From Medical Empire to Winter: Revelations of Japan's 30-Year Healthcare Reform

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ABSTRACT

During its economic boom in the 1990s, Japan established a government-subsidized medical security system, a model that proved unsustainable amid a rapidly shifting population structure. Faced with the dual pressures of economic transformation and an aging society, the Japanese government was compelled to re-examine its medical policy, shifting its focus from the expansion and enhancement of medical services to the control of costs in order to maintain the sustainability of the health insurance system. This reform established a tightly controlled closed-loop system defined by government pricing, hospital implementation, and pharmaceutical supply. Within this framework, pharmaceutical companies bore the brunt of the policy's financial burden. The eventual outcome was a fiscal surplus achieved at the expense of significant regression in both the pharmaceutical industry and medical services. Japan's thirty-year medical reform demonstrates that system design must fully account for the interests and demands of all stakeholders and establish a mechanism for dynamic equilibrium to ensure sustainable development. A thorough examination of Japan's reform experience and lessons, in light of China's own national conditions, holds considerable relevance for China today.

Keywords: medical reform, economy, pharmaceutical companies, medical disputes

Introduction: The Dramatic Shift from a Pharmaceutical Empire to an Industry Winter

In the 1990s, Japan, once a pharmaceutical powerhouse, reached a major economic turning point. The nation's prolonged economic bubble burst definitively in 1991, plunging the economy into a protracted stagnation known as the "Lost Three Decades." This depression was not an isolated backdrop but the essential context for a major reform to control national health insurance costs. The collapse caused a sharp decline in fiscal revenue, which made it increasingly difficult to sustain previous levels of healthcare subsidy. Concurrently, a rapidly aging population intensified medical demand, driving insurance expenditures higher and compounding the financial strain. The affordable healthcare system, long dependent on government subsidies, became unsustainable under these combined economic pressures. Consequently, the health insurance deficit widened, threatening the stability of the entire social security system. Faced with this crisis, controlling medical insurance costs became a necessary, if reluctant, government action to alleviate fiscal pressure and maintain the system's operation.

This article analyzes the background, policy measures, and multi-level impact of Japan's major medical insurance cost-containment reform on its healthcare industry. A systematic examination of this historical event clarifies the complex relationship between health insurance policy and healthcare sector development. The findings offer valuable experience, lessons, and insights for shaping China's health policies and pharmaceutical industry development.

Thirty Years of Changes in Japanese Healthcare

In the 1970s, Japan's rapidly growing economy enabled the establishment of a medical system founded on substantial fiscal subsidies. Under this framework, government finance provided crucial support, with subsidies at their peak constituting up to 40% of medical insurance revenue. This policy proved highly effective. It allowed the public to access high-quality medical care at low cost, thereby elevating national health standards and quality of life. Concurrently, it secured relatively ample funding for pharmaceutical companies, which stimulated innovation and R&D activity and accelerated the development of the domestic pharmaceutical industry. During this period, Japan's medical technology advanced steadily, yielding numerous achievements in new drug development and elevating its pharmaceutical sector to global prominence.

In the 1980s, Japan's pharmaceutical industry was a prominent force globally. The nation accounted for 29% of the world's annual output of new drugs, securing its position as the world's second-largest pharmaceutical power and establishing an industry second only to that of the United States[1]. This preeminence was built upon robust scientific research capabilities, a comprehensive industrial system, and substantial financial investment. Japan's pharmaceutical sector achieved broad development, spanning chemical and biological drugs as well as medical devices and services. It successfully met domestic medical demands while also exporting extensively to secure a significant share of the international market.

