

Why Singapore's Healthcare Model Cannot Be Directly Replicated in Mainland China: A Comparative Policy Perspective

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<https://doi.org/10.53104/insights.soc.sci.2026.06003>

Received: 29 April 2026

Accepted: 5 May 2026

Published: 11 May 2026

Citation: Wei, M. (2026). Why Singapore's Healthcare Model Cannot Be Directly Replicated in Mainland China: A Comparative Policy Perspective. *Insights in Social Science*, 4(2), 24–31.

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Abstract: Singapore achieves a world-leading life expectancy of 83 years while allocating only 4.47% of its GDP to healthcare, whereas mainland China's health expenditure reached 7.9% of GDP in 2023 with a life expectancy gap of 5 to 6 years. This paper argues that Singapore's apparent efficiency stems from four institutional mechanisms embedded in its colonial legacy, compulsory savings architecture, direct state payment to physicians, and exclusion of foreign workers. None of these mechanisms can be transplanted into mainland China, given fundamental differences in fiscal capacity, population scale, urban-rural duality, and demographic trajectory. Using a comparative institutional analysis framework, this review demonstrates that China's post-2000 demographic inversion, incomplete contribution base, and self-financing hospital model collectively render the Singaporean template inapplicable. The paper concludes that healthcare system reform must respect path dependence as a structural given rather than a policy failure.

Keywords: healthcare financing; Medisave; Singapore-China comparison; fiscal sustainability; demographic transition

1. Historical Institutional Evolution of Singapore's Healthcare System

1.1 Colonial Legacy and the Cultural Constraints of Chinese Migrants

No nation's healthcare system emerges in isolation; Singapore's contemporary institutional configuration is an amalgamation of ancestral governance traditions, local elite stewardship, and British common law. The city-state's healthcare framework is in large part a legacy of British colonial

rule, which introduced Western medical institutions, standardized training for physicians, and a legal environment conducive to contractual enforcement in health insurance. However, colonial legacy alone does not explain Singapore's distinct institutional choices.

The majority of Chinese migrant laborers and merchants who settled in Singapore came primarily to earn a living, and many held the cultural expectation of returning to their ancestral homeland in old age. This so-called *luoye guigen* (落叶归根)

orientation meant that they were unwilling to bear higher taxes for future healthcare and retirement needs that they did not intend to utilize in Singapore (Ding YL, 2018). Cultural attitudes toward aging and end-of-life care continue to shape health-seeking behavior among older Singaporeans. This cultural constraint pushed the post-independence government away from a British-style tax-funded National Health Service and toward a system based on individual medical savings, a design that respected migrants' preference for portable, personally owned accounts rather than social pooling.

1.2 The S+3M Core Architecture: Subsidies, Savings, Insurance, and Safety Nets

Singapore's healthcare financing rests on four complementary pillars: government subsidies (Subsidies), mandatory medical savings accounts (Medisave), national catastrophic insurance (MediShield Life), and a means-tested safety net (Medifund). Government subsidies are straightforward: the state directly covers a portion of citizens' medical expenses using public finances, and individuals pay only the remainder. But this post-subsidy out-of-pocket payment is drawn not from disposable income alone but from each citizen's mandatory Medisave account.

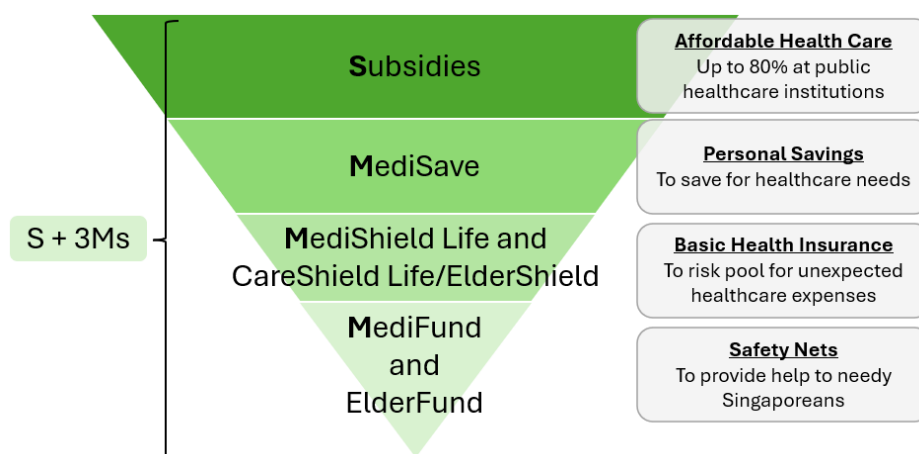


Figure 1. Singapore's S+3M Healthcare Financing Architecture

Source: Phang XNS, Talib A. (2018). The Singapore Model of Managing Healthcare Cost. *Res J Econ*, 2(2), 1000121, Figure 1.

