 2015 to 2020, the neonatal mortality rate in rural areas decreased by 39·1%, from 6·4 to 3·9 deaths per thousand livebirths. In urban areas, the rate declined by 36·4%, from 3·3 to 2·1 deaths per thousand livebirths. Despite these reductions, the absolute gap between urban and rural areas remained at 1·8 deaths per thousand livebirths in 2020, illustrating the persistent nature of these health inequalities. This ongoing divide is also reflected in trends in infant mortality, mortality in children younger than 5 years, and maternal mortality (figure 16).

In addition to the urban–rural divide, regional disparities in child survival have narrowed substantially over the past two decades, although they have not been fully eliminated. Between 2000 and 2020, mortality in children younger than 5 years declined sharply across all regions, from 18·3 to 4·1 deaths per thousand livebirths in the eastern region, from 31·7 to 6·6 deaths per thousand livebirths in the central region, and from 60·8 to 10·6 deaths per thousand livebirths in the western region.[167–169] Consequently, the absolute gap in mortality in children younger than 5 years between the western and eastern regions fell markedly, from 42·5 deaths per thousand livebirths in 2000 to 6·5 in 2020.[167–169] Although this convergence reflects substantial progress in reducing regional health inequalities, mortality in children younger than 5 years in the western region remained more than twice that of the eastern region by 2020, highlighting that regional inequities persist despite substantial improvement (appendix p 26).[167–169]

4.1.3 Barriers to evaluating the initiative's effectiveness and efficiency

Although eradicating poverty by the end of 2020 was a great achievement, this single indicator was insufficient to show the effectiveness and broader impact of the initiative, as the world demanded more concrete evidence. Despite the Commission having made best efforts to pursue data and evidence, we faced four challenges when assessing the Health and Poverty Alleviation Initiative rigorously.

First, the real-world data are not designed for evaluation or research. As mentioned previously, the NDMS was mainly used to conduct the targeted campaign. Individuals who met the poverty criteria were included in the system, and those lifted out of poverty were no longer monitored unless they returned to poverty. This process was dynamic and the information system was only designed for everyday management. Use of the data in this system to conduct a robust longitudinal impact

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analysis was challenging. To address this limitation, we complemented NDMS data with data from additional nationally representative sources, including the CHARLS and China Family Panel Studies, and the National Health Services Survey (NHSS),[155,156] which provide longitudinal or repeated cross-sectional perspectives beyond the monitoring system.

Second, some data are fragmented, missing, or not comparable. China's vast geographical size and regional diversity mean that data collection methods and quality vary across regions, leading to gaps in coverage and inconsistencies in reporting. In some regions, local health data are either not compiled or are insufficiently detailed, making forming a comprehensive national picture difficult. In addition, despite the large amount of implementation process data obtained (eg, the number of health workers trained or the number of health facilities constructed), the data to measure quality of care are largely missing. Furthermore, in many cases, the available data pertain to the overall population, meaning that identifying the specific effect on people living below versus above the poverty line is difficult.

Third, because the Health and Poverty Alleviation Initiative was implemented and built upon many other initiatives, assessing its specific effects is challenging. China's poverty alleviation is a whole-of-government and whole-of-society effort that involves almost all ministries and sectors. Moreover, China's health system reform, which began in 2009, laid the foundation for the Health and Poverty Alleviation Initiative. Many activities of the Health and Poverty Alleviation Initiative built on and extended the earlier reforms. Although enhancing the health system is one of the key successes of the Initiative, it remains difficult to isolate its particular impact independent of other efforts.

Fourth, conducting a cost–benefit analysis of the Health and Poverty Alleviation Initiative is not feasible. Traditional cost-effectiveness or cost–benefit frameworks are not applicable to multisectoral policy packages, which typically involve complex and interrelated interventions rather than a single, clearly defined policy. Differences in statistical definitions and measurement criteria compound the difficulty. As discussed earlier, China's overall poverty alleviation efforts adopted a pooled financing mechanism, with total funds reaching up to 1% of GDP in 2020. Scientifically disentangling the specific cost of the initiative, let alone estimating its cost–benefit ratio, is therefore not possible.

4.1.4 Mixed outcomes of health and poverty alleviation policies

The Health and Poverty Alleviation Initiative encompassed a range of policies with diverse effects, contributing to notable improvements and identifying areas that merit more attention. Among these areas, population relocation has attracted considerable discussion. This strategy primarily targeted people residing in areas with poor access to public services, constrained resources, high ecological vulnerability, frequent geological disasters, and elevated disease burden. These regions were often characterised by underdeveloped infrastructure and challenging living conditions that placed residents under multiple and intersecting constraints.[170] The reasons for relocation are listed in the appendix (p 27).

These relocation efforts led to populations being resesttled in areas with substantially better living conditions and infrastructure. Across 22 provinces and nearly 1400 counties, more than 35 000 resettlement sites were established, which provided more than 2·66 million housing units with an average living area of 20·8 square metres per person.[170,171] Alongside housing, comprehensive infrastructure development took place, including development of water supply facilities, electricity infrastructure, roads, telecommunications networks, and waste management facilities. Public services such as schools, health-care centres, and care facilities for older

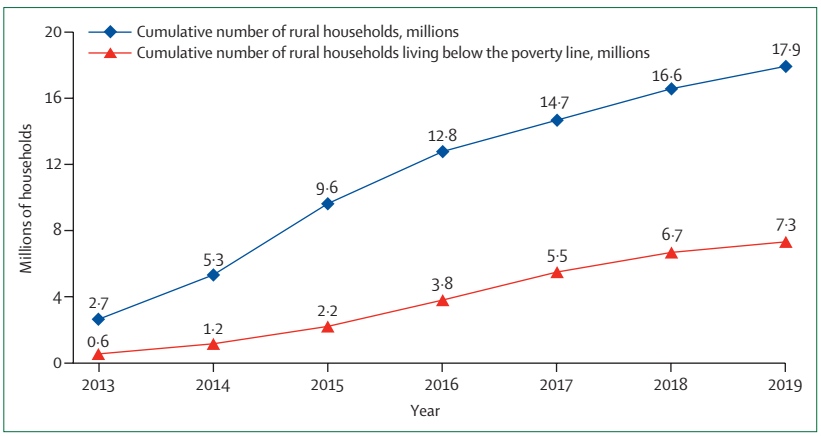

Figure 14: **Cumulative number of rural households receiving subsidies for dilapidated house renovation**
Data are from the Poverty Alleviation Online Exhibition.[165]

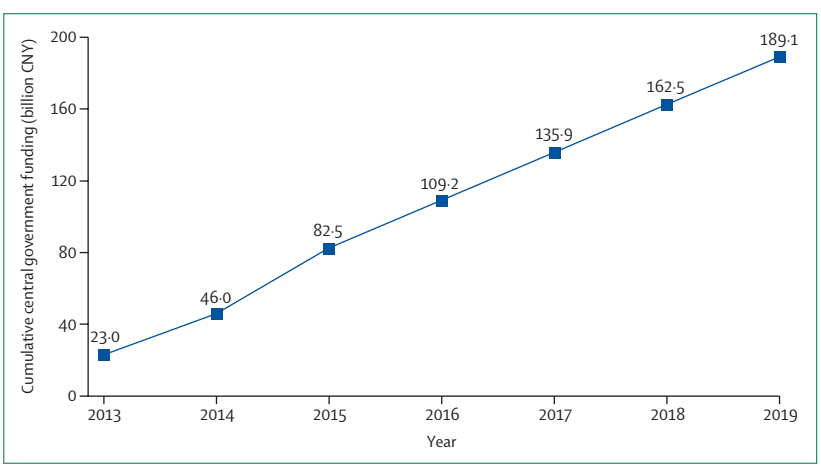

Figure 15: **Cumulative funding provided by the central government for rural dilapidated house renovation**
Data are from the Poverty Alleviation Online Exhibition.[165]

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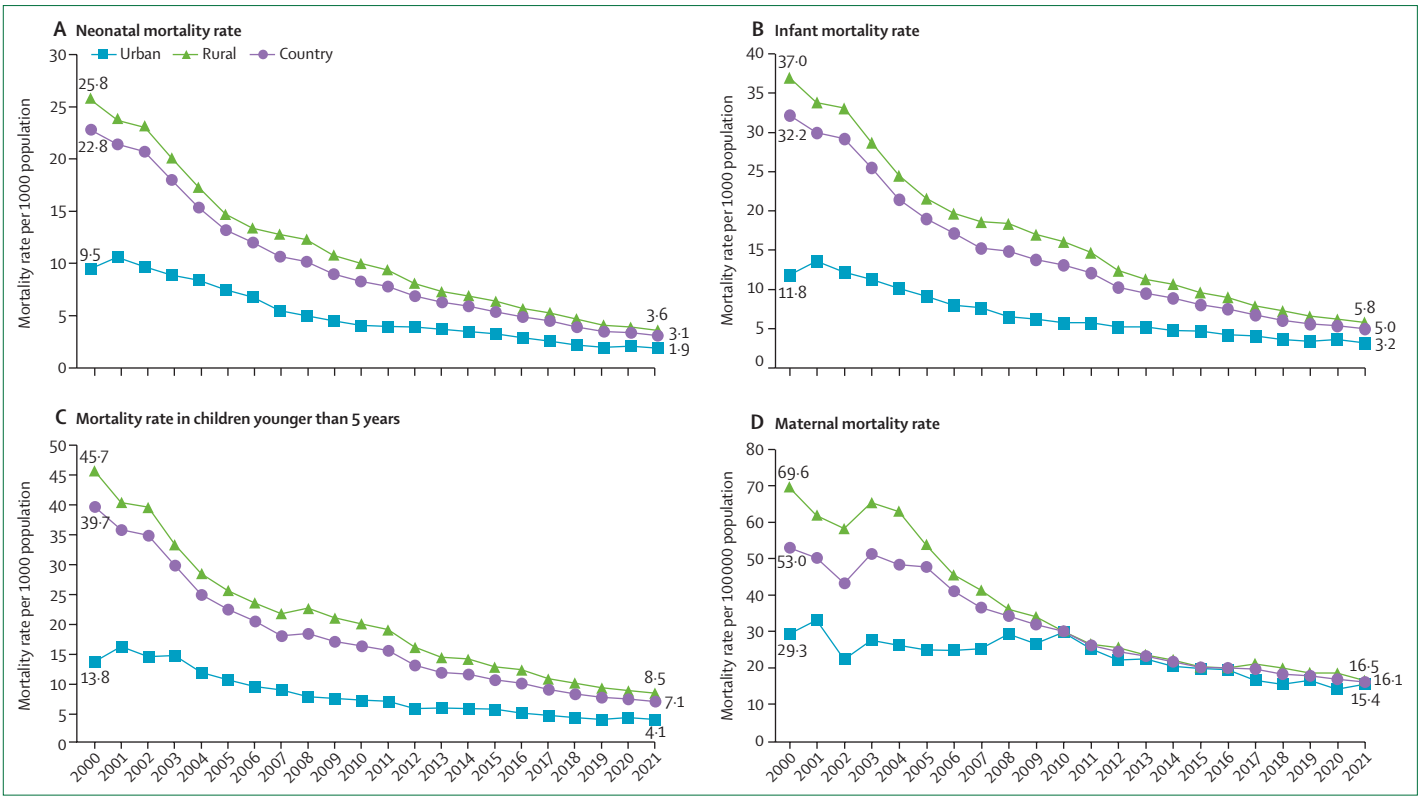

Figure 16: **2000–21 mortality rates**
Neonatal (A), infant (B), children younger than 5 years (C), and maternal (D) mortality rates in urban, rural, and national populations. Data are from the National Health and Family Statistical Yearbook.[166] Note the denominator for panel D differs from that of panels A–C.

people were enhanced.[171] Relocated households had a remarkable increase in wages and household income (appendix p 28).[172]

The relocation process highlighted several dimensions that warrant continued attention. For example, changes in living environments can affect existing social networks and community cohesion, with potential implications for social support and psychological wellbeing, especially among adolescents. The adjustment process can introduce transitional pressures for families, including adaptation to new social contexts and environments. In the educational domain, students can face challenges related to school transitions and differences in curricula, which could influence learning continuity.[173–175]

Overall, the relocation programme made important contributions to improving material living conditions and economic opportunities, large-scale relocation under China's poverty alleviation campaign has been completed, and more efforts to strengthen community integration, support mental wellbeing, and facilitate smoother social and educational transitions could enhance its long-term effectiveness. Such considerations could help ensure that improvements in physical and economic conditions are accompanied by sustained gains in overall wellbeing.

4.2 Emerging challenges

Beyond the challenges already discussed, China's Health and Poverty Alleviation Initiative faces a rapidly evolving context that poses challenges to its long-term sustainability. Key macroenvironmental factors, including population ageing, climate change, emerging pandemics, and technological advancements, complicate the future trajectory for poverty alleviation and health, which should be researched and incorporated into future policy making.