In the early 1990s, Japan's economic bubble burst, plunging the nation into a prolonged recession. A wave of reforms focused on controlling medical insurance costs subsequently swept through the country, triggering a sharp downturn in the domestic pharmaceutical industry. This period of unprecedented difficulty, later termed the "Winter of Medicine," saw the rapid collapse

of a once-dominant pharmaceutical sector. The industry suffered severe damage, characterized by widespread corporate bankruptcies, frequent drug quality crises, and a virtual halt in new drug development. A pervasive sense of crisis enveloped the entire healthcare landscape. Sharply declining fiscal revenues, a consequence of the economic collapse, drastically reduced the government's available funds for medical subsidies. Concurrently, Japan's demographic aging accelerated, with the country formally entering a super-aged society in 1994 and its elderly population proportion continuing to climb. This demographic shift produced a surge in medical demand, causing medical insurance expenditures to grow rapidly. Squeezed by both economic stagnation and population aging, the financial foundation of the medical insurance system became unstable, and its deficit expanded dramatically. In 1993, Japan experienced a severe crisis in insurance payment disruptions, affecting as many as 1.2 million households[2]. That same year, the national medical insurance system recorded a deficit exceeding 100 billion yen for the first time. With the traditional model of fiscal support no longer sustainable, the medical insurance system confronted an unprecedented crisis.

Facing a severe medical insurance crisis, the Japanese government confronts a difficult policy choice. It must ensure the public retains access to affordable medical care, a cornerstone of social stability and public welfare that cannot be readily abandoned. Simultaneously, the government must guarantee hospitals can operate normally to maintain the supply of medical services, as a failure to do so would trigger more serious societal problems. Constrained by the dual imperatives of safeguarding public welfare and ensuring hospital viability, the government has consequently directed its cost-containment efforts toward the pharmaceutical sector.

It is inevitable that the pharmaceutical sector will become the primary target for cost control for several reasons. First, as the largest purchaser in the industry, Japan's health insurance system

holds direct pricing power over drugs, granting the government strong operational capacity to implement cost-control policies. In contrast, making substantial adjustments to hospital operating expenses or patient co-payment ratios would encounter far greater resistance. Second, within the medical insurance expenditure structure of that period, drug spending accounted for a relatively high proportion, representing approximately 30% of total insurance expenditure in 1990[3]. Controlling drug costs could therefore exert a significant short-term impact on overall insurance outlays and effectively alleviate deficit pressures. Finally, from a social stability perspective, reducing drug expenditures carries a lower risk of triggering social conflict compared to raising patient co-payments or cutting hospital budgets. Increasing out-of-pocket costs could push many people back into poverty due to illness and intensify social tensions, while reducing hospital operating expenses might degrade service quality and even risk destabilizing the healthcare system.

In 1991, Japan's Ministry of Health, Labour and Welfare introduced the "Tiered Price Reduction Reform," mandating biennial price cuts for all drugs. This policy acted as a powerful catalyst, initiating undifferentiated cost control within Japan's national health insurance system. It became a crucial turning point for the nation's medical industry, exerting a lasting impact on the entire pharmaceutical sector.

The Two-stage Impact of Cost Control Policies: From Price Strangling to Industrial Ecosystem Destruction

Phase One: Profit Strangulation Triggered by Drug Price Control (1991-1993)

In 1991, Japan's Ministry of Health, Labour and Welfare initiated a "tiered price reduction reform," marking a first major shift in medical insurance cost containment policy. The policy mandated a compulsory price reduction for all drugs every two years, irrespective of their research and development costs. This seemingly straightforward measure provoked considerable upheaval within the pharmaceutical industry.

During the initial phase of the policy's implementation, the reduction in drug prices was broadly welcomed across society. The public anticipated that lower prices would alleviate the burden of healthcare costs, while the government aimed to mitigate the pressure on the medical insurance deficit. The subsequent price reductions, however, far exceeded expectations. Throughout the 1990s, the average decline in drug prices across Japan surpassed 45%, a remarkable figure. This substantial and rapid price compression severely eroded pharmaceutical companies' profit margins.

From 1991 to 1994, the profit margin of the Japanese pharmaceutical industry fell sharply. The industry-wide margin plummeted from 15% to 5.8%, reflecting a severe decline in corporate profitability that pushed many firms toward losses[1]. For innovative drug companies, conditions were even more severe, with margins falling below 10%. Developing innovative drugs demands substantial capital, as the process from discovery through clinical trials to market approval often spans years or decades and requires investments of billions or even tens of billions of dollars. Such thin margins cannot support the sustained high-cost R&D activities of these firms, thereby

breaching the fundamental financial threshold required for pharmaceutical innovation.