The inverted pyramid illustrates the layered structure from universal government subsidies at the top to targeted safety nets at the base.

Medisave is a state-mandated, individually owned medical savings account into which both employees and employers deposit a fixed proportion of monthly income. Funds in this account belong fully to the individual and their immediate family; unlike a social pooling system, these funds cannot be diverted to pay for other people's medical expenses. Medisave earns the benchmark interest rate plus one percent, with a guaranteed minimum of four percent. Primary uses include inpatient cost-sharing, day surgery, selected chronic disease

outpatient services, preventive care, and payment of annual premiums for MediShield Life. Critically, Medisave cannot be used for general outpatient visits; citizens must pay out of pocket for minor illnesses, a rule designed to discourage unnecessary healthcare utilization. Guo et al. (2025) projected lifetime healthcare costs among older adults in Singapore and found that rising multimorbidity substantially increases cumulative medical expenditure over time. This trajectory implies that even a well-designed savings model faces growing pressure as populations age and chronic disease burdens rise.

1.3 Direct State Payment to Physicians: The Ministry of Health Salary Model

Singapore's public hospitals operate as restructured entities under the Ministry of Health Holdings umbrella, which means they maintain their own accounts but are not dependent on clinical revenue to fund physician salaries. In practice, doctor compensation is managed through the public healthcare cluster system and is structurally decoupled from individual hospital revenue performance, prescription volume, number of diagnostic tests ordered, or consumption of medical supplies. A physician's earnings are not affected by prescribing more drugs, ordering extra examinations, or utilizing more consumables. This design eliminates the financial conflict of interest that distorts clinical decision-making in self-financing hospital systems.

Singapore's physician compensation structure features a high base salary plus clearly defined professional grades. Income is stable and transparent, while promotion and performance evaluation rely on professional competence, research output, teaching responsibilities, and the quality of clinical care, with no connection to revenue generation. Tan et al. (2021) described how Singapore's restructured hospital system, operating under the MOH Holdings cluster model, is designed to decouple physician compensation from clinical revenue, with professional advancement linked to quality and performance rather than service volume. This design principle is intended to insulate clinical decision-making from financial pressure, removing the institutional incentive to overprescribe or order unnecessary tests.

1.4 Public Hospital Ward Class and Differential Subsidy Mechanisms

When a Singaporean citizen or permanent resident is hospitalized, the reimbursement rate depends on the ward class they choose. Higher-class wards provide better amenities but receive lower government subsidies; lower-class wards offer more basic conditions but receive substantially higher

subsidies. This tiered structure creates price signals that nudge patients toward cost-conscious choices without denying access to necessary care. Those who value privacy and comfort pay more; those who prioritize affordability accept basic accommodations in exchange for higher subsidy rates.

This design embeds consumer choice within a regulated framework, discouraging the overconsumption typical of free-at-point-of-care systems. Tan et al. (2021) described how Singapore's ward-class subsidy structure creates differential price signals that guide patient choices toward lower-amenity wards without compromising clinical quality, noting that the same medical care is provided regardless of ward class. The system does not eliminate out-of-pocket spending but channels it through Medisave in a way that makes patients aware of resource constraints while protecting them from catastrophic expenses.

2. Institutional Explanations for the Efficiency of Singapore's Healthcare System

2.1 Demand-Side Constraints: No Free Healthcare and the Principle of Prudent Care-Seeking

Although a young Lee Kuan Yew had been impressed by Britain's free healthcare system during his studies at Cambridge, he governed Singapore by a fundamentally different principle: cradle-to-grave welfare, he believed, would erode the individual drive for self-improvement. As recounted in Haseltine (2013), the Lee administration encountered early evidence of what economists call moral hazard. Patients given free antibiotics took the medication for only two days, discontinued when they did not immediately feel better, and discarded the remainder; the same patients would then visit a private clinic, pay out of pocket, and complete the full course. This observation crystallized the governing logic that "free equals waste." The government accordingly introduced a 50-cent fee for each outpatient visit at public facilities, doubled on public holidays. The signal was deliberate: healthcare is not an unlimited

buffet funded by the state, and citizens bear personal responsibility for their own medical decisions.