4.2.1 Non-communicable diseases along with demographic transition

Non-communicable diseases (NCDs), once primarily associated with affluent populations, are now increasingly affecting people with low income. In many countries—including high-income nations such as the USA and the UK, and some low-income and middle-income countries such as Kenya—the prevalence of NCDs among people with low income has now surpassed that of people with high income.[176,177] In China, nationally representative data from the CHARLS and China Family Panel Studies show a similar trend. Between 2011 and 2018, the prevalence of hypertension among people living below the poverty line aged 45 years or older surged from 28·1% to 42·9%, exceeding the 39·6% observed among people living above the poverty

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line (appendix p 29).[155,156] These patterns indicate that socioeconomic disadvantage has become a key determinant of NCD risk, reinforcing health inequalities.[178–180]

Demographic transition amplifies these challenges. Simultaneously, China's population is ageing rapidly and has historically low fertility. By 2022, the country had 280 million individuals aged 60 years or older—19·8% of the population—and projections suggest this proportion will exceed 30% by 2035.[160,181,182] Moreover, data from the Seventh National Population Census indicate that the total fertility rate (ie, the average number of children a woman is expected to have in her lifetime) in China dropped to 1·3 in 2020, far below the population replacement level of 2·1 and even lower than the internationally recognised cautionary threshold of 1·5.[183]

Demographic transition affects poverty and economic vulnerability through multiple pathways, including rising medical expenses, reduced economic productivity, changes in household composition, and increased reliance on interhousehold support.[181,184] A particularly important pathway is the heightened prevalence and complexity of NCDs (including diabetes, hypertension, chronic obstructive pulmonary disease, musculoskeletal disorders, hearing loss, and multimorbidity) in older populations, which substantially increase demand for health care and long-term care.[182]

The combined pressures of rising NCD prevalence among people with low income and rapid population ageing help explain a persistent and troubling pattern: despite substantial health system reforms in China, catastrophic health expenditure remains a persistent challenge, particularly among vulnerable populations. Without integrated, preventive, and equity-oriented policies that address both NCD prevention and healthy ageing, the financial burden on households and health systems is likely to continue growing and threaten the sustainability of health gains and poverty reduction achievements.

4.2.2 Social protection measures for older adults

To mitigate the challenges associated with population ageing and increasing health-care needs among older adults, and to prevent older adults from falling into poverty, China has established a multitiered social protection framework. The Basic Pension Insurance Scheme includes urban employee and urban and rural residents' schemes, yet coverage remains low in terms of both quality and benefits, especially for groups with low income. To enhance financial resilience, the government has piloted Long-Term Care Insurance to support individuals with functional limitations. Some researchers evaluated the overall reduction in family caregiving burden across 49 pilot cities in China, but the coverage remained narrow: in Qingdao, for example, less than 2% of people aged 60 years or older benefited from Long-Term Care Insurance. Additionally, rural and home-based care services were insufficiently supplied, disability assessment standards were fragmented, and the programme overly relied on medical insurance funds, raising concerns about its sustainability.[185]

4.2.3 Health insurance and social safety nets

For health coverage, the widely available Basic Medical Insurance has extensive reach but often leaves older individuals who have chronic or multiple conditions with high out-of-pocket costs, highlighting the need for stronger financial protection.[186] In addition, social assistance programmes (such as the Minimum Living Standard Guarantee [dibao], high-age allowances, and support for people with special difficulties [a programme providing assistance for individuals who do not have the ability to work, income sources, and family support]) provide crucial supplementary protection. Together, these measures, including pensions, health insurance, long-term care support, and social safety nets, form a multitiered framework that is essential for safeguarding the health and economic security of older adults amid population ageing.

4.2.4 Climate challenge

Climate change, through extreme weather events and global warming, poses a substantial threat to poverty alleviation and public health.[187] The relationship between poverty and climate change is cyclical: poverty heightens the vulnerability to climatic shocks, and climate change exacerbates conditions that lead to poverty.[188] This challenge is especially crucial in countries such as China, where rapid economic growth and important achievements in poverty reduction are threatened by the adverse effects of climate change. For example, a recent study highlighted the interdependence between disaster and extreme weather event resilience (often linked with climate change) and access to reliable energy sources.[187] The repercussions of insufficient energy can lead to disruptions in medical services that intensify disease burden and energy poverty among people with low income, thereby risking a regression into poverty.

Despite growing evidence highlighting the need for integrated climate, poverty, and health strategies, a comprehensive, forward-looking, and inclusive national and local strategy to tackle these interconnected issues is still not available. Current health and poverty alleviation policies seldom incorporate preparedness for climate-related risks, but urgently need to ensure that people living below the poverty line are able to adapt to the impacts of climate change. The gaps within local capabilities to make communities climate-resilient remain, with inadequate financial resources available to increase access to health resources, technologies, information, and services. When fostering deeper multisectoral collaborations, climate challenges should be taken into account in policy making in all sectors, and

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clear measures should be in place to mitigate the future occurrence of climate-induced, health-related poverty.

China's vulnerability to climate shocks poses direct risks to health, with the burden falling disproportionately on people with low income. In coastal megacities, such as Shanghai, wealthier central districts are relatively protected by stronger health infrastructure, whereas low-income communities and urban villages face higher risks of heat-related illness compared with wealthy communities with better infrastructure and adaptive capacity. In rural western regions, recurrent drought and shrinking water resources disrupt access to both safe drinking water and basic health services. These different exposures illustrate how climate change amplifies existing health inequalities and compounds the challenges faced by disadvantaged populations. Thus, although low-cost health insurance reduces income dependence in health-care access, climate change introduces systemic risks through infrastructure disruption, uneven regional exposure, and nutritional pathways that disproportionately heighten health burdens among people with low income.

4.2.5 The COVID-19 pandemic

Public health emergencies introduce a myriad of uncertainties regarding poverty alleviation. The global impact of the COVID-19 pandemic was an example of how pandemics possess the potential to unravel the promising strides made in global poverty reduction. The repercussions of public health crises extend beyond immediate health concerns and lead to economic contractions, which push people into poverty, both locally and globally. Vulnerable groups bear a disproportionate burden during these crises, as public health emergencies can exacerbate social and economic inequalities.[189,190] As societies grapple with the immediate demands of a pandemic, scarce resources are redirected and policy priorities can be shifted away from poverty alleviation.

In China, where many strides were made through the Health and Poverty Alleviation Initiative, the impact of the COVID-19 pandemic was keenly felt. A survey of 1183 households across five counties affected by poverty, conducted jointly by the China International Center for Economic and Technical Exchanges and the UNDP (with support from the Office of the Resident Coordinator, UNICEF, and the UN Population Fund) during the COVID-19 pandemic, showed that household incomes generally declined during the pandemic and that children in rural and impoverished households were more likely to be left unattended during school closures than those in urban and non-impoverished households.[189] Conversely, notable efforts were sustained to ensure the continuity of poverty-alleviation policies. Even among the challenges posed by the COVID-19 pandemic, China showed resilience in maintaining key initiatives. The same survey indicated that most households managed to cope with income loss without having a major decline in living standards. Importantly, the effects were small for registered households with low income, largely due to the existing social protection system and favourable poverty alleviation measures, with the government even raising benefit amounts to support them. By contrast, the primary concern centred on people living just above the poverty line, who were less likely to receive social assistance than people living below the poverty line and therefore remained vulnerable in the absence of adequate protection.[190]

Drawing on lessons learned, the Chinese Center for Disease Control and Prevention has been increasing its investment in surveillance and strengthening its capacity for rapid response to spillover events, which disproportionately occur in socioeconomically disadvantaged areas where animal–human interactions are more frequent. Looking ahead, public health emergencies will undoubtedly remain formidable challenges that cannot be underestimated. The COVID-19 pandemic underscored the importance of proactive strategies, global cooperation, and resilient policies to mitigate the effects on poverty reduction initiatives and ensure a more sustainable and equitable future.[190]

4.2.6 Technology and the digital divide

The rapid advancement of digital health-care technologies, such as telemedicine, big data, and AI, holds immense potential but also introduces new challenges, particularly for vulnerable populations.

One of the key challenges is the digital divide, which remains a substantial barrier for many marginalised communities. These populations often have insufficient access to the infrastructure necessary to access digital tools, such as reliable internet connections, and might not possess the digital literacy required to fully benefit from these innovations. In rural and low-income areas, where health-care disparities are already substantial, the inability to access or use digital health solutions can exacerbate existing inequalities. Additionally, vulnerable groups, such as older adults, individuals with lower educational attainment, and individuals with disabilities, can face additional challenges in understanding or engaging with these tools. If technologies are not designed to be accessible and inclusive, the risk of deepening health inequities is heightened. Without sufficient access to digital tools and adequate support, these groups can be left behind, which only deepens the divide in health-care access.

Moreover, the introduction of digital health solutions raises crucial concerns about data privacy and security, particularly when handling sensitive health information. In many rural and underserved communities, little awareness of how personal data are managed increases the risk of privacy breaches, which is a particularly concerning dynamic for vulnerable populations who might not fully understand the implications of sharing their health data or who might not have the necessary

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protections to secure this information. Ethical considerations around data handling, such as informed consent and transparency about data usage, become crucial in these contexts. Without robust safeguards, these privacy and security risks could increase distrust in digital health solutions, hindering their effectiveness and uptake.

4.3 Recommendations

In response to both current and emerging challenges, we propose a set of recommendations for ensuring the long-term effectiveness and sustainability of China's Health and Poverty Alleviation Initiative. These actions address structural weaknesses, adapt to evolving socioeconomic and environmental conditions, and enhance the resilience of health-care and social support systems.

4.3.1 Ensuring long-term sustainability of health gains amid fiscal constraints

Sustaining the gains in health and poverty reduction achieved through China's Health and Poverty Alleviation Initiative has been a major concern. Accordingly, several measures have been or should be implemented to preserve and build upon its initial success. To begin with, to reduce reliance on government fiscal inputs, particularly amid the current economic downturn, China should diversify its funding sources. Diversification could involve greater engagement from the private sector, philanthropic organisations, and public–private partnerships. Expanding these partnerships, in particular, can attract additional resources and foster innovation in health-care delivery, especially in rural and underserved areas. In addition, key government initiatives crucial to the programme's success (eg, health workforce training, public health services, and maternal and child health care) continue to be prioritised even after completion of the programme in 2020. A 5-year transitional period from 2021 to 2025 was implemented to consolidate poverty reduction achievements and facilitate their integration with the rural revitalisation strategy. Following completion of the transitional period at the end of 2025, the policy focus has shifted towards consolidating poverty reduction gains, preventing a return to poverty, and advancing rural revitalisation.

More importantly, the Health and Poverty Alleviation Initiative has been integrated into China's Rural Revitalization Strategy to ensure its long-term impact. As a national strategy, Rural Revitalization aims to modernise and rejuvenate rural areas, promote sustainable development, and bridge the urban–rural gap to ultimately enhance the wellbeing of rural populations. By embedding health and poverty alleviation efforts within this broader framework, the initiative's achievements are consolidated, which contributes to long-term improvements in health-care access and financial protection for rural populations. This alignment reinforces the overarching goal of the Rural Revitalization Strategy: building strong agriculture, a beautiful countryside, and prosperous farmers by 2050.

4.3.2 Strengthening primary health care to tackle poverty

Despite the progress made through health and poverty alleviation efforts, PHC services in China continue to face considerable challenges, particularly in underserved areas where health-care personnel are scarce. The conclusion of the Health and Poverty Alleviation Initiative in 2020 has led to a reduction in resources and support from higher-level institutions to the PHC facilities, exacerbating the difficulty of addressing health disparities, especially in rural regions. Given the growing burden of NCDs, the urban–rural health gap, and the ageing population, strengthening PHC is essential. To reinforce PHC, China should focus on the key areas of retention of health-care workers, integration and incentives for preventive health services, addressing risk factors, and early screening and preventive measures.

In terms of the retention of health-care workers, retaining skilled health-care professionals in rural and underserved areas remains a major challenge. To ensure continuity of care and improve health outcomes, health-care workers in these regions must be incentivised to remain. Local health-care providers should offer financial incentives, professional development opportunities, and career advancement pathways. In addition, creating clear career progression within the public health-care system can help stabilise the health-care workforce in rural areas.

In terms of integration and incentives for preventive health services, the integration of these services with the family doctor system is crucial for addressing both NCDs and the broader health challenges in rural communities. Individuals who actively engage in health management should be provided with incentives, such as medication subsidies, discounts on regular check-up appointments, or vouchers for health services. These benefits will encourage continued participation, facilitate early detection of health issues, and reduce the prevalence of preventable diseases.[67,125]

In terms of addressing risk factors beyond NCDs, PHC should focus on the underlying risk factors that contribute to poor health outcomes. Addressing these risk factors includes promoting smoking cessation, reducing alcohol consumption, encouraging healthier diets, and increasing physical activity. Health promotion programmes tailored to the specific needs of populations with low income should be prioritised, as these risk factors are often more prevalent in these communities.

In terms of early screening and preventive measures, the early detection of chronic conditions such as hypertension, diabetes, and obesity, as well as infectious diseases like hepatitis B, should be prioritised within PHC settings. Mobile health teams and trained local health workers can conduct screenings in rural areas where access to health-care facilities is limited by geographical distance, transportation barriers, and

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shortages of local health-care services. This approach ensures that even the most remote populations have access to timely diagnosis and preventive care, reducing the disease burden and associated health-care costs.

By strengthening PHC, incentivising health-care workers, and emphasising preventive health services, China can mitigate the growing burden of NCDs, reduce health-care costs, prevent health-related poverty, and improve the overall wellbeing of vulnerable populations. This approach is crucial for narrowing the urban–rural health gap and promoting long-term sustainability in the face of demographic changes and economic challenges.

4.3.3 Leveraging technologies and innovative health solutions

Technological innovations are transforming health-care delivery by improving access to services, enhancing diagnostic capabilities, strengthening monitoring systems, and enabling timely interventions, even in regions with insufficient health-care infrastructure. In the context of China's Health and Poverty Alleviation Initiative, digital solutions have already shown notable potential. Telemedicine has expanded health-care access by enabling remote consultations with specialists and reducing the need for long-distance travel. Big data analytics are leveraged to monitor health trends and optimise resource allocation, improving efficiency and responsiveness in health-care service delivery.

To ensure the equitable implementation of digital health solutions, China must take proactive steps. Key initiatives include investing in broadband infrastructure and digital literacy programmes to ensure rural and low-income populations can access these technologies. Establishing robust data protection policies, such as encryption standards and strict access controls, is essential to safeguarding sensitive health information. Additionally, raising awareness and educating communities about data security will help mitigate risks. Moreover, health-care professionals, especially in rural areas, should receive training on the use of digital tools—such as telemedicine platforms and electronic health records—to maximise the benefits of these innovations. Special attention must be paid to ensuring that vulnerable populations, such as older adults, individuals with disabilities, and adults with little education, are not excluded due to technological barriers.