Compounding these challenges, the 1990s represented a pivotal global transition for the pharmaceutical industry from chemical to biological drugs. Emerging fields like gene therapy and monoclonal antibodies demonstrated significant potential during this period, becoming major competitive foci for international firms. Japan's investment in new drug research and development, however, experienced negative growth. By 1995, the R&D intensity—measured as R&D investment relative to revenue—of Japanese pharmaceutical companies had fallen to 3.2%, a stark contrast to the 15% seen in the United States. This underinvestment directly slowed Japan's progress in cutting-edge areas such as gene therapy and monoclonal antibodies, leaving it behind the international frontier. Consequently, Japanese firms missed a crucial period of growth in biopharmaceuticals, which seeded the broader decline of the sector by 2000.

Phase Two: Malignant Internal Competition Triggered by Generic Drug Substitution (1993-2000)

In 1993, the Japanese economy returned to negative growth, triggering widespread unemployment and a large-scale disruption of medical insurance payments nationwide. For the first time, the national medical insurance system recorded a deficit exceeding 100 billion yen. Confronted with this escalating crisis, the government recognized that simply reducing drug prices was insufficient to address the substantial shortfall. Consequently, following the "21st Century Development Seminar," it implemented a more aggressive generic drug substitution strategy. This initiative marked the entry of medical insurance cost control into its second phase.

This policy mandates that hospitals prioritize low-cost generic drugs to further control medical insurance expenditures through reduced procurement costs. Following its

implementation, the proportion of generic drugs in the Japanese medical market increased rapidly. By 1998, generic drug usage had risen sharply from 12% in 1990 to 35%, successfully lowering the proportion of drug expenditure within medical insurance to 18%[4]. These data suggest the policy achieved notable results, controlling the medical insurance deficit to a considerable degree.

However, the apparent figures obscure a deterioration in the broader pharmaceutical industry ecosystem. The relatively low technical and entry barriers for generic drugs, combined with policy incentives, prompted a large number of firms to shift toward generic production. This environment of low-price competition transformed Japan's already large base of pharmaceutical companies—over 1,500 in 1990—into a foundation for intense internal rivalry. To capture limited market share, many firms engaged in fierce price wars, driving generic drug prices and profit margins steadily downward. Within this fierce competition, approximately 30% of enterprises ultimately failed, unable to withstand the resulting cost pressures[5].

To survive, many remaining firms have abandoned innovative drug development to focus their resources on generic drug production. Innovative drug research and development entails long timelines, high costs, and substantial risks. Given the intense price competition in the generic drug market, companies struggle to generate sufficient profits to fund innovative R&D. While this short-sighted approach may ensure short-term survival, it ultimately erodes the innovation capacity and international competitiveness of Japan's pharmaceutical industry.

The "Green Cross AIDS Drug Harm Incident" of 1996 fully exposed to the public the quality crisis precipitated by generic drug substitution strategies. In a cost-cutting measure, the Green Cross Company employed non-inactivated blood plasma in manufacturing its blood products, which led to 1,439 HIV infections and 648 deaths. This national scandal generated

profound societal concern and alarm over drug quality, eroding public trust in the Japanese pharmaceutical industry to a historic low. The incident reflects not simply the moral and quality failures of a single company, but the inevitable consequence of an industry-wide overemphasis on low cost at the expense of quality. It shattered the long-established foundation of trust in Japanese pharmaceuticals, plunging the sector into a more severe crisis.