The institutional consequences of this philosophy are embedded in the system's design. Medisave explicitly excludes reimbursement for general outpatient visits, meaning that patients pay out of pocket for minor illnesses and must therefore weigh the cost before seeking care. For inpatient admissions, reimbursement is not a flat rate but varies by ward class: higher-amenity wards attract lower government subsidies, while basic ward accommodation receives substantially more support. Citizens thus internalize real price signals at every point of contact with the healthcare system. The result is a population that understands healthcare as a managed personal expenditure rather than an entitlement. Government health expenditure accounts for less than five percent of GDP, yet residents are protected from catastrophic costs through Medisave balances accumulated over decades of mandatory contributions.

2.2 Supply-Side Governance: Institutional Elimination of Medical Rent-Seeking

Singapore's healthcare system sharply limits corruption by structurally eliminating financial incentives between doctors, hospitals, and pharmaceutical or device suppliers. Public-sector physicians receive compensation managed through the public healthcare cluster system and are not reliant on clinical revenue, with salaries set at levels that remove any financial motive to profit from prescriptions or procedures. Drugs and consumables are procured centrally with transparent prices, leaving no opportunity for kickbacks. Inpatient services operate under DRG-based cost controls, meaning that additional tests, procedures, or expensive drugs do not increase physician income or hospital revenue.

Unlike many hospitals in other countries, Singapore's public hospitals do not operate under a self-financing model and are evaluated on quality, efficiency, affordability, and patient experience rather than on revenue-generating indicators. This

design feature has been recognized as a global best practice. Tan et al. (2021) described how Singapore's healthcare system, with its cluster-based physician compensation structure, managed clinical redeployment during the COVID-19 pandemic in ways consistent with a system where physician earnings are not tied to service volume, unlike the incentive pressures observed in fee-for-service contexts. Singapore has cut off every major rent-seeking channel in the healthcare chain, ensuring a clean system and significantly reducing unnecessary medical spending.

2.3 Tiered Service Delivery: From General Practice Clinics to Tertiary Hospitals

Above the GP network lies Singapore's unique system of 26 public polyclinics, which serve as semi-public primary care institutions responsible for chronic disease management, routine diagnostics, vaccinations, and maternal and child health. Polyclinics function as an intermediate layer between GP clinics and hospitals, absorbing the vast majority of routine and low-acuity cases. Approximately 30 public hospitals with around 12,000 beds nationwide concentrate on severe conditions, emergency care, surgeries, and high-complexity treatments.

Because lower levels of the system successfully absorb most minor and routine cases, public hospitals do not experience the overwhelming congestion typical of large tertiary hospitals in mainland China. Guo et al. (2025) projected disease burden and lifetime healthcare costs among older adults in Singapore, providing context for understanding why effective demand filtering at the primary care level matters for system sustainability. Singapore's polyclinic model concentrates routine chronic disease management away from hospitals, allowing specialist resources to be directed where they yield the greatest clinical value.

2.4 The Structural Distinction Between Mandatory Savings and Pay-As-You-Go Financing

Singapore's Medisave represents a funded, individually owned savings model, whereas

mainland China's social health insurance operates largely on a pay-as-you-go basis with partial individual accounts. In China, the employee's personal contribution enters an individual account, while the employer's contribution enters a pooled social fund over which individuals have no control. Personal accounts earn very low interest, yet outpatient care is reimbursable, creating incentives for overutilization that Singapore explicitly avoids by excluding general outpatient visits from Medisave coverage.

This financing distinction has profound implications for intergenerational equity and fiscal sustainability. Singapore's funded model means that each generation saves for its own healthcare, whereas China's pay-as-you-go system transfers resources from current workers to current retirees. Lim et al. (2023) documented the increasing burden of asthma acute care in Singapore over 15 years, noting that even rising chronic disease prevalence has not destabilized the system because contribution histories are long. In China, by contrast, the rapid aging of the population has compressed the window for contribution accumulation, making a transition to a funded model mathematically impossible for current middle-aged cohorts.