Furthermore, advanced technologies can enhance the NDMS, which has played a crucial role in identifying populations at risk of poverty and enabling timely interventions. This system remains operational, providing continuous surveillance and early warnings for individuals at risk of entering or returning to poverty due to health-related burdens; however, more improvements are needed to enhance its effectiveness, including optimised indicators and independent third-party evaluations.

In terms of optimising indicators, clearly defining key performance indicators, such as health outcomes (eg, mortality rates and disease burden), economic factors (eg, health-care spending and debt burden), and service use metrics (eg, hospitalisation rates and outpatient visits), will provide a more comprehensive picture of the initiative's successes and challenges.

In terms of independent third-party evaluations, to enhance credibility and ensure objective assessments, independent evaluations by universities, research organisations, or international bodies should be conducted. Peer reviews and audits by academic institutions should assess the performance of the NDMS, including in terms of data quality, monitoring processes, and the effectiveness of health and poverty alleviation interventions informed by the system, in order to maintain transparency and to provide evidence-based recommendations for policy adjustments.

By strengthening digital health initiatives and refining monitoring systems, China can improve the effectiveness of its health and poverty alleviation efforts. These measures will enable timely policy interventions, bridge health-care disparities, and support long-term sustainability.

4.3.4 Embedding health considerations across sectors to prevent policy fragmentation

China's Health First strategy marks a fundamental policy shift toward prioritising health in national development, social governance, and economic planning. Aligned with the global Health in All Policies framework, this approach recognises that poverty alleviation must go beyond income growth: it requires a co-designed strategy in which health is embedded into broader development efforts. Translating this vision into action, however, demands an effective multisectoral coordination mechanism and stronger local governance.

Multisectoral collaboration is necessary but currently insufficient. The key challenge lies in ensuring that different sectors operate under a unified health and poverty alleviation framework, rather than functioning as an interdepartmental committee with fragmented objectives. To achieve this goal, overlapping mandates and weak accountability must be addressed. Clearly defining sectoral responsibilities—such as in health, housing, water, and nutrition—prevents inefficiencies and ensures alignment with shared goals. A co-design approach, by which multiple sectors collaborate from the outset, will enhance the impact of health and poverty alleviation efforts by ensuring their policies are mutually reinforcing rather than working in silos.

Empowering local governments is crucial to sustaining health poverty alleviation efforts. A top-down policy framework, combined with bottom-up flexibility, enables effective, region-specific solutions. Establishing reward mechanisms, such as financial bonuses, official recognition, and additional resources, for local governments that excel in health poverty alleviation will incentivise sustained commitment. Linking performance indicators

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to budget allocations or career advancement ensures accountability and long-term impact. Additionally, fostering community participation through regular platforms allows local residents to discuss health-care needs, assess programme effectiveness, and oversee resource allocation, enhancing transparency and ensuring interventions align with real community needs. In regions with strong ethnic traditions, integrating local governance structures, such as village committees, into health programmes can enhance engagement and compliance. These institutions play a pivotal role in shaping health behaviours and ensuring cultural alignment.

By reinforcing local governance, strengthening accountability, and embedding health within broader development strategies, China can ensure that its health poverty alleviation efforts remain effective and sustainable. A well integrated, responsive system will not only improve health outcomes but also drive long-term social and economic development.

4.3.5 Strengthening health system resilience

The long-term sustainability of the Health and Poverty Alleviation Initiative hinges on a resilient health system that can effectively adapt to emerging challenges, such as an ageing population, climate change, rapid urbanisation, and potential health crises such as pandemics. To achieve this resilience, a comprehensive strategy is required—one that strengthens emergency preparedness, ensures universal health coverage, reinforces climate-resilient infrastructure, and accommodates shifting demographic and migration patterns.

In terms of emergency response plans, establishing a well coordinated health emergency network at both provincial and national levels is critical to ensuring timely and effective responses during public health emergencies and natural disasters. Clear protocols must prioritise populations such as older adults, individuals with NCDs, and low-income families, ensuring their uninterrupted access to medical care and essential supplies. Strengthening coordination between health departments, emergency services, and community organisations will enhance preparedness and response efficiency. Additionally, health-care workers, especially those in rural and under-resourced areas, must receive systematic training in managing emergencies such as infectious disease outbreaks, extreme weather events, and natural disasters. Enhancing their capacity to sustain health-care services under adverse conditions will minimise disruptions and ensure continuity of care.

Ensuring equitable access to essential health services without financial hardship is fundamental to resilience and aligns with the principles of universal health coverage. Strengthening financial protection mechanisms—such as expanding government-funded insurance programmes and reducing out-of-pocket expenditures—will enable vulnerable populations to receive timely care, even in times of crisis. Integrating primary health-care services with broader social protection policies can prevent medical impoverishment and reduce health disparities. Beyond financial access, universal health coverage requires a robust primary healthcare network that delivers continuous, people-centred care. Expanding the availability of essential medicines, preventive services, and routine screenings at the primary level will alleviate pressure on hospitals and enhance the health system's capacity to absorb shocks. Special attention must be given to marginalised groups, including those in remote areas, minoritised ethnic communities, and informal labour sectors, ensuring their sustained access to affordable and high-quality health care.

The rapid pace of urbanisation and large-scale population migration are straining health system resilience. Rural-to-urban migration has intensified demand for health-care services in cities while simultaneously depleting rural areas of medical personnel, weakening primary care networks. Strengthening urban primary health-care infrastructure, ensuring the portability of health insurance, and improving referral systems between urban and rural healthcare facilities are crucial steps to addressing these disparities. Additionally, targeted policies must focus on the unique health-care needs of migrant populations, including occupational health risks, maternal and child health, and social barriers to accessing public health services. Addressing these gaps will not only improve health-care outcomes for migrants but also enhance overall health system efficiency.

Furthermore, climate change poses an escalating threat to health-care systems, particularly in regions vulnerable to extreme weather events such as flooding, heatwaves, and storms. To safeguard health-care services from climate-related disruptions, infrastructure must be upgraded to withstand environmental challenges. Facilities must be reinforced with flood-resistant materials, heat-resistant insulation, and reliable emergency power supplies. Additionally, secure storage systems for medical supplies, such as vaccines and essential medications, must be installed to protect them from extreme temperatures and natural disasters. Disaster preparedness plans should be updated regularly, integrating climate data and projections to anticipate future environmental risks and enhance long-term resilience.

A resilient health system requires a multipronged approach that integrates financial protection, strengthens health-care infrastructure, and promotes universal health coverage to ensure equitable access to essential services. By embedding principles of universal health coverage, strengthening responses to urbanisation and migration, enhancing climate resilience, and fostering cross-sector collaboration, China can build a future-ready health-care system: one that not only withstands crises but also

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drives long-term health equity and sustainable development (panel 5).

Part 5: Conclusion

This concluding section synthesises the key lessons from China's Health and Poverty Alleviation Initiative, considers the extent to which these lessons can be adapted to different national contexts, and discusses their broader implications for global health and poverty alleviation efforts.

5.1 Core takeaways from China's Health and Poverty Alleviation Initiative

The Health and Poverty Alleviation Initiative in China exemplifies the efficacy of an integrated, multisectoral approach to addressing the intertwined challenges of health disparities and poverty. This comprehensive initiative, anchored in robust policy frameworks, multisectoral collaboration, and evidence-based strategies, underscores the importance of coordinated efforts for sustainable development (appendix p 31). China's success in eradicating extreme poverty by 2020 and lifting nearly 100 million people out of destitution over the course of 8 years exemplifies the profound impact of sustained, targeted intervention. The key accomplishments of China's Health and Poverty Alleviation Initiative are summarised in the following sections.

5.1.1 Leveraging political commitment to drive large-scale, equitable, sustainable change

At the heart of China's progress was strong political commitment that was enabled by the fiscal space created through decades of rapid economic growth. In the early stages of economic reform, the emphasis on growth often came at the expense of equity, with widening disparities in health and income. By the 2000s, these inequalities—exposed starkly during the 2003 severe acute respiratory syndrome outbreak—prompted a reassessment of national priorities.[106] The crisis highlighted the consequences of underinvestment in public health and revealed the vulnerability of the population to systemic risks. In response, China's leadership recognised the need for a more balanced development approach and prioritising equitable access to services and social protection. This shift was formally marked in 2006, when the Political Bureau acknowledged that the state should assume greater responsibility for health care and public services.[191,192] Crucially, rapid economic growth had generated the fiscal resources necessary to realise this commitment. The landmark 2009 health-care reform, aimed at achieving universal basic health care, was backed by an additional ¥850 billion in public investment to strengthen infrastructure, expand insurance coverage, and reduce medical costs.[193] Complementary initiatives, including the expansion of rural cooperative medical insurance, the introduction of the minimum livelihood guarantee (dibao), and targeted poverty alleviation programmes, showed how economic resources aligned with political will were mobilised to advance social equity.[194]

China's experience underscores the importance of both political leadership and economic capacity in driving transformative change. Sustained political commitment, supported by fiscal space, allowed the country to tackle complex health and poverty challenges and achieve meaningful improvements in public welfare. Since 2021, the government's emphasis on common prosperity has signalled a continued focus on equity, aligned with global calls to leave no one behind. As China looks toward 2035, national priorities have shifted towards closing remaining health equity gaps and addressing relative poverty, with the goal of achieving broadly shared development gains.

Panel 5: Key recommendations for China's future health and poverty alleviation efforts

Recommended actions are outlined in the appendix (p 30).

- The funding strategy should diversify sources to reduce reliance on government funding by engaging the private sector, philanthropic organisations, and public–private partnerships, to ensure sustainable support for health and poverty alleviation initiatives.
- The policy design process should enable local communities to design and implement context-specific health and poverty alleviation initiatives that leverage their unique knowledge and needs. Monitoring and adaptation of interventions should utilise real-time data and digital platforms to ensure effectiveness and responsiveness to local conditions.
- All policy areas should embed health considerations and empower local governments with the authority and resources to implement health and poverty alleviation initiatives. Accountability should be maintained through performance metrics and community oversight to ensure effective execution and continuous improvement.
- Resource allocation should prioritise cost-effective interventions, such as preventive health measures (including early screening and management of chronic diseases) and public health campaigns that target risk factors such as smoking, alcohol use, and unhealthy diets. This approach could reduce the long-term burden of non-communicable diseases and optimising impact.
- The National Dynamic Monitoring System for Preventing Return to Poverty Due to Illness should continue providing real-time surveillance data, while independent evaluations by academic or international bodies analyse these data to generate actionable insights. These evidence-based recommendations should then guide targeted programme adaptations and establish a robust monitoring–evaluation–adaptation cycle.
- The distribution of health resources should continue to ensure equity, particularly in rural and underserved areas, to reduce disparities in health-care access and outcomes.
- Investment in broadband infrastructure and digital literacy programmes should ensure that rural and low-income populations can benefit from telemedicine, big data, and artificial intelligence technologies.
- To ensure the long-term sustainability of the health gains achieved through China's Health and Poverty Alleviation Initiative, policy makers should adopt an integrated life-course approach that proactively addresses ageing and low birth rates through preventive health care and social support systems, while embedding climate resilience and digital inclusion into programme design.

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5.1.2 Transforming political will into accountability across all levels of the government

China's governance arrangements reflect its specific institutional and administrative context and might not be directly replicable in other countries. Nevertheless, the broader principles underpinning these arrangements can offer lessons for other countries when adapted to their own institutional and policy contexts.

China's success in eradicating extreme poverty can be attributed to a robust foundation of political will and an effective governance structure that transformed commitment into action. The elimination of extreme poverty was prioritised as a national goal, with high-level leadership ensuring that it became a central focus of government efforts. This political commitment fostered a culture of accountability, making poverty reduction a core metric of performance at all administrative levels.

A crucial component of this governance structure was the establishment of the Poverty Alleviation Office under the State Council Leading Group, which acted as the command centre for the initiative. This office coordinated planning, mobilised resources, and deployed tens of thousands of officials to implement the programme on the ground. The clear chain of command, from Beijing's directives to provincial and local implementation, enabled efficient policy execution. These arrangements reflect China's specific institutional and administrative context, which might not be directly replicable in other countries, although leadership and strategic direction could be exercised through other institutional arrangements as appropriate to countries. Furthermore, the programme illustrates broader principles, such as equity, multisectoral collaboration, and data-driven targeting, which can inform similar efforts in other settings.

Political will was reinforced through personal accountability mechanisms. Officials at every administrative level signed responsibility agreements specifying poverty alleviation targets. These agreements were underpinned by rigorous accountability mechanisms: government officials who met targets were often rewarded with promotions or honours, whereas those who fell short faced penalties, including demotion. This mechanism created strong incentives for local leaders to prioritise poverty alleviation and health programmes, even if doing so required reallocating resources or disrupting other local priorities. In essence, China's governance structure fused vertical authority with performance-based management.

Moreover, China aligned its financial systems with its political will. Substantial domestic funds were allocated and protected for poverty and health programmes, reflecting rare budgetary prioritisation and ensuring that sufficient resources were directed towards the initiative, even amid other national demands.

5.1.3 Empowering local communities to tailor and implement effective poverty and health solutions

China's Health and Poverty Alleviation Initiative embodied the strategy of targeted poverty alleviation. The initiative integrated centralised guidance with strong community-level engagement and thereby ensured that interventions were adapted to local realities and grounded in local ownership. A key feature of the approach was decentralised implementation with central guidance. The central government set overarching goals and standards but granted provincial and local authorities flexibility in how to achieve them. Local governments were not passive recipients of directives; rather, they played an active role in tailoring interventions to their specific contexts. Each village and county developed its own poverty alleviation plan within the broader national framework. This balance between central direction and local innovation allowed policies to be adapted to diverse regional conditions, enhancing their effectiveness.