Chain Reactions in the Medical System: From Industrial Collapse to Systemic Crisis

Imbalance in the allocation of medical resources and decline in service quality

Japan's major medical insurance cost control policy has significantly impacted its healthcare system, with the maldistribution of medical resources and declining service quality representing particularly acute issues. Following the withdrawal of numerous pharmaceutical companies from the market, drug supply shortages have intensified. In 1995, 634 of Japan's 8,127 hospitals closed, 70% of which provided obstetrics, gynecology, or pediatric care. This figure is alarming and directly demonstrates the severe depletion of medical resources in these critical specialties. As essential fields for safeguarding maternal, infant, and child health, obstetrics, gynecology, and pediatrics have experienced widespread hospital closures, leaving many pregnant women and children without accessible care and seriously jeopardizing the health and safety of these vulnerable populations[5].

In 1994, the death of a pregnant woman in Saitama Prefecture, after being refused admission by fourteen hospitals, became a landmark tragedy that exposed the imbalance in medical resource allocation and the decline in service quality during that period. The woman required urgent hospital care for complications near her delivery date. She contacted fourteen hospitals sequentially, yet each one refused her admission. These institutions offered various excuses to avoid responsibility, with some claiming all beds were occupied and others citing a lack of necessary equipment or specialized staff. Ultimately, she died after failing to receive timely treatment. This incident attracted widespread public attention and condemnation at the time, forcing a deeper public recognition of the severe consequences stemming from inequitable medical resource distribution. It was not merely an individual tragedy but a microcosm of a

medical system gradually losing control under stringent health insurance cost-containment policies, highlighting the predicament of hospitals that could no longer fulfill their basic duty of care under severe resource constraints.

Meanwhile, the proliferation of low-priced drugs has seriously compromised the quality of medical services. Driven by cost-control policies, hospitals have increasingly adopted these drugs to reduce expenditures. The quality of such drugs is highly variable, however, leading to significant fluctuations in clinical efficacy. To minimize production costs, manufacturers may use inferior raw materials or simplify processes, which can result in insufficient active ingredient content and diminished therapeutic effect. In Japan, reported adverse drug reactions surged from 2,032 to 16,478 between 1990 and 2000—an increase of nearly eightfold—directly illustrating the severity of drug quality issues. This rise in adverse reactions not only inflicts additional harm on patients but can also delay effective treatment and endanger lives. For example, some patients taking low-cost antibiotics experience poor infection control due to inadequate drug efficacy; their conditions then worsen, necessitating further treatment and hospitalization, which amplifies both the medical burden and patient suffering.

The hidden costs of the medical insurance system have soared

While the major medical insurance cost control policy has achieved some short-term results through measures such as drug price reductions and generic substitution, saving approximately 15 trillion yen in expenditures and alleviating deficit pressures, this apparent success conceals substantial hidden costs. Issues with drug quality and declining service standards are increasingly leading to problems like repeated treatments and poor complication management, which sharply inflate the system's hidden expenses. Many patients experience unsatisfactory treatment

outcomes due to inferior drugs and consequently require further medical interventions. These repeated treatments not only augment patient suffering and financial burden but also compel additional payments from the insurance fund. For some patients managing chronic conditions with low-cost generics, unstable drug efficacy and disease recurrence necessitate multiple clinic visits, diagnostic tests, and treatment plan adjustments. This process inevitably increases the waste of medical resources and raises insurance expenditures.

Drug quality issues can also precipitate complications. Inferior drugs may induce adverse reactions in patients, leading to further clinical complications. Treating these complications typically demands greater medical resources and higher costs, thereby increasing the burden on health insurance. According to 2000 statistics, the rise in medical expenditures attributable to drug quality issues offset 23% of that year's cost-containment gains[6]. Consequently, although the cost-control policies implemented to restrain insurance expenditures saved funds in the short term, they failed to achieve long-term sustainability due to the hidden cost increases from drug quality problems. Instead, these policies created a vicious cycle of "savings – quality decline – expenditure rebound." This cycle not only undermines the security function of the health insurance system but also threatens the stability and healthy development of the broader healthcare system.

The Art of Balancing Healthcare Reform under Policy Adjustments

Japan's experience with large-scale cost containment in medical insurance illustrates that sustainable development of the healthcare sector requires adherence to three key principles of balance during policy formulation and implementation.

