

The Darooyar plan in Iran: Challenges and policy pathways for aligning pharmaceutical supply and demand

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Abstract

Background: The Darooyar plan, launched in July 2022, marked a structural shift in Iran's pharmaceutical subsidy system by transferring financial support from a preferential currency regime to basic health insurers. Although this reform has enhanced transparency and reduced rent-seeking, two years of implementation have shown that subsidy modification alone is insufficient to achieve a sustainable impact.

Challenges: Supply-side obstacles include irregular budget allocations, incomplete integration of the T-Tak track-and-trace system with insurer and e-prescribing platforms, and the absence of mechanisms to absorb exchange-rate shocks. Concurrently, demand-side constraints, such as a non-functional referral system, incomplete nationwide e-prescribing, and a high average of 3.5 medicine items per prescription (Versus the global benchmark of 1.8-2.2), continue to drive irrational prescribing.

Recommendations: This brief proposes a dual-sided reform package: (1) establishing a dedicated monthly budget line, (2) completing T-Tak integration within 12 months, (3) designing a joint public-insurer exchange-rate and liquidity adjustment fund, (4) mandating e-prescribing, (5) strengthening the referral system through provincial pilots, and (6) forming a permanent coordination working group with defined authority for monitoring and quarterly public reporting.

Conclusion: The Darooyar plan is a necessary reform; however, its consolidation requires a balanced, multi-stakeholder approach. Implementing this coordinated package can guide Iran's pharmaceutical system towards equitable, transparent, and sustainable access to medicines.

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Highlights

What is current knowledge?

The Darooyar plan shifted pharmaceutical subsidies from the preferential currency regime to insurers, thereby increasing transparency and reducing rent-seeking. However, two years of implementation have shown that subsidy reform alone is insufficient. Supply-side challenges include delayed budget disbursement, fragmented information systems (With T Tak not fully integrated), and a lack of tools to absorb exchange-rate shocks. Demand-side issues include irrational prescribing patterns, an incomplete referral system, and limited e-prescribing.

What is new here?

This policy brief introduces a coordinated supply-demand reform package to consolidate Darooyar's achievements. It proposes a dedicated budget line, full T Tak-insurer integration within 12 months, an exchange-rate and liquidity adjustment fund, mandatory e-prescribing, strengthening of the referral system through provincial pilots, and a permanent multi-stakeholder working group with monthly monitoring and quarterly public reporting. By addressing both sides simultaneously, this integrated approach provides the first comprehensive operational roadmap for consolidating Darooyar in Iran.

consumer directly rather than benefiting importers. Key achievements include greater transparency in the subsidy payment pathway, reduced incentives for reverse smuggling, and more realistic relative medicine prices (2). The plan also succeeded in preventing a sudden increase in patients' out-of-pocket payments during its initial implementation (3,4). Nevertheless, two years of experience have shown that changing the subsidy mechanism alone is insufficient. Complementary infrastructure on both the supply and demand sides must be strengthened to fully realise the plan's objectives (3,5).

Supply-side challenges (Supply chain, financing, and oversight)

Based on scoping reviews and stakeholder consultations (3,6), the most important supply-side challenges are:

Misalignment in financial resource allocation: Although the initial resource requirements were estimated by the Food and Drug Administration, the annually approved budget and its actual disbursement by the Plan and Budget Organisation have been subject to delays and shortfalls. This has resulted in the accumulation of claims owed to pharmacies and wholesalers, thereby reducing liquidity throughout the chain (3,7).

Weak integration of information systems: The "T-Tak" track-and-trace system, designed to monitor medicines from production to dispensing, is not yet fully integrated with insurance and electronic prescribing systems. This lack of integration limits real-time monitoring of physical and financial flows and hinders data-driven decision-making (6,8).

Absence of tools to buffer exchange-rate shocks: Given the pharmaceutical industry's partial dependence on imported active ingredients, exchange-rate fluctuations exert cost pressures on domestic manufacturers. The absence of a fund or mechanism to absorb such shocks creates uncertainty in production planning (5,9).