Central to this approach was the introduction of participatory, data-driven practices at the grassroots level. For example, the identification of households with low income was not solely left to statisticians; many areas used a combination of surveys and community vetting. Villagers participated in meetings to discuss and confirm which families were truly in need, fostering transparency and legitimacy in the targeting process.

Moreover, China's digital poverty-monitoring platform empowered local officials with real-time data for informed decision making. Equipped with smartphones and an app linked to the national database, village-level officials could update household progress and flag emerging issues. For instance, if a family's income decreased or a household member required medical assistance, the system would trigger an alert for prompt intervention. This data-driven, iterative approach to local governance made the implementation process highly responsive.

China also introduced structured feedback loops to enhance accountability. In addition to top-down monitoring, communities were encouraged to provide direct feedback on the services they received. Many households with low income were given survey cards to evaluate local officials, with their satisfaction or complaints fed back to higher authorities. This mechanism ensured that local officials remained accountable to the people they served and emphasised problem solving over compliance with central directives.

5.1.4 Coordinating efforts across sectors to tackle the complex, interlinked challenges of health and poverty

A cornerstone of China's Health and Poverty Alleviation Initiative was its multisectoral approach, as described earlier. Rather than limiting interventions to health care alone, this approach emphasised cross-sectoral collaboration to create a coordinated framework for poverty reduction. By effectively operationalising the

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principles of health in all policies and whole-of-government, China transformed multisectoral collaboration into concrete actions. From the outset, policy makers recognised that poverty and ill health are interconnected and multidimensional challenges, and thus required coordinated responses spanning multiple sectors.

To institutionalise this approach, the government established powerful central coordination bodies. The State Council's Leading Group for Poverty Alleviation and Development, for example, was headed by a Vice Premier and brought together senior officials from finance, education, agriculture, health, and other key ministries. This high-level body possessed the political clout to set a unified agenda, issue joint directives, and resolve interdepartmental conflicts. At the provincial, city, and county levels, similar coordination bodies were established to ensure vertical integration of policies and align goals from the central government down to local implementation.

Crucially, China's model embedded performance metrics and accountability into multisectoral collaboration. Each sector and locality were assigned specific targets—such as improving rural health-care access, expanding educational opportunities, or developing infrastructure in impoverished areas—within the broader poverty alleviation framework. Progress was closely tracked through a unified reporting system, with success measured not only in economic terms but also through social indicators, such as school enrolment rates, clinic utilisation, and other public health metrics.

The monitoring and evaluation system ensured that no sector operated in isolation. Ministries such as Health and Education were held jointly accountable for achieving poverty reduction goals and improving the wellbeing of local populations. Financial incentives from the central government also supported collaboration—special funds were allocated for intersectoral pilot projects, such as integrating agricultural training with nutrition programmes. Local leaders could also earn bonuses if their region met all poverty reduction criteria, aligning incentives with the broader objectives of the programme.

Since 2021, China's emphasis on common prosperity has signalled a shift towards more equitable development, which aligns with the SDGs and the global calls to leave no one behind. The country is trying to close remaining health equity gaps and address relative poverty, with the goal of achieving broadly shared prosperity.[126] For other nations pursuing the SDGs, China's experience offers valuable lessons: by building resilient systems, securing political commitment, and adapting policies on the basis of data and feedback, transformative progress in tackling poverty and ill health is achievable and sustainable. Although the political and social context in China is difficult to replicate, several key principles from the programme can inform global poverty alleviation efforts.

5.2 Is China's experience in health and poverty alleviation transferrable?

China's health and poverty alleviation achievements are an important component of global antipoverty efforts and have attracted substantial international attention. Many have asked whether the results seen in one of the world's most populous countries are replicable and transferrable to other low-income and middle-income countries. All policies reflect moments in history. No country's practices are replicable in different contexts, but principles are consistently transferrable.

China's unique historical and political context, for example, points to a highly powerful governance system and the legacy of central planning, among other political and structural factors. Separating the success of the targeted poverty alleviation campaign from the system that enabled it is difficult. The strong leadership of the ruling party and the ability of large-scale mobilisation of social and economic resources at all levels, among different regions and across government agencies, between public and private sectors, are not easy to replicate in other countries, where different economic and political systems are in place. In addition, the mass campaign-style approaches to the challenges have raised the question of the sustainability of China's Health and Poverty Alleviation Initiative.

Many of the crucial elements and mechanisms underpinning China's health and poverty alleviation model are relevant to all countries, from goal setting to strategies, organisational arrangement to implementation, and values to principles—all of which hold crucial lessons for the global fight against poverty. Additionally, beyond consideration of the specific interventions in China, the gradual yet consistent social value transition from economic growth to equity has fundamentally guided China's development pathway, institutional arrangement, code of societal behaviours, and work ethics. Such a value, of building an equitable society, is universally relevant across all countries. In the case of China, it shapes agendas, policy formulation, priority setting, and decision making of Chinese political leaders. The political commitments to address the needs and aspirations of Chinese society from the top leaders, in return, set the tone for a whole-of-government approach, multisectoral collaboration, and strong accountability mechanisms in China's Health and Poverty Alleviation Initiative.

A key feature of China's health and poverty alleviation approach is multisectoral collaboration. As poverty is multidimensional, it is widely accepted that the most effective interventions that empower people to escape from poverty should address the lives and needs of people in a holistic way. Multisectoral collaboration has, therefore, been widely recognised as important for addressing the interconnected determinants of health and poverty;[20,21] however, as many low-income and middle-income countries often face the challenge of weak and fragmented

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institutions, coordination of multisectoral actions might not be possible. In China, political decision making is the driving force behind the multisectoral collaboration for health and poverty alleviation, followed by a clear governance structure, and a set of evidence-informed and precision-targeted implementation strategies. In addition to existing systems and structures within government bodies, a particular practice in China is to set up a high-level office with political endorsement to oversee and coordinate the efforts across agencies. This practice ensures a clear definition of roles and responsibilities of different stakeholders, facilitates information sharing and learning, and creates a strong support system for policy cohesion.

In addition to the horizontal collaboration across agencies and sectors, local governments also play a central role in China's health-related poverty reduction. In its vertical administrative system, higher-level governments monitor and provide guidance to lower-level governments in relation to specific health and poverty reduction targets, while encouraging the local counterparts to develop their own strategies and initiatives. This synergistic approach has provided policy space for locally designed and contextually appropriate interventions suitable for China's social, economic, and cultural diversity. The incentive system and accountability mechanism also place strong responsibility onto individual government officials. On the one hand, local governments were decentralised, with autonomy and appropriate incentives to enable local fulfilment of the health and poverty reduction goals set by the higher-tier governments. On the other hand, the higher-level governments are responsible for monitoring and supervising lower-level governments with the authority to veto decisions related to poverty alleviation. High-level governments provide effective control over decisions and hence can hold local governments accountable for meeting targets.

Despite distinctive and context-specific features, many useful lessons can be learned from China's experience in health and poverty alleviation, from both technical and structural perspectives. China's pursuit of health system development in very low-income and remote areas speaks to long-term political commitment. Through the country's organisational arrangement, health issues are addressed from a broader and holistic approach at all levels of the government, and across public and private sectors. This arrangement ensures that people with low income were provided with not only health care, but also electricity, housing, clean water, education, and necessary financial support. The Chinese case for health and poverty alleviation provides evidence in support of a strong incentive and accountability system, which should be put in place to facilitate multisectoral collaboration and intergovernmental coordination. Arguably, these policy tools are not unique to China. How China orchestrates different policy instruments in a coordinated manner to generate synergistic effects, how policies are implemented iteratively, and how social value was embedded into top political commitment for the country's health and poverty alleviation initiative are worth learning and sharing with other societies facing similar situations (panel 6).

5.3 Implications for global health and poverty alleviation actions

The experience of China's Health and Poverty Alleviation Initiative offers valuable insights for other countries, particularly those facing similar health and poverty challenges. Although some aspects of China's model are context-specific, several core principles can inform global strategies for poverty alleviation and health equity. One of the most pressing health issues in countries with poverty is the high prevalence of infectious diseases, such as malaria, tuberculosis, and HIV/AIDS, alongside issues of malnutrition and maternal and child health. These health challenges disproportionately affect people living below the poverty line and hinder efforts to break the cycle of poverty. China's approaches to combating health-related poverty, although focused on non-communicable diseases in its later stages, provides a broader lesson in how integrated, multisectoral approaches can address health challenges. Low-income countries can similarly adopt a holistic framework that tackles health in conjunction with factors such as clean water, sanitation, nutrition, and housing. China's success in coordinating efforts across sectors shows that addressing the root causes of poverty requires aligning health initiatives with broader development efforts.

China's targeted and data-driven approaches also offer valuable lessons for other countries. Accurate identification of people living below the poverty line and the integration of health data systems can enable governments to deploy resources more effectively. For countries grappling with infectious diseases, the ability to track health outcomes and monitor at-risk populations in real time is crucial. Low-income and middle-income countries should prioritise establishing national health information systems that allow for real-time tracking of disease outbreaks, maternal and child health indicators, and poverty. These systems can help ensure that interventions are timely, precise, and responsive to the unique needs of different regions and populations, such as how China used its unified national information system to dynamically manage health and poverty data.

Another implication for global health and poverty alleviation is the importance of strong governance and accountability mechanisms. China's model of coordinated action across government levels, with clear roles and responsibilities, has been instrumental in driving the initiative's success. For countries with weaker governance structures, building capacity at both the national and local levels is crucial. Ensuring that local governments have the autonomy and resources to

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Panel 6: **Transferable principles from China and lessons for global poverty alleviation**

Although the specific policy instruments and scale of implementation reflect China's institutional, administrative, and fiscal context, other countries can adapt transferable principles to their own settings.

- Intersectoral and multilevel coordination: engaging multiple levels of government in a coordinated effort can improve the effectiveness of poverty alleviation policies. In China, such governance enabled rapid mobilisation of resources and implementation, illustrating the value of clear roles, communication channels, and coordination mechanisms. Other countries can adapt this principle by fostering cooperation across administrative levels and sectors.
- Data-informed local adaptation: combining central guidance with local decision making allows policies to be tailored to regional and community needs. China supported local governments and communities with participatory vetting and real-time digital monitoring platforms. The transferable principle is that data and evidence can guide localised adaptation of programmes, which is broadly applicable even in different governance contexts.
- Governance accountability: clear links between performance and outcomes encourage results-oriented implementation. In China, officials signed responsibility agreements and faced rewards or penalties based on performance. Although specific incentive systems can vary, the underlying lesson is that transparent accountability structures can improve programme implementation globally.
- Cross-sectoral collaboration: aligning multiple sectors, such as health, education, and agriculture, under shared poverty alleviation goals help address the root causes of poverty holistically. China's experience shows that interministerial coordination and integrated policies can enhance programme impact. Countries can adapt this principle by fostering collaboration among relevant sectors.
- Resource prioritisation within fiscal constraints: sustained economic growth provided China with the fiscal space to invest in health, education, and social protection. Although other countries might face different resource limitations, the key takeaway is that prioritising and protecting funds for social programmes is essential for effective poverty alleviation.
- Sustained political commitment to equity: long-term leadership support ensures that both poverty reduction and health quality remain priorities. China's emphasis on equitable access to health care and integration of health programmes within poverty alleviation, particularly following major reforms or major crises, shows how political will can sustain and increase the scale of social health initiatives. Other countries can draw on this principle by maintaining high-level commitment to equitable health and social development, even if institutional contests differ.

implement context-specific interventions, while maintaining accountability through strong monitoring mechanisms, can create the conditions for successful poverty alleviation. Countries can draw from China's experience of decentralising authority while maintaining centralised oversight to ensure that local efforts align with national poverty reduction goals. However, the global applicability of China's approach is not without limitations. Many low-income countries do not have the same level of government capacity or financial resources that China was able to mobilise. This raises the challenge of sustainability, especially for programmes that rely heavily on government spending. Countries facing similar financial constraints should focus on diversifying funding sources, engaging international donors, non-governmental organisations, and the private sector to support health and poverty initiatives. Additionally, fostering community involvement and grassroots initiatives can build local ownership of health programmes and increase the likelihood of their sustainability in the long term.

Last but not least, China's emphasis on equity as a guiding principle offers a universal lesson for global health and poverty alleviation efforts. The shift from economic growth to equity in China's policy agenda shows that sustainable development requires prioritising the needs of the most vulnerable populations. For countries facing deep inequalities, political commitment to equity, coupled with targeted social protection measures, can create more inclusive and resilient health systems. Ensuring that health interventions reach marginalised groups, such as women, children, older people, and people living in remote areas, will be crucial for reducing both poverty and health disparities.

An important contextual factor shaping the design and implementation of China's Health and Poverty Alleviation Initiative was the high degree of national ownership in priority setting, financing, and execution. Unlike many low-income and middle-income countries, where development assistance for health plays a substantial role in shaping programme priorities and timelines, China's health system and poverty alleviation efforts were financed predominantly through domestic public resources and implemented through national and subnational government structures. This relative policy and financial autonomy allowed for long-term planning, strong political leadership, and the alignment of incentives across administrative levels, which might have facilitated rapid and coordinated implementation. Although China's experience is not directly replicable in all contexts, it highlights the potential importance of country ownership, stable domestic financing, and coherent governance in

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accelerating large-scale health and social programmes. These considerations could be particularly relevant for low-income and middle-income countries seeking to strengthen national priority setting and implementation capacity in an evolving global financing environment.

In conclusion, China's Health and Poverty Alleviation Initiative provides lessons for countries looking to tackle the intertwined challenges of poverty and health inequities. By focusing on multisectoral collaboration, precision targeting through data systems, strong governance, and a commitment to equity, countries can create more effective and sustainable poverty alleviation programmes tailored to their specific contexts. Although replicating China's model in its entirety could be difficult, adapting these core principles to local realities can substantially advance global efforts to reduce poverty and improve health outcomes.