First, a balance must be struck between short-term cost control and long-term industrial competitiveness; cost-containment policies should not focus solely on immediate savings at the expense of the pharmaceutical sector's future development. A tiered pricing system is central to achieving this equilibrium. For innovative drugs, a flexible price reduction strategy should account fully for their research and development costs and market value. During the patent period, these drugs should be permitted to maintain a reasonable profit margin, with a recommended rate of no less than 15%, thereby encouraging continued R&D investment and fostering medical innovation. The relatively higher prices during this phase help compensate firms for their initial investment and risk. As patents near expiration, drug prices should be gradually reduced to stimulate market competition and improve accessibility. This approach controls medical expenditures in the short term while safeguarding the industry's long-term competitiveness.

Second, price controls must be upgraded in tandem with strengthened quality supervision, as controlling prices alone can compromise drug quality—a lesson clearly demonstrated by Japan's experience. Consequently, implementing cost-control policies should coincide with rigorous quality oversight. A dynamic Good Manufacturing Practice (GMP) verification system should conduct regular inspections of pharmaceutical production processes to ensure consistent quality standards. An adverse reaction traceability system must also be established to enable the rapid identification of a drug's production batch and manufacturer when an adverse event occurs,

permitting timely intervention to safeguard patient safety. Furthermore, a dual-dimensional "price and quality" evaluation system should integrate both criteria into assessment, prioritizing procurement and insurance reimbursement for drugs that offer high quality at reasonable prices. This approach incentivizes pharmaceutical firms to maintain quality standards rather than engage in a race to the bottom on price.

Furthermore, the sustainability of medical insurance funds and the development of a diversified payment system require attention. During Japan's major cost-containment efforts, an overreliance on government pricing, without the counterbalance of diversified payment systems like commercial insurance, concentrated all cost-control pressure onto pharmaceutical companies and ultimately precipitated an industry crisis. To avoid a similar outcome, China could learn from the experience of countries such as Germany by actively fostering supplementary medical insurance. Such insurance can provide more comprehensive coverage and higher levels of protection, thereby meeting the personalized healthcare needs of different population groups. Developing supplementary medical insurance would help disperse the pressure of cost containment and establish a mechanism for sharing medical expenses among the government, employers, and individuals. The government can encourage the purchase of supplementary insurance through policies like tax incentives, thereby increasing its coverage rate. Employers can offer it as part of employee benefits to improve staff satisfaction and loyalty. Individuals may also purchase suitable supplementary insurance to enhance their own healthcare security.

Following multiple policy adjustments, Japan has achieved phased results in controlling medical expenditures after three decades of reform. In 2023, Japan's total healthcare expenditure reached 47.3 trillion yen, representing 8.9% of its GDP. This share reflects a slight decline from 9.5% in 2000, indicating progress in restraining the growth of healthcare costs relative to GDP.

The healthcare deficit has also been brought under control, remaining within 300 billion yen in 2023—a notable improvement over the continuously widening deficits observed in the early stages of reform. Japan has also made significant strides in containing pharmaceutical costs. The share of drug expenditures in total medical spending fell from 28% in 1990 to 16% in 2023, a figure below the OECD average of 22%. This reduction was achieved through stringent drug price regulations and an active generic substitution policy, which have helped sustain an affordable healthcare system. Regarding insurance coverage and patient cost-sharing, Japan's health insurance system continues to maintain broad coverage, steadily upholding the goal of universal health insurance. For individuals aged 75 and over, the coinsurance rate remains fixed at 10%. This relatively low out-of-pocket burden allows older adults to access adequate medical care and has prevented large-scale impoverishment due to medical costs, underscoring the positive role of the insurance system in safeguarding public welfare.