These challenges primarily relate to structures and processes - rather than the failure of any single institution - and can be addressed through governance reforms (3,6).

The Darooyar plan: Objectives and early achievements

Launched in July 2022, the Darooyar plan shifted pharmaceutical subsidies from a preferential currency regime (At 4,200 Iranian rials per US dollar) to the end of the chain - i.e., to basic health insurers (1,2). The reform was designed to ensure that subsidies reached the final

Demand-side challenges: Prescribing and consumption patterns

Alongside supply-side issues, evidence indicates that medicine prescribing and consumption patterns in Iran require serious attention. The average number of medicine items per prescription (About 3.5) is significantly higher than common global standards (1.8-2.2) (10,11). Several factors contribute to this situation:

Incomplete referral system and family physician programme: In many urban areas, patients bypass primary care gatekeepers and consult specialists directly, which tends to increase the number of items prescribed (12,13).

Lack of fully implemented nationwide electronic prescribing: Although basic infrastructure exists, not all treatment centres and physicians are connected to a unified e-prescribing system. This limits insurers' ability to monitor prescribing patterns (10,14).

Medicine use culture and patient expectations: Patients sometimes insist on receiving a greater number of medicines or more expensive medicines, and without appropriate guidance, these expectations lead to higher prescription volumes (11,15).

It is noteworthy that this consumption pattern predated Darooyar (10). However, following the removal of the preferential currency regime and the resulting increase in relative medicine prices, the financial burden has fallen more heavily on insurers and, ultimately, on the entire health system (3,5).

The need to coordinate supply- and demand-side reforms

One of the most important international lessons from pharmaceutical system reform is that focusing solely on either supply or demand does not yield sustainable results (16,17). Successful reforms in countries such as Germany, Canada, Thailand, and Australia have typically included a package of coordinated actions addressing both sides (17-19):

On the supply side: enhanced supply-chain transparency, predictable budgeting, and shock-absorption instruments (9,16).

On the demand side: a strong referral system, electronic prescribing, and the monitoring of prescribing patterns (12,17).

In the case of Darooyar, although the first step (Shifting the subsidy to insurers) was appropriately taken, complementary demand-side actions and full supply-chain data integration have not been pursued with sufficient speed or scope (3,5). Consequently, the financial pressure that the targeted subsidy was intended to contain has manifested as accumulated debt throughout the supply chain (7). This situation should be viewed not as a failure but as an evolutionary challenge within the complex process of pharmaceutical reform (3,6).

Policy recommendations: A coordinated operational roadmap

Based on the above analysis, the following set of specific and actionable policy measures is recommended. For each proposal, we specify the implementing authority, key success indicators, and expected outcomes to enhance operational clarity.

a) Supply-side actions (Financial sustainability and transparency)

1. Establish a dedicated budget line for Darooyar

Implementing authority: Ministry of Health and Medical Education (MoHME), in collaboration with the Plan and Budget Organisation (PBO).

Success indicator: Monthly disbursement of allocated funds, with no cumulative carryover beyond 30 days.

Expected outcome: Reduced uncertainty for pharmacies and wholesalers and improved liquidity throughout the supply chain.

2. Complete the integration of T-Tak with insurers and customs

Implementing authority: MoHME (Food and drug administration), PBO, and the Central Bank of Iran.

Success indicator: Full end-to-end tracking (From import/Production to dispensing) operational within a 12-month programme.

Expected outcome: Real-time visibility of physical and financial flows, enhanced fraud detection, and data-driven policymaking.

3. Design an exchange-rate and liquidity adjustment fund

Implementing authority: MoHME, PBO, Central Bank, and Basic Health Insurance Organisations.

Clarification on funding sources and legal logic:

Funding sources: The fund will be co-financed through (a) a fixed percentage of the national health insurance premium pool and (b) an annual allocation from the national general budget (Via the PBO), based on projected exchange-rate volatility.