3. Structural Barriers Preventing China from Replicating Singapore's Model

3.1 The Order-of-Magnitude Gap in Population Size and Fiscal Capacity

With 1.4 billion people and roughly 4 million physicians in the public hospital system, adopting a Singapore-style model in which physician salaries are fully decoupled from hospital revenue and funded through the public cluster system would require trillions of RMB in annual expenditure. Singapore's approach works because the city-state employs only several thousand public-sector doctors. China's fiscal position cannot sustain such a burden. Huang et al. (2024) evaluated China's primary healthcare services efficiency using a three-stage DEA-Malmquist model and confirmed that

technical efficiency is already declining under current financing constraints.

Moreover, Singapore's GDP per capita exceeded US\$82,000 in 2023, while mainland China's remained below US\$13,000. A low expenditure share in a high-income economy reflects both allocative efficiency and the exclusion of large population segments from public financing. If China were to attempt Singapore-level public spending at 4.47% of GDP, the absolute amount would be approximately US\$800 billion annually, a figure larger than the entire GDP of the Netherlands. At that scale, efficiency gains alone cannot compensate for the demographic coverage obligations that China carries.

3.2 Urban-Rural Duality and the Coverage Dilemma of Informal Employment

A large proportion of rural residents and informal-sector workers in China lack employers who can contribute to their medical insurance. An estimated 300 million workers are in informal employment, including rural residents, self-employed vendors, domestic workers, and platform gig workers, who often have no contribution record at all or rely on the low-premium Urban-Rural Resident Basic Medical Insurance, which is voluntary and offers limited benefits. Li and Han (2023) demonstrated that total health expenditure across Chinese provinces exhibits strong positive spatial autocorrelation, meaning fiscal pressure in one region cannot be isolated from neighboring demands.

If the state were to fully subsidize this group to replicate Singapore's universal Medisave coverage, the fiscal pressure would again reach trillion-RMB levels, far beyond China's current capacity. Liu et al. (2019) documented substantial catastrophic health expenditure among migrant workers in western China, consistent with the broader financial vulnerability of populations with weaker employment-linked insurance protection. Implementing a Medisave-style mandatory individual account would require either mandating contributions from workers earning at subsistence level, which is politically untenable, or having the

state subsidize their accounts in full, which is fiscally beyond current capacity.

3.3 Self-Financing Public Hospitals and the Systemic Roots of Medical Corruption

Because Chinese public hospitals must cover most of their operating costs through clinical revenue, the system inherently generates pressure to expand service volume and creates structural room for informal income. Li and Chen (2023) examined barriers to community healthcare delivery from a nurse perspective in urban China, documenting how performance metrics tied to revenue production distort clinical priorities. Xiao et al. (2026) conducted an interrupted time-series analysis of healthcare services utilization during the COVID-19 pandemic and found that Chinese hospitals experienced severe revenue shocks when patient volumes dropped, with service patterns shifting upon reopening in ways that reflected underlying revenue pressures rather than purely clinical need. This is not a problem of individual moral failing but a systemic equilibrium arising from fiscal underfunding. Chen and Guan (2024) proposed patient-centered lean healthcare management from a humanistic perspective, but lean management cannot compensate for structural deficits in government subsidy. In Singapore, public hospitals are evaluated on quality, efficiency, affordability, and patient experience rather than on revenue-generating indicators. China cannot replicate Singapore's clean physician payment system without first solving the underlying fiscal equation. Raising taxes substantially to fund direct salary payments through the public cluster system is politically infeasible, while accepting continued self-financing preserves the attendant corruption risks.

3.4 Political Legitimacy Constraints: The Impossibility of Excluding Any Resident Group

Singapore has 6 million residents, of whom 2 million are foreign workers who receive no government healthcare subsidies, relying instead on employer-mandated private insurance with limited coverage and high cost-sharing. This exclusion is not an

oversight but a deliberate design feature that allows Singapore to report a 4.47% GDP healthcare expenditure while maintaining high-quality care for citizens. Panesar (2025) analyzed Singapore's health reforms in response to aging and noted that even within the citizen population, political debates about subsidy cuts are contentious, yet foreign workers have no vote and no political voice.