Contributors

MC chaired the Commission and is the corresponding author. WL, KT, ZL, JZ, VL, RA, WY, and MC conceived and designed the Commission and provided overall intellectual and strategic leadership. MC, WL, KT, ZL, and JZ led the development of the analytical framework, coordination of the Commission, interpretation of the findings, and drafting and revision of the report. VL, RA, and WY provided senior intellectual input, contributed to the interpretation of the evidence and development of the recommendations, and critically reviewed and revised the report. JC, NG, and DH contributed to data acquisition, curation, and analysis. LS, HX, YZ, and XXi contributed to the development of figures, tables, and panels, and accessed and verified the underlying data used for these materials. All other authors contributed to the review and synthesis of evidence, interpretation of findings, development of specific sections and recommendations, and critical revision of the report. All authors had access to the data used in the report and were able to access the underlying data if required. All authors reviewed and approved the final version of the report.

Declaration of interests

We declare no competing interests.

Data sharing

The NDMS data that support the findings presented in this Commission are not publicly available because of data access and confidentiality restrictions. The data could be available upon reasonable request, subject to approval by the National Health Commission of the People's Republic of China.

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THE LANCET

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

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Supplementary material

Figure A1. Health and Poverty Alleviation Initiative Framework 3

Figure A2. Control rate of hypertension among the diagnosed population in the poorest wealth quintile across 40 low- and middle-income countries, stratified by World Bank country income level..... 4

Figure A3. Control rate of diabetes among the diagnosed population in the poorest wealth quintile across 30 low- and middle-income countries, stratified by World Bank country income level..... 6

Panel A1. The National Compulsory Service Programme in China 8

Table A1 The content of financial protection..... 10

Figure A4. Pathway of multiple sectors in health and poverty alleviation 11

Panel A2. An example of a multisectoral collaboration in health and poverty alleviation observed at county level in Guangxi Province..... 12

Figure A5. Subgroup analysis of proportion of hypertension cases controlled between 2019 and 2022..... 13

Figure A6. Subgroup analysis of proportion of diabetes cases controlled diabetes between 2019 and 2022 14

Text. Methodology of difference in difference (DID) 15

Table A2. Effects of Health and Poverty Alleviation Initiative on access to tapped water from the difference-in-difference regression models 16

Figure A7. Effect of Health and Poverty Alleviation Initiative on access to tapped water 17

Table A3. Difference-in-difference regression results for access to clean water..... 18

Table A4. Effects of Health and Poverty Alleviation Initiative on access to flushable toilet from the difference-in-difference regression models..... 19

Figure A8. Effect of Health and Poverty Alleviation Initiative on access to flushable toilet..... 20

Figure A9. Total incidence of Typhoid and paratyphoid fever in China per 100,000 people: 2014-2020..... 21

Figure A10. Total incidence of dysentery in China per 100,000 people: 2014-2020..... 22

Figure A11. Total incidence of hepatitis A in China per 100,000 people: 2014-2020 23

Table A5. Effects of Health and Poverty Alleviation Initiative on access to improved housing from the difference-in-difference regression models..... 24

Figure A12. Effect of Health and Poverty Alleviation Program on access to improved housing .. 25

Table A6. Under-5 Mortality Rate by Region between 2000 and 2020 (‰)..... 26

Table A7. Reasons for relocation among the registered poor population during the 13th Five-Year Plan period (2016–2020)..... 27

Figure A13. Per capita disposable income of relocated households, year 2015 Vs. year 2018 28

Figure A14. Prevalence of self-reported hypertension by poverty status (over 45 years old)..... 29

Table A8. Recommendations, responsible actors, and actions..... 30

Figure A15. Key enables for poverty and health alleviation initiative 31

Figure A1. Health and Poverty Alleviation Initiative Framework

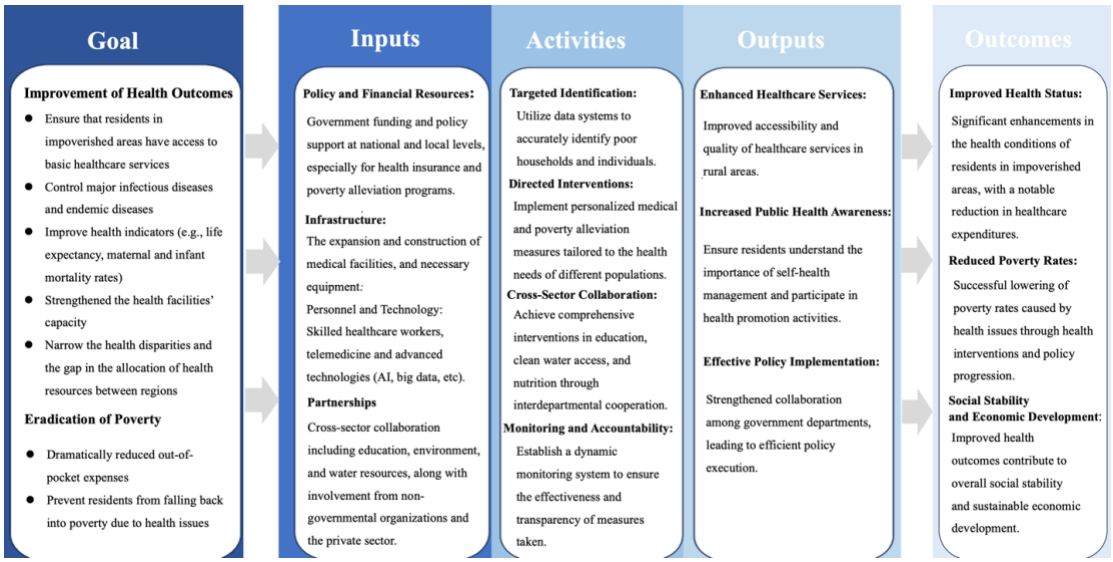
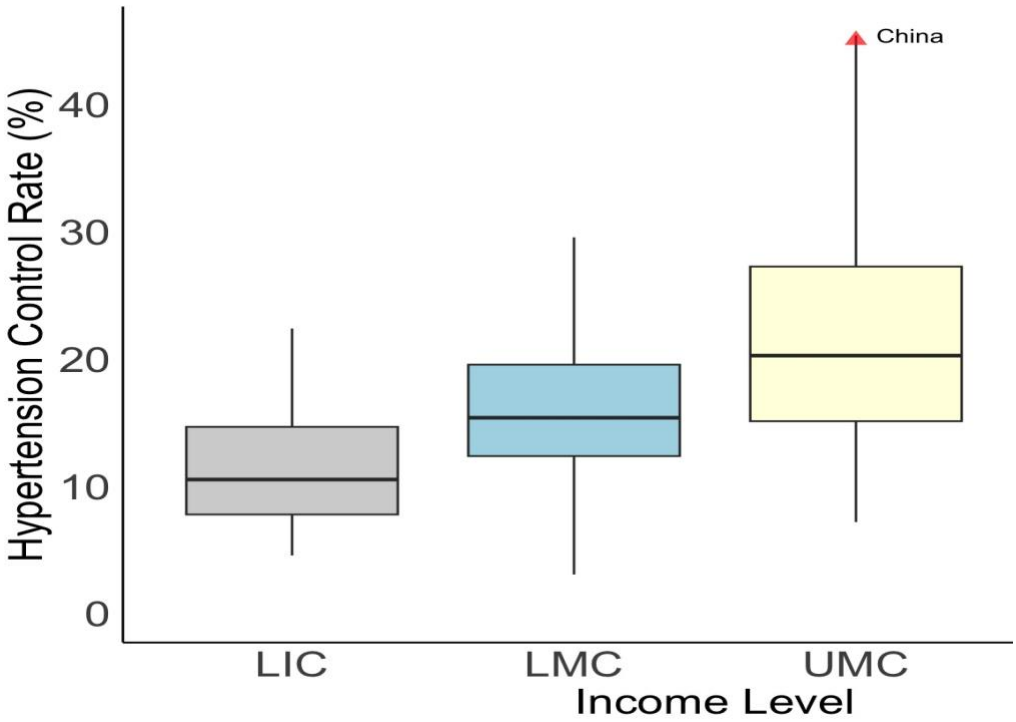


Figure A2. Control rate of hypertension among the diagnosed population in the poorest wealth quintile across 40 low- and middle-income countries, stratified by World Bank country income level



Data source: Data for China were sourced from the National Dynamic Monitoring System for Preventing Return to Poverty due to Illness, whereas data for the other 39 countries were obtained from the World Health Organization (WHO) STEPwise Approach to Noncommunicable Disease (NCD) Risk Factor Surveillance (STEPS).

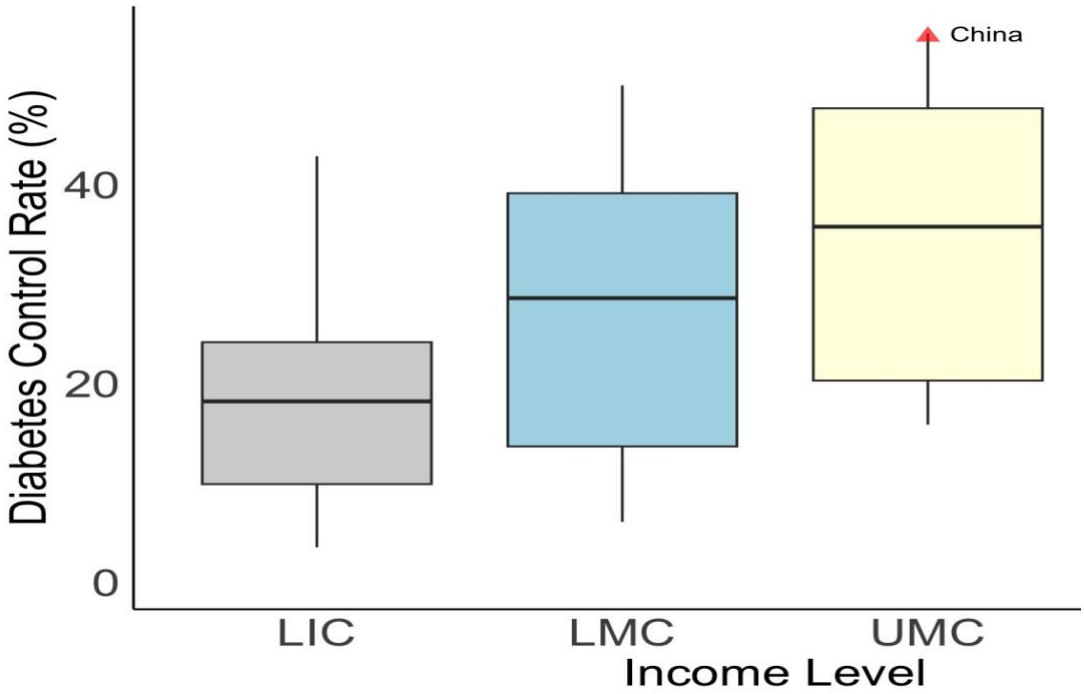
Note:

- Hypertension controlled is defined as a diagnosed individual's blood pressure measurements consistently falling below 140 mm Hg for systolic blood pressure and 90 mm Hg for diastolic blood pressure throughout a given year.
- The control rate of hypertension is calculated as the number of cases with controlled hypertension divided by the number of diagnosed cases that had at least one recorded blood pressure measurement.
- We included a total of 40 countries in this analysis, categorizing them into three income levels based on the World Bank classification: UMC (Upper-Middle Income Countries): Algeria, Azerbaijan, Botswana, China, Ecuador, Fiji, Georgia, Grenada, Mongolia, Moldova, Tonga, and Tuvalu; LMC (Lower-Middle Income Countries): Benin, Cambodia, Comoros, Eswatini, Kiribati, Kyrgyz Republic, Lebanon, Lesotho, Morocco, Samoa, São Tomé and Príncipe, Solomon Islands, Sri Lanka, Tanzania, Timor-Leste, Vanuatu, and Zambia; LIC (Low-Income

Countries): Afghanistan, Central African Republic, Eritrea, Ethiopia, Gambia, Kuwait, Liberia, Rwanda, Syrian Arab Republic, Togo, and Uganda.

- The impoverished population is defined as population lived in the households that fall into the lowest quintile of wealth, based on the distribution of household wealth into five quintiles.

Figure A3. Control rate of diabetes among the diagnosed population in the poorest wealth quintile across 30 low- and middle-income countries, stratified by World Bank country income level



Data source: Data for China were sourced from the National Dynamic Monitoring System for Preventing Return to Poverty due to Illness, whereas data for the other 29 countries were obtained from the World Health Organization (WHO) STEPwise Approach to Noncommunicable Disease (NCD) Risk Factor Surveillance (STEPS).

Note:

- Diabetes controlled is defined as a diagnosed individual's blood glucose measurement throughout a given year consistently falling below 7.0 mmol/L.
- The control rate of diabetes is calculated as the number of cases with controlled diabetes divided by the number of diagnosed cases that had at least one recorded blood glucose measurement.
- We included a total of 30 countries in this analysis, categorizing them into three income levels based on the World Bank classification: UMC (Upper-Middle Income Countries): Algeria, Botswana, China, Ecuador, Georgia, Mongolia, and Moldova; LMC (Lower-Middle Income Countries): Benin, Cambodia, Comoros, Eswatini, Kiribati, Lebanon, Lesotho, Morocco, São Tomé and Príncipe, Solomon Islands, Sri Lanka, Tanzania, and Zambia; LIC (Low-Income Countries): Afghanistan, Central African Republic, Eritrea, Ethiopia, Kuwait, Liberia, Rwanda, Syrian Arab Republic, Togo, and Uganda.