Although efforts to control medical costs have seen some success, Japan's medical industry now shows signs of ecosystem degradation and diminished innovative capacity. The global market share of Japanese pharmaceutical firms has fallen steadily, from 21% in 1990 to just 8% in 2023. This decline starkly reflects a sharp loss of international competitiveness. Inadequate research and development investment lies at the core of this waning innovation. In 2022, the R&D intensity of Japanese pharmaceutical companies—measured as R&D spending relative to revenue—stood at only 6.7%, far below the 18% recorded in the United States and 15% in the European Union. This underinvestment directly corresponds to limited outcomes in novel drug development. Of the 100 innovative drugs approved globally over the past decade, only seven were led by Japanese firms, most of which were improved versions of existing drugs. In the realm of truly original drug discovery, Japanese contributions have become negligible, reflecting

a near-total loss of pioneering innovation capability. As the global biopharmaceutical sector advances rapidly, Japan lags far behind Europe and America in cutting-edge fields such as gene therapy and monoclonal antibodies. European and American companies have established dominance in these emerging areas through substantial R&D commitments and innovative outputs. In contrast, Japanese firms, hampered by historically insufficient investment, struggle to compete and have become increasingly marginalized. This trend not only undermines the international standing of Japan’s pharmaceutical industry but also poses a latent threat to the nation’s future healthcare development and public health security.

Japan's medical service system has also developed structural distortions during its reform process. The total number of hospitals fell from 9,200 in 1990 to 8,300 in 2023, a reduction of nearly one thousand. This decline was more pronounced among small and medium-sized hospitals with fewer than 300 beds, which decreased by 40%. Although some of these hospitals have been converted into rehabilitation facilities or clinics, they still fail to meet societal demand for medical care. Consequently, the imbalance between supply and demand has become increasingly acute. In 2022, the average daily number of patient consultations per physician reached 18, exceeding the Japan Medical Association's recommended maximum of 12 by 50%. This excessive workload has led to severe physician fatigue and a corresponding rise in medical error rates. Statistics indicate that errors attributable to physician overwork have increased by 22%, compromising service quality and endangering patient safety. Medical disputes have also grown at an average annual rate of 15%. This trend stems partly from declining service quality and reduced patient satisfaction, and partly from continuously rising patient expectations. Within this context of systemic distortion, balancing medical service supply and demand, improving service quality, and reducing doctor-patient disputes have become critical challenges for Japan's

healthcare reform.

Warnings and Challenges for China

China faces a similar, if not more severe, situation. The centralized drug procurement policy implemented in China in recent years shares an underlying logic with Japan's cost control measures, as both aim to curb the excessive growth of medical expenditures, improve the efficiency of medical insurance fund utilization, and alleviate patients' economic burdens. Nevertheless, significant differences exist between the two approaches. These differences reflect the distinct characteristics of the two countries' healthcare systems, levels of economic development, and industrial structures.

China's cost control policy has followed a differentiated path, establishing a system that is "stratified, classified, incentivized, and compatible," in contrast to Japan's approach of across-the-board price reductions. For pharmaceutical cost control, a dual-track system of "centralized procurement + negotiation" has been implemented, achieving an average price reduction of 40% to 60% through volume-based procurement. A separate negotiation channel is maintained for innovative drugs, with 91 new drugs added to the national reimbursement drug list in 2024 and the timeline from drug launch to listing shortened to one to two years[7]. During the agreement period, reimbursements for negotiated drugs reached 280 million person-times. Regarding payment methods, all coordinated regions nationwide have achieved full coverage of diagnosis-related group (DRG/DIP) payments, which now account for over 80% of medical insurance fund expenditures. This value-based payment approach guides hospitals toward standardized diagnosis and treatment, thereby avoiding the Japanese pitfall of prioritizing price over quality. In 2024, 24.23 billion yuan in medical insurance funds was recovered through big-data supervision. Innovative regulatory tools such as a "driver's license" scoring system and drug traceability codes were developed, while a notification system for commercial bribery cases was

also established. A total of 735 enterprises were assessed as untrustworthy, constructing a dual defense line of "price control and quality supervision."

China has moved beyond Japan's "single government payment" model to establish a triple security system comprising basic medical insurance, commercial insurance, and medical assistance. In 2024, one-stop settlement for medical and commercial insurance will be implemented across 170 coordinated regions. The premium income of commercial health insurance is projected to exceed 800 billion yuan, while medical assistance will benefit 218 million rural low-income individuals. This system effectively disperses pressure on medical insurance funds and prevents the excessive transfer of cost control responsibilities to pharmaceutical companies.