Legal logic for insurer participation: Insurers are natural beneficiaries of price stability because exchange-rate shocks directly increase their claims liabilities. Their contribution is structured as a "risk-sharing reserve" within the framework of the Social Security and Basic Insurance Laws, with oversight by the Supreme Council of Health Insurance.

Success indicator: Maintain increases in average wholesale medicine prices below the annual inflation rate for imported raw materials.

Expected outcome: Reduced production uncertainty for domestic manufacturers and stabilised market prices.

b) Demand-side actions (Rationalising prescribing and use)

4. Strengthen the referral system and family physician programme

Implementing authority: MoHME (Primary care directorate), in collaboration with Medical Councils.

Success indicator: Pilot implementation in two provinces within 12 months, with a measurable reduction ($\geq 15\%$) in specialist consultations for non-complex conditions.

Expected outcome: More rational prescribing and a reduction in the average number of items per prescription.

5. Mandate nationwide electronic prescribing and develop clinical guidelines

Implementing authority: MoHME, the Food and Drug Administration, and Insurance Organizations.

Success indicator: 100% of outpatient prescriptions generated through the unified e-prescribing platform within 18 months.

Expected outcome: Real-time monitoring of prescribing patterns and enforcement of insurance medicine baskets.

c) Governance and coordination actions

6. Form a permanent Darooyar coordination working group

Composition: Representatives from MoHME, PBO, the Basic Health Insurance Organization, the Social Security Organization, the Food and Drug Administration, and professional associations of pharmacists and pharmacies.

Authority and function:

Decision-making vs. advisory: The group shall have advisory and coordination authority (Rather than executive decision-making power). Its primary function shall be to identify bottlenecks, propose solutions, and escalate unresolved issues to the Supreme Council of Health Insurance for binding decisions.

Data access: The group shall have full, unrestricted access to aggregated, anonymized data from T-Tak, insurance claims, and e-prescribing systems for monitoring purposes.

Reporting: The group shall monitor key performance indicators (e.g., outstanding claims, stocks of essential medicines, and the timing of budget disbursements) monthly and publish a quarterly public report. These reports shall be informative and advisory; however, if critical thresholds are breached (e.g., >30 days of delayed payments), the group may issue a "red flag" recommendation to the Supreme Council.

Expected outcome: Continuous and transparent oversight, early identification of systemic risks, and enhanced accountability.

Conclusion

The Darooyar plan represents a necessary and forward-looking structural reform of Iran's pharmaceutical system. During its short period of implementation, it has successfully increased the transparency and targeting of subsidies. However, as this policy brief demonstrates, sustainable consolidation requires the simultaneous strengthening of both the supply and demand sides.

The proposed coordinated reform package-including predictable budgeting, full T-Tak integration, an exchange-rate adjustment fund, mandatory e-prescribing, reinforcement of the referral system, and a permanent multi-stakeholder working group-provides a practical roadmap for moving beyond subsidy reform towards systemic resilience.

The central policy message is clear: without addressing prescribing behaviour and supply-chain financing in tandem, the financial pressures currently manifesting as insurer debts will persist. Conversely, through coordinated implementation, Iran can achieve more equitable, transparent, and sustainable access to essential medicines-even under conditions of fiscal constraint. We recommend that policymakers adopt this multi-sectoral perspective, engage all stakeholders, and develop a detailed, time-bound implementation roadmap within six months, with pilot actions initiated immediately thereafter.

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Conflicts of Interest

The authors declare no competing interests.

Author Contributions

MJK: Conceptualization and Project administration. SM: Conceptualization, Methodology, Investigation, Software, and Visualization. All authors read and approved the final manuscript.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon request. The data are not publicly available because of privacy or ethical restrictions.

Use of Artificial Intelligence

During the preparation of this work, the authors used OpenAI ChatGPT to improve the readability of the manuscript. The authors reviewed and edited the content as needed and take full responsibility for the integrity of the work.

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