- The impoverished population is defined as population lived in the households that fall into the lowest quintile of wealth, based on the distribution of household wealth into five quintile.

Panel A1. The National Compulsory Service Programme in China

Panel A1: The National Compulsory Service Programme in China

To alleviate the shortage of qualified doctors in rural areas, the Chinese government launched a National Compulsory Service Programme (NCSP) in the year of 2010 to recruit medical students for township health centres in the central and western China.[78]

The contents of NCSP[74]

- The students are enrolled via National College Entrance Examination, and those with rural origin are given priorities in admissions.
- Admitted students sign a contract with the medical college and the local health authorities at the county level.
- The central government covers the tuition and accommodation fees for NCSP students (8 000 RMB per capita per year)
- After a five-year undergraduate medical education and a three-year standardized residency training, doctors under the NCSP have the obligation to work in designated township health centres for three years.
- Those who breach the contract should refund the waived fee and compensate for the liquidated damage, and the breach will be recorded in the physician's personal credit record.

Current situation of NCSP

- From 2010 to 2023, about 80 thousand students in total were admitted to medical schools under NCSP.
- At present, NCSP graduates makes more than 10% of the total general practitioners at township health centres in China.[80]
- A national survey showed that 86% of the enrollers had a rural background and 30% were from impoverished areas.

- The feedback from the township health centres were positive, as 68% of township health centre leaders reported that NCSP doctors were helpful in promoting quality of care, and NCSP doctors were rated more helpful in remote areas.[79]
- The proportion of NCSP doctors who intended to continue working at township health centres after completing their contractual term was only 12%.[74] The government has adopted a pragmatic approach, allowing NCSP doctors to leave once they have fulfilled their service obligations. Most of them subsequently transitioned to county-level hospitals, where they continued to serve the same rural populations. Over time, the NCSP has become institutionalized in China, with new cohorts of NCSP doctors recruited annually to fill vacancies, thereby maintaining a dynamic balance in service provision. Recently, the government extended the compulsory service period from three to six years. Nevertheless, additional incentives are recommended to strengthen retention at the township level.

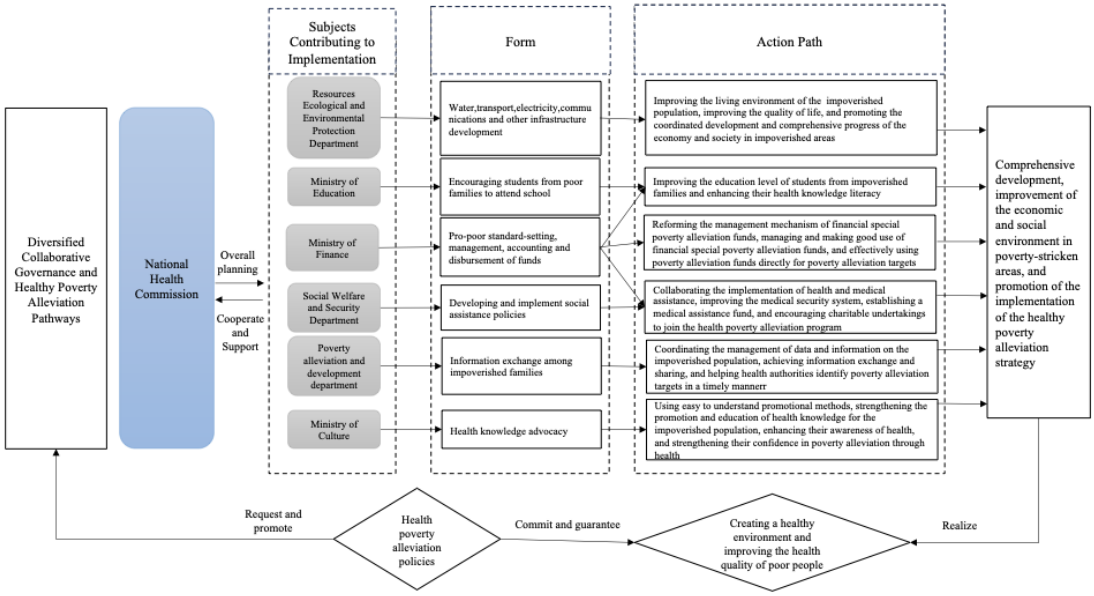
The impact of NCSP

The program has succeeded in several respects, such as reforming medical education, improving the quality of primary care practice in rural areas, strengthening general practice residencies, and accelerating the collaboration between education sectors and health sectors. All of these achievements contribute to the long-term development of primary health care and universal health coverage in China in the long run.

Table A1 The content of financial protection

Schemes	Funding resource	Benefits for impoverished population
Urban and Rural Residents Basic Medical Insurance (URRBMI)	Individual payment + government subsidy	Lower the co-payment threshold, increase the reimbursement rates, expand insurance coverage (diseases, medicines), and reduce or waive individual insurance premiums
Catastrophic Insurance (CI)	Government subsidy	Half the deductible, increase the reimbursement rate by an additional 5 percentage points, and remove the reimbursement cap
Medical Financial Assistance (MFA)	Government subsidy+ lottery welfare fund + donations from society and individuals.	No or low deductible, high reimbursement rate
Local Government Financial Support	Financial funds	Purchase supplementary commercial insurance, or allocate local financial funds

Figure A4. Pathway of multiple sectors in health and poverty alleviation



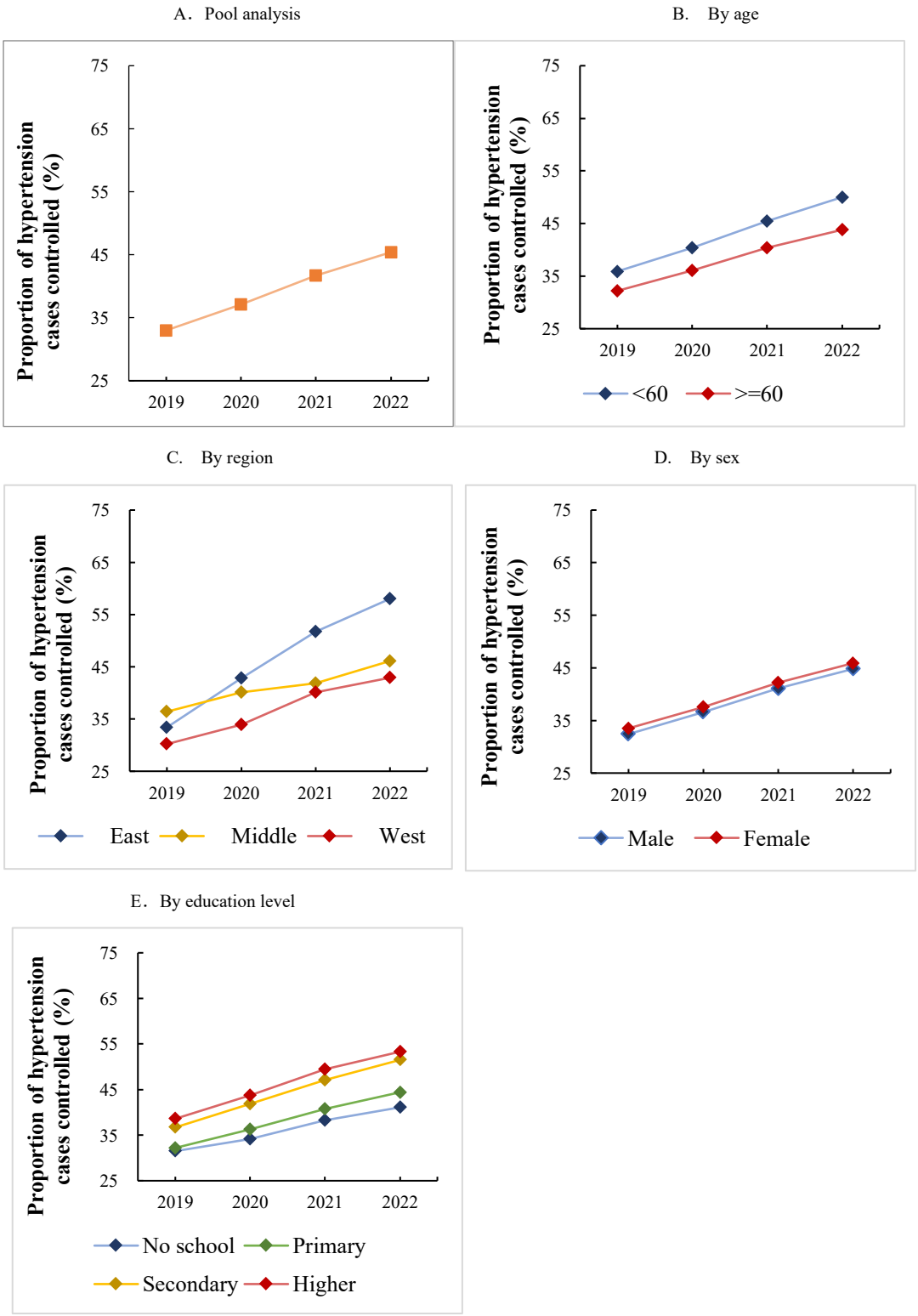
Panel A2. An example of a multisectoral collaboration in health and poverty alleviation observed at county level in Guangxi Province

The case of Bama County in Guangxi Province serves as an illustration of how a multisectoral approach was effectively implemented at the local level.[123] The county health commission led a joint effort with the Departments of Human Resources and Social Security, Civil Affairs, Poverty Alleviation Office, and other multi-disciplinary entities. This inter-agency task force was not just a formality; it actively leveraged political will to secure dedicated poverty alleviation funds.

This collaboration was crucial for addressing the social determinants of health. By integrating health interventions with social welfare and employment assistance, the program went beyond treating disease to proactively addressing the root causes of poor health and poverty. Bama strengthened its service delivery system through 12 county-level medical consortia, 8 specialist alliances, and more than 100 medical teams covering all 10 townships.[124] Collaboration also extended beyond the health sector, with schools, civil affairs and community organizations jointly advancing health education and environmental improvements.

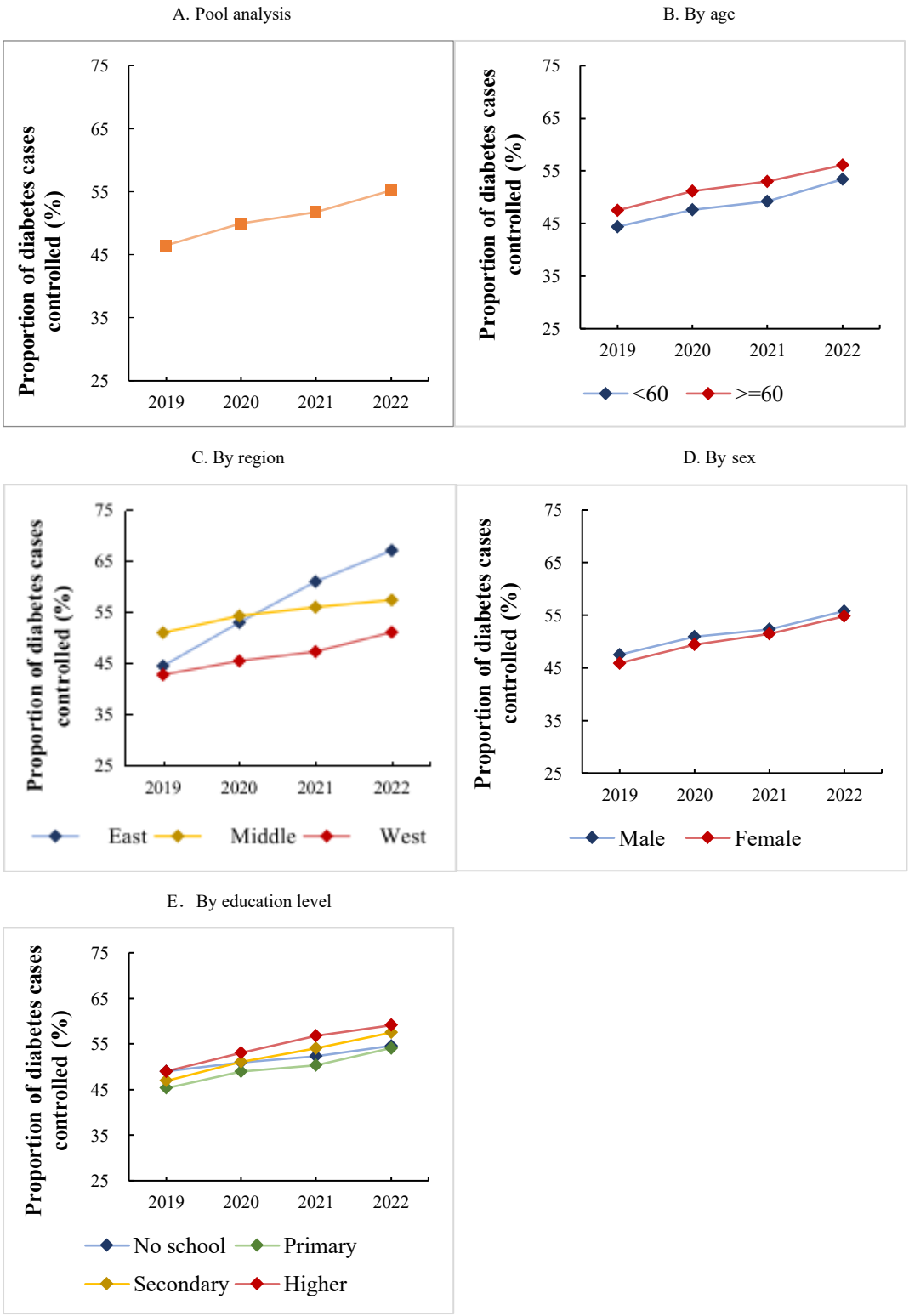
The result was a tangible outcome: impoverished populations were guaranteed access to "green channel" preferential policies, which streamlined healthcare access and reduced financial barriers to care. This Bama County model represents a best practice because it illustrateded how horizontal integration cancan ensure healthcare access and facilitate poverty reduction through health interventions.