Mainland China cannot legally or politically replicate this exclusion mechanism. Migrant workers from central and western provinces who labor in coastal manufacturing hubs are Chinese citizens with constitutional rights to social security benefits, regardless of whether their employers fully comply with contribution requirements. In practice, the Chinese state faces a strong political and institutional expectation to provide basic medical protection across the entire citizen population, which makes exclusion-based financing strategies far less feasible than in Singapore. In China, the sheer scale of the claimant population creates a fiscal obligation that cannot be arbitrated away through exclusion.

4. Was There Ever a Historical Window for Emulation?

4.1 The 1990s: Weak Savings Base and Missing Financial Infrastructure

At the end of the 20th century, when Singapore's Medisave system was already mature, mainland China had only just overcome subsistence shortages, and household savings were minimal. Successful mandatory savings systems require not only legal compulsion but also a pre-existing culture of formal financial account ownership. In 1990s China, the rural financial system was underdeveloped, most households kept savings in cash or informal rotating credit associations, and income volatility was extreme. Implementing a universal medical savings account would have required first building a national financial infrastructure and achieving universal bank account penetration, a project that took another two decades.

Moreover, the export-driven industrialization strategy depended on low labor costs that precluded high mandatory contribution rates. Singapore's contribution rates for Medisave alone have ranged from six to eight percent of wages. In 1990s China, imposing such rates would have eliminated the cost advantage that attracted foreign direct investment to coastal special economic zones. The sequencing constraint was fundamental. China needed low labor costs to industrialize, but low labor costs precluded the savings-based welfare model that Singapore built only after industrialization was already complete.

4.2 The 2000s: Demographic Inversion Closed the Window Before It Opened

By the time China had accumulated sufficient fiscal capacity to consider adopting a more advanced social security system, roughly circa 2005 to 2010, the population structure had already shifted toward an inverted pyramid. The one-child policy, initiated in 1979, began producing slower working-age population growth by the late 1990s, and the dependency ratio started rising much earlier than demographic projections had anticipated. Age-period-cohort dynamics that shape disease burden follow the same trajectory as healthcare financing strain; a rapidly aging population compresses the very window that a funded savings model requires to mature.

Singapore established its S+3M model during a period of sustained high fertility and demographic stability, with total fertility rates remaining above replacement until the mid-1980s. This gave the city-state a long window to accumulate Medisave balances across cohorts. Evidence from Singapore's own experience is instructive here: Juang et al. (2026) showed that even rising multimorbidity costs among COPD patients have not destabilized the Singapore system, precisely because contribution histories are long enough to absorb the pressure. In China, any attempt to implement a pure Medisave model today would require current workers to save for both their own future care and the current care of their parents' generation, a double burden that

Singapore never imposed because the elderly cohort when Medisave was introduced had shorter life expectancies and lower healthcare utilization.

5. Conclusion

The comparative analysis demonstrates that Singapore's healthcare efficiency is not a universal template but a locally adapted solution to a specific set of demographic, fiscal, and administrative conditions. The city-state's low expenditure share depends on a closed eligible population with formal employment, implementation of mandatory savings before demographic aging, direct Ministry of Health physician payment enabled by small scale, and exclusion of one-third of residents from the subsidy system. Mainland China lacks every one of these preconditions.

This does not mean China's healthcare system is failing in absolute terms. Life expectancy has increased from approximately 68 years in 1990 to 77 years in 2023, a gain of nearly a decade. Tan et al. (2023) documented Singapore's home recovery approach during COVID-19, demonstrating that even efficient systems face operational challenges. China's challenges are different but not necessarily greater. The task at hand is to manage a universal system for 1.4 billion people across vast geographic and economic disparities, rather than to optimize a closed system for 4 million citizens with complete formal employment.

Chinese financial thought offers a useful frame here. The concept of *yingkui tongyuan* (盈亏同源) holds that the source of gain and the source of loss are structurally identical. Singapore's healthcare model illustrates this principle with unusual clarity. The very features that produce its efficiency are precisely the features that prevent its replication elsewhere. Singapore's small population, centralized governance, and exclusion capacity enable low spending but also create vulnerability to external shocks and labor shortages. China's large population, fiscal constraints, and universal coverage obligations create inefficiencies but also generate resilience through scale and domestic market depth. The task for Chinese health policy

researchers is not to lament the impossibility of copying Singapore but to identify second-best reforms that respect path dependence while improving allocative efficiency within existing constraints.

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