China has also implemented a series of supportive policies to encourage greater research and development investment by pharmaceutical firms. For example, policies such as additional deductions for R&D expenses have been instituted. When calculating taxable income, enterprises may deduct these expenses at a specified rate, which reduces their tax burden and lowers the effective cost of R&D. These measures offer direct economic support to pharmaceutical companies, bolstering their incentive to innovate and thereby advancing technological progress within the industry. Statistics indicate that R&D investment by Chinese pharmaceutical companies has risen steadily in recent years, yielding a growing pipeline of innovative drug candidates. Consequently, an increasing number of domestically developed innovative drugs have reached the market, expanding the range of available treatments for patients[8].

China's centralized drug procurement policy fully accounts for the distinct nature of innovative drugs by retaining a dedicated price negotiation mechanism. Through direct negotiations with manufacturers, the policy achieves reasonable price reductions for innovative

drugs while ensuring pharmaceutical firms maintain a viable profit margin to sustain their research and development investments. In the 2023 negotiations, the average price reduction for innovative drugs was contained within a range of 35% to 50%. This calibrated reduction reflects the medical insurance department's commitment to cost containment while acknowledging the substantial R&D expenditures and innovation incentives of drug developers. During negotiations, authorities comprehensively evaluate factors including a drug's development costs, clinical efficacy, and market demand, engaging in detailed communication and consultation with companies to reach a mutually acceptable price[9]. This tailored mechanism avoids the uniform price cuts applied to all drugs in systems like Japan's, thereby safeguarding the interests of innovative enterprises and fostering continued pharmaceutical innovation.

In contrast, Japan's major healthcare cost control initiative during the 1990s employed a uniform price-cutting strategy that disregarded the research and development costs of drugs and the laws of the industrial life cycle. While this approach reduced medical expenses in the short term, it ultimately dealt a devastating blow to the domestic pharmaceutical industry. The severe compression of corporate profit margins left companies unable to fund new drug research and development. Consequently, Japan gradually fell behind in global pharmaceutical innovation and missed a golden opportunity for growth in the biopharmaceutical sector.

China currently faces substantial challenges. Small and medium-sized pharmaceutical enterprises are under significant pressure to transform, as the number of generic drug manufacturers still exceeds 5,000 and at least 30% of these face elimination. Drawing on Japan’s later-stage industrial integration experience, transformation should be guided through mergers, acquisitions, reorganizations, and the development of distinctive generic drugs. The deficiencies in primary care capabilities have become increasingly pronounced; although the average

hospitalization cost per visit in primary hospitals is only 6,105 yuan, inadequate service capacity drives many patients back to tertiary hospitals. Greater medical insurance support should therefore be directed toward equipment upgrades and talent development at the primary level. With accelerated population aging—over 21% of the population is now aged 60 or above—medical insurance fund expenditure is growing at 7.6%, outpacing the 3.5% growth in revenue[10]. It is essential to further optimize incentives for insurance participation, expand coverage among flexible employment groups, and learn from Japan's later reform experience of linking medical insurance contributions to pensions.

Japan's thirty-year medical reform demonstrates that such reform constitutes a complex systemic undertaking. It must improve efficiency and quality while safeguarding equitable access to care, balancing the interests and demands of all stakeholders through a dynamic equilibrium. Cost-containment measures should also preserve space for innovation within the pharmaceutical industry. Effective system design requires accommodating multiple interests to foster collaborative partnerships. Confronting an aging population necessitates restructuring intergenerational responsibility-sharing mechanisms to ensure the healthcare system's long-term sustainability. For China, now at a critical juncture in its own reform, a thorough examination of Japan's experience is essential to formulate context-appropriate policies and advance the strategic objective of a Healthy China.

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Declarations

There is no conflict of interest in this article.

Competing interests

The authors declare no competing interests.

Ethical approval

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