Figure A5. Subgroup analysis of proportion of hypertension cases controlled between 2019 and 2022



Data source: National Dynamic Monitoring System for Preventing Return to Poverty due to Illness

Figure A6. Subgroup analysis of proportion of diabetes cases controlled diabetes between 2019 and 2022



Data source: National Dynamic Monitoring System for Preventing Return to Poverty due to Illness

Text. Methodology of difference in difference (DID)

Survey data from China Family Panel Studies (CFPS) and China Health and Retirement Longitudinal Study (CHARLS) were used, both of which were nationality representative containing individual-level information on safe water access, sanitation, housing condition and basic socio-demographics. The effect of policy package implemented during the Health and Poverty Alleviation Program was estimated using econometric analysis based on difference-in-differences (DID) model.

As the program was targeted at poverty alleviation, individual officially registered poor household (Jiandanglika Pinkunhu) was classified as impoverished (treatment group), and otherwise non-impoverished (control group). The exogenous policy shock was assumed to came into effect in 2015, thusly survey data collected before year 2015 was treated as before-intervention, and data collected after year 2015 was treated as after-intervention. The regression model was in the form of

$$y_{it} = \gamma_i + \lambda_t + \alpha X_{it} + \beta_0 PostPolicy + \beta_1 PovertyStatus + \beta_2 PostPolicy * PovertyStatus + \epsilon_{it}$$

The dependent variable relates to the survey item of interest, for example, y takes 1 if individual has access to clean water and 0 otherwise. Post Policy is a dummy variable of 0 for before-intervention and 1 for after-intervention. Poverty Status is also a dummy variable of 1 for individuals classified as impoverished and 0 for non-impoverished. X_{it} is the vector of covariates, including age, gender, education and employment status. γ_i is the individual-level fixed effect, and λ_t is time fixed effect. The β_2 is the difference-in-difference coefficient, which measures the causal impact of policy implementation on the dependent variable. The standard error was clustered at the individual level.

The two-way fixed effect model utilizes the panel data structure to control confounding factors that change over time but fixed on individuals, and factors that change with individuals but fixed over time. The econometric model could be interpreted as a linear probability model. For example, when examining the policy effect on safe water, the β_2 could be interpreted as the increase of likelihood of having access to tapped/clean water.

In this analysis, we used all five rounds of CHARLS data from 2011 to 2020. We excluded individuals who were not interviewed in each wave. Furthermore, we excluded respondents with missing data on key variables, including poverty status, access to tapped water, flushable toilets and access to improved housing. The final sample consisted of 10,618 individuals, of whom approximately 8.27% were classified as impoverished.

Table A2. Effects of Health and Poverty Alleviation Initiative on access to tapped water from the difference-in-difference regression models

	Model 1			Model 2			Model 3		
Access to tapped water	Coefficient	95%CI Lower Bound	95%CI Upper Bound	Coefficient	95%CI Lower Bound	95%CI Upper Bound	Coefficient	95%CI Lower Bound	95%CI Upper Bound
Post Policy	16.5	15.8	17.1	15.9	15.1	16.6	16.0	15.2	16.9
Post Policy * Poverty Status	10.0	7.1	13.0	9.7	6.8	12.7	9.9	6.6	13.1
Demographics	×			✓			✓		
Socioeconomics characteristics	×			×			✓		
Individual Fixed Effect	✓			✓			✓		
Time Fixed Effect	✓			✓			✓		

Data source: China Health and Retirement Longitudinal Study (CHARLS), 2011-2020

Note:

Access to tapped water is a dummy variable which is directly identified by the question “Is there tapped water in your house?”. The variable is assigned a value of 1 if the answer is yes and 0 otherwise.

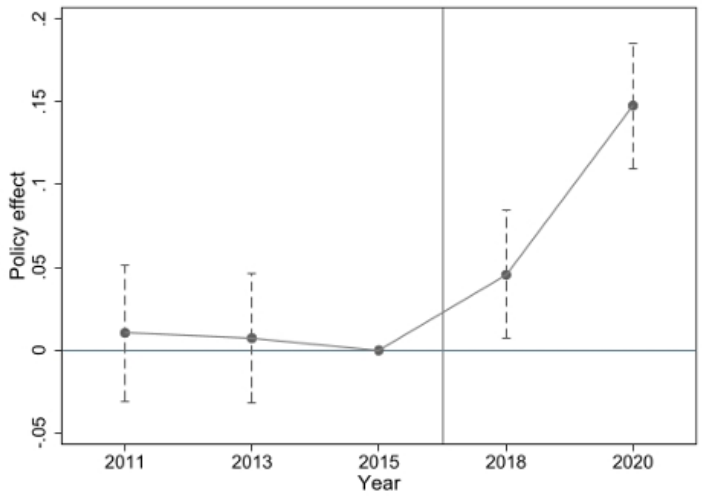
Individuals who answered “yes” to the question: “Is your household a registered poor household?” were classified as impoverished (treatment group) and assigned a value of 1. Those who answered 'no' were classified as non-impoverished (control group) and assigned a value of 0.

All standard errors were clustered at the individual level.

Demographics refer to age, gender, education and employment status. Socioeconomic characteristics included annual consumption expenditure [ln-transformed], and residence type.

The coefficient of Post Policy is estimated in a separate regression without time fixed effect.

Figure A7. Effect of Health and Poverty Alleviation Initiative on access to tapped water



Data source: China Health and Retirement Longitudinal Study (CHARLS), 2011-2020

Note:

All covariates (age, gender, education, employment status, annual consumption expenditure [ln-transformed] and residence type) were contained in the model.

Table A3. Difference-in-difference regression results for access to clean water

	Model 1			Model 2			Model 3		
Access to clean water	Coefficient	95%CI Lower Bound	95%CI Upper Bound	Coefficient	95%CI Lower Bound	95%CI Upper Bound	Coefficient	95%CI Lower Bound	95%CI Upper Bound
Post Policy	2.5	2.1	2.8	2.4	2.1	2.8	0.1	-3.5	3.6
Post Policy * Poverty Status	2.1	0.9	3.2	2.1	0.9	3.3	1.5	-0.2	5.5
Demographics	×			✓			✓		
Socioeconomics				×			✓		
Individual Fixed Effect	✓			✓			✓		
Time Fixed Effect	✓			✓			✓		

Data source: China Family Panel Studies (CFPS), 2014-2020

Note:

Access to clean water is a dummy variable which is identified by the question: "what is the primary water source for cooking at your residence?". The variable is assigned a value of 1 if the reported water source is well water, tapped water or purified/filtered/bottled water. It is assigned a value of 0 if the reported water source is river, lake, pond, spring or rainwater.

Impoverished population was classified by the national poverty line of CNY ¥2300 per person per year at 2010 prices and modified each year based on inflation rate.

All standard errors were clustered at the individual level.

Demographics refer to age, gender, education and employment status. Socioeconomic characteristics included annual consumption expenditure [ln-transformed], and residence type.

The coefficient of Post Policy is estimated in a separate regression without time fixed effect.

Table A4. Effects of Health and Poverty Alleviation Initiative on access to flushable toilet from the difference-in-difference regression models

	Model 1			Model 2			Model 3		
Access to flushable toilet	Coefficient	95%CI Lower Bound	95%CI Upper Bound	Coefficient	95%CI Lower Bound	95%CI Upper Bound	Coefficient	95%CI Lower Bound	95%CI Upper Bound
Post Policy	19.9	19.1	20.6	19.0	18.2	19.8	15.6	14.7	16.6
Post Policy * Poverty Status	7.8	4.9	10.7	8.0	5.1	10.9	10.2	7.00	13.4
Demographics	×			✓			✓		
Socioeconomics characteristics	×			×			✓		
Individual Fixed Effect	✓			✓			✓		
Time Fixed Effect	✓			✓			✓		

Data source: China Health and Retirement Longitudinal Study (CHARLS), 2011-2020

Note:

Access to flushable toilet is a dummy variable which is directly identified by the question "whether have flushable toilet in residence?". The variable is assigned a value of 1 if the answer is yes and 0 otherwise.

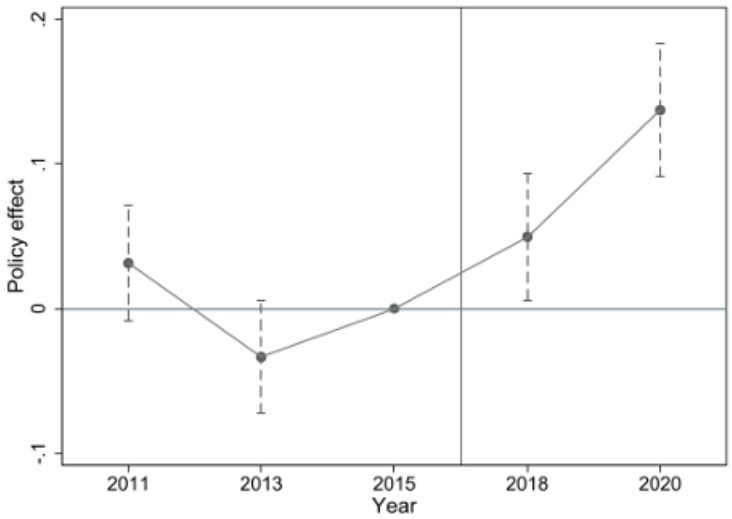
Individuals who answered "yes" to the question: "Is your household a registered poor household?" were classified as impoverished (treatment group) and assigned a value of 1. Those who answered "no" were classified as non-impoverished (control group) and assigned a value of 0.

All standard errors were clustered at the individual level.

Demographics refer to age, gender, education and employment status. Socioeconomic characteristics included annual consumption expenditure [ln-transformed], and residence type.

The coefficient of Post Policy is estimated in a separate regression without time fixed effect.

Figure A8. Effect of Health and Poverty Alleviation Initiative on access to flushable toilet

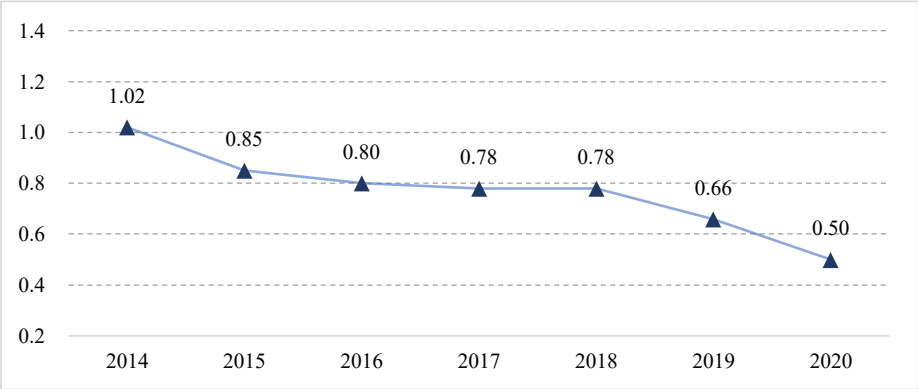


Data source: China Health and Retirement Longitudinal Study (CHARLS), 2011-2020

Note:

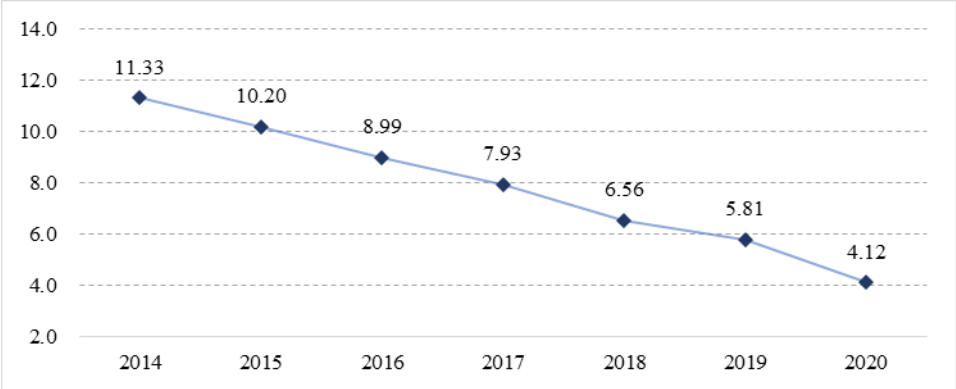
All covariates (age, gender, education, employment status, annual consumption expenditure [ln-transformed] and residence type) were contained in the model.

Figure A9. Total incidence of Typhoid and paratyphoid fever in China per 100,000 people: 2014-2020



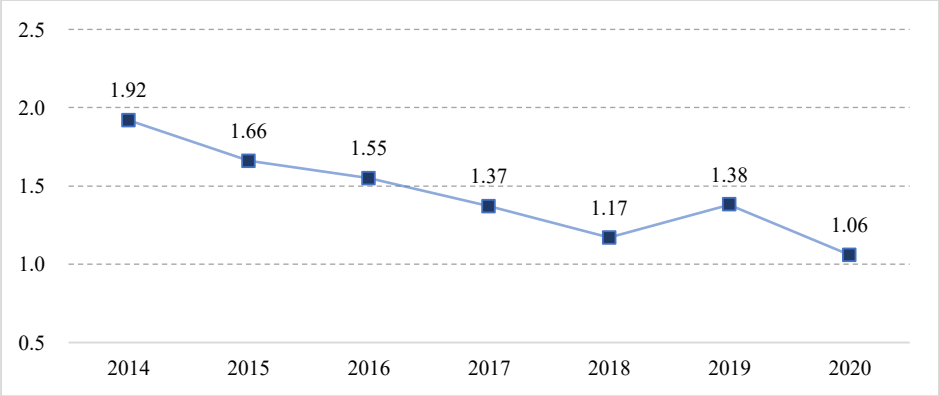
Data source: Data for 2014–2018 were obtained from the National Health and Family Planning Statistical Yearbook, and data for 2019–2020 were obtained from the China Health Statistical Yearbook

Figure A10. Total incidence of dysentery in China per 100,000 people: 2014-2020



Data source: Data for 2014–2018 were obtained from the National Health and Family Planning Statistical Yearbook, and data for 2019–2020 were obtained from the China Health Statistical Yearbook

Figure A11. Total incidence of hepatitis A in China per 100,000 people: 2014-2020



Data source: Data for 2014–2018 were obtained from the National Health and Family Planning Statistical Yearbook, and data for 2019–2020 were obtained from the China Health Statistical Yearbook

Table A5. Effects of Health and Poverty Alleviation Initiative on access to improved housing from the difference-in-difference regression models

	Model 1			Model 2			Model 3		
Access to improved housing	Coefficient	95%CI Lower Bound	95%CI Upper Bound	Coefficient	95%CI Lower Bound	95%CI Upper Bound	Coefficient	95%CI Lower Bound	95%CI Upper Bound
Post Policy	16.3	15.5	17.0	16.0	15.2	16.9	14.3	13.8	15.3
Post Policy * Poverty Status	6.5	3.7	9.3	6.3	3.5	9.1	8.2	5.1	11.3
Demographics	×			✓			✓		
Socioeconomics characteristic	×			×			✓		
Individual Fixed Effect	✓			✓			✓		
Time Fixed Effect	✓			✓			✓		

Data source: China Health and Retirement Longitudinal Study (CHARLS), 2011-2020

Notes:

The improved housing is a dummy variable which is assigned a value of 1, if the house has a kitchen, residential toilet and tapped water, If there is no kitchen, or residential toilet, or tapped water in the house, the variable is assigned a value of 0.

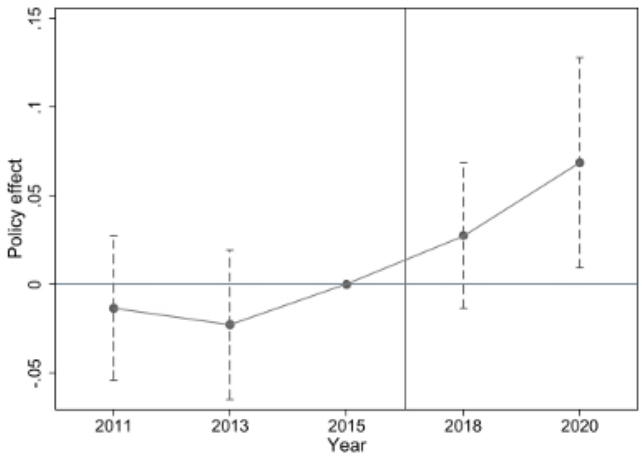
Individuals who answered 'yes' to the question: “Is your household a registered poor household?” were classified as impoverished (treatment group) and assigned a value of 1. Those who answered 'no' were classified as non-impoverished (control group) and assigned a value of 0.

All standard errors were clustered at the individual level.

Demographics refer to age, gender, education and employment status. Socioeconomic characteristics included annual consumption expenditure [ln-transformed], and residence type.

The coefficient of Post Policy is estimated in a separate regression without time fixed effect.

Figure A12. Effect of Health and Poverty Alleviation Program on access to improved housing



Data source: China Health and Retirement Longitudinal Study (CHARLS), 2011-2020

Note:

All covariates (age, gender, education, employment status, annual consumption expenditure [ln-transformed] and residence type) were contained in the model.

Table A6. Under-5 Mortality Rate by Region between 2000 and 2020 (‰)

	Eastern region	Middle region	Western region	Absolute difference between Western and Eastern regions
2000	18.3	39.1	60.8	42.5
2010	9.7	14.8	21.1	11.4
2018	4.2	7.2	12.7	8.5
2020	4.1	6.6	10.6	6.5

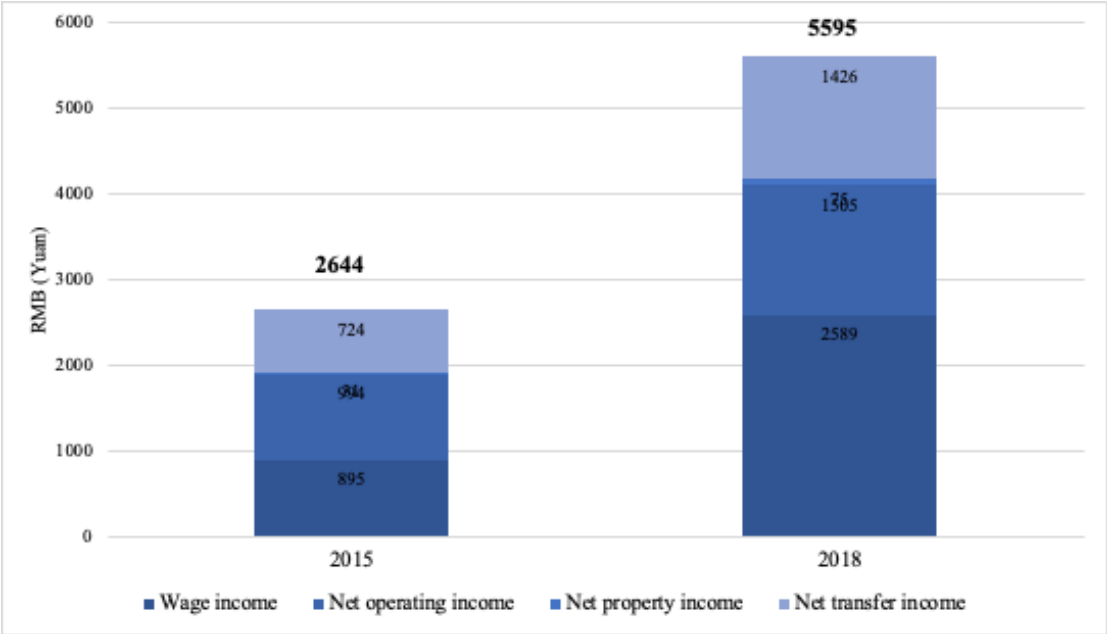
Data sources: China Maternal and Child Health Development Report (2011); China Maternal and Child Health Development Report (2019); Final Statistical Monitoring Report of the China National Program for Child Development (2011–2020).

Table A7. Reasons for relocation among the registered poor population during the 13th Five-Year Plan period (2016–2020)

	Registered population to be relocated	
	Number of population (10,000 persons)	Proportion (%)
Total	981	100
Areas with severely limited access to public services	340	34.7
Areas with limited resources and environmental carrying capacity	316	32.2
Natural reservation areas or areas with high ecological vulnerability	157	16.0
Areas with frequent geological disasters	106	10.8
Areas with the high incidence of local diseases	8	0.8
Other areas	54	5.5

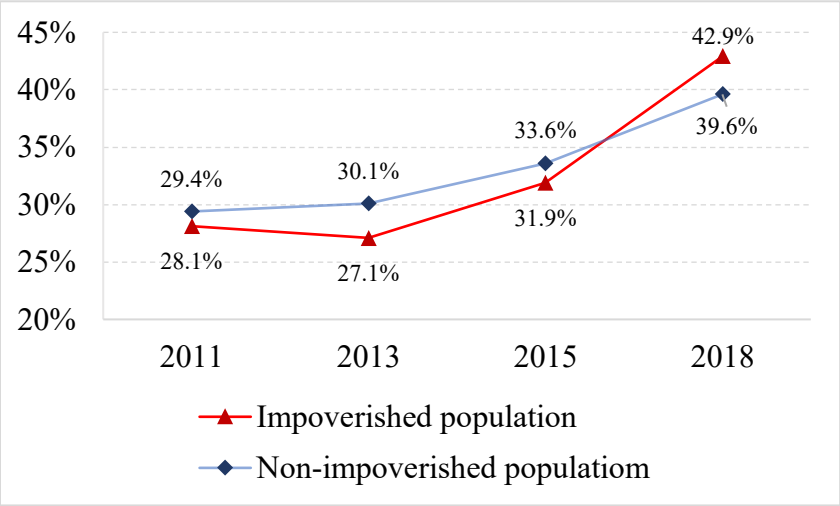
Data source: National Plan for Relocation for Poverty Alleviation during the 13th Five-Year Plan Period (2016–2020)

Figure A13. Per capita disposable income of relocated households, year 2015 Vs. year 2018



Data source: Wang, L., Wei, H., & Xie, F. (2021). Poverty reduction in China: Achievements, experience and international cooperation. Beijing: Social Sciences Literature Publishing House. Retrieved from https://www.jianpincn.com/skwx_jp/BookDetail.aspx?ID=2408 (Accessed on March 18th, 2026)

Figure A14. Prevalence of self-reported hypertension by poverty status (over 45 years old)



Data source: China Health and Retirement Longitudinal Study (CHARLS)

Note:

Hypertension is defined as an individual's blood pressure measurements throughout a given year consistently falling within the normal blood pressure range of 140 mm Hg /90 mm Hg.

Self-reported hypertension data were gathered through participants' responses to the question, "have you been diagnosed with any chronic disease by a doctor in the past 6 months?". Participants specifically mentioning "hypertension" in the answer were defined as having the condition.

Prevalence of self-reported hypertension was calculated as the number of participants self-reported having hypertension divided by the total number of participants in each survey wave.

Impoverished population was classified by the national poverty line of CNY ¥2300 per person per year at 2010 prices and modified each year based on inflation rate.

Table A8. Recommendations, responsible actors, and actions

Recommendation	Responsible Actor(s)	Role/Action
Ensure long-term financial sustainability of the Health and Poverty Alleviation Program	Ministry of Finance; National Healthcare Security Administration (NHSA)	Secure stable funding sources; integrate health poverty programs into the national health insurance system
Strengthen equity in access and outcomes across regions and groups	National Health Commission (NHC); Provincial Health Commissions	Increase subsidies to underdeveloped regions; expand coverage for vulnerable groups (e.g., elderly, ethnic minorities)
Reduce non-financial barriers (cultural, human resource shortages)	Local governments; medical universities; township and village health workers	Expand rural health workforce training; strengthen primary care infrastructure; promote culturally sensitive health communication
Improve monitoring and data systems	National Bureau of Statistics; NHC; China Population and Development Research Center (CPDRC)	Collect disaggregated data; evaluate long-term outcomes of relocation and other programs
Address rising NCDs and population aging	NHC; Local governments	Scale up chronic disease management in primary care; integrate medical and elderly care services
Adapt to declining fertility and shifting demographics	Central Government; National Development and Reform Commission (NDRC)	Align health and social policies with shrinking labor force and changing dependency ratios
Mitigate health risks from climate change	Ministry of Ecology and Environment; Health authorities	Strengthen heatwave/air pollution early warning systems; enhance rural water and sanitation resilience
Build preparedness for pandemics	NHC; China CDC	Invest in disease surveillance; improve emergency response and health workforce surge capacity
Use technology to reduce health inequalities	Ministry of Science and Technology; private tech companies	Expand telemedicine; ensure equitable access to digital health tools in rural areas

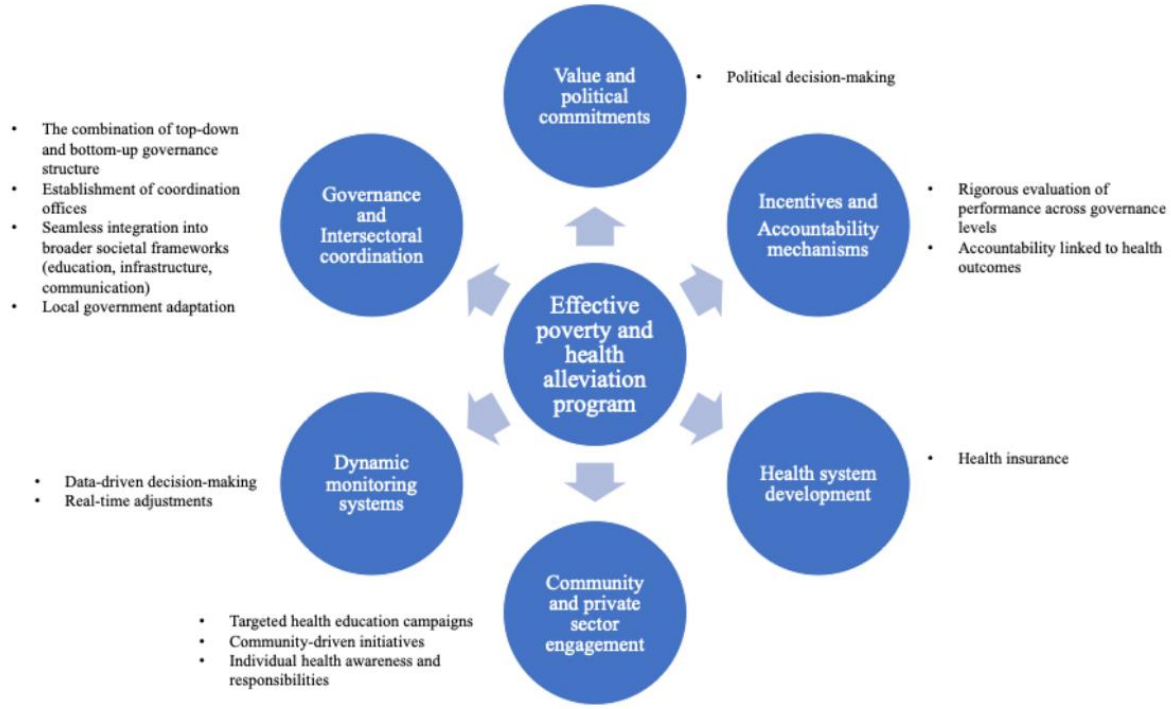



Figure A15. Key enables for poverty and health alleviation initiative