Review Article

Iran's Health Transformation Plan and the COVID-19 Response: A Systematic Review of Strengths, Failures, and Lessons

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Abstract

Purpose: To examine how Iran's Health Transformation Plan (HTP), introduced in 2014 to expand coverage and reduce out-of-pocket costs, shaped the country's COVID-19 response and to identify lessons for future health crises.
Materials and Methods: A systematic review of studies published between 2014 and 2023 was conducted in line with PRISMA standards. Sources included international databases, national policy documents, and institutional reports. Twenty-five studies met inclusion criteria. Data were synthesized thematically and interpreted using Kingdon's Multiple Streams Framework.
Results: The HTP improved access to health services but provided limited resilience during COVID-19. Lockdowns were partial and delayed; digital tools were mostly informational hotlines rather than case-based tracing; laboratory and testing capacity expanded slowly; and social protection programs largely excluded informal workers. Vaccine rollout was delayed by early restrictions on Western imports but accelerated later through domestic production and alternative imports. Across domains, the absence of interoperable data systems, particularly a National Vulnerability Database, restricted targeted interventions.
Conclusion: The HTP enhanced visibility but lacked adaptability in crisis. Durable resilience requires interoperable data governance, inclusive social protection, and decentralized preparedness. The findings provide transferable lessons for health reforms under fiscal and geopolitical constraints.

Keywords: Health Transformation Plan; COVID-19; Health System Reform; Iran; Systematic Review; Health Policy; Pandemics.

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Introduction

The COVID-19 pandemic has posed one of the greatest global challenges to health systems in recent decades, exposing pre-existing weaknesses and magnifying structural inequities [1,2]. Countries with robust primary health care, strong social protection, and reliable data systems were generally more resilient in mitigating health and socioeconomic impacts [3]. In contrast, systems overly centered on hospital-based curative care often struggled to adapt to rapidly changing demands [4].

In Iran, health sector reform took a prominent turn with the launch of the Health Transformation Plan (HTP) in 2014. The initiative was introduced with the dual aim of expanding financial protection and improving equitable access to care [5,6]. Among its key components were reductions in out-of-pocket (OOP) payments, expansion of insurance coverage, enhanced specialist services, and increased hospital capacity [7,8]. The HTP quickly became a flagship reform backed by high-level political support and substantial budgetary allocations [9].

Despite these advances, several critiques emerged. Observers highlighted that the plan was disproportionately hospital-oriented, paid insufficient attention to prevention and primary health care, and lacked mechanisms for sustainable financing [10,11]. Concerns were also raised about fragmented governance, weak health information systems, and limited integration between health and social protection sectors [12]. These shortcomings are highly relevant in the context of epidemic preparedness, which depends on system adaptability, strong data flows, and intersectoral collaboration [13].

The COVID-19 pandemic placed extraordinary pressure on Iran's health system and tested the adaptability of the HTP. The government implemented a series of non-pharmaceutical interventions, including school closures, travel restrictions, and localized lockdowns, but these were often partial, delayed, and unevenly enforced [14,15]. Digital tools focused primarily on informational platforms, such as the national 4030 hotline, rather than case-based contact tracing or interoperable surveillance [16]. Laboratory and testing capacity expanded gradually from a highly centralized base, leading to initial bottlenecks in diagnosis and reporting [17]. Social protection measures provided some relief to formal-sector employees but excluded many informal workers, leaving vulnerable groups inadequately supported [18].

Vaccination policy further revealed tensions between politics and public health. An early prohibition on Western-manufactured vaccines in January 2021 delayed rollout, though coverage improved later in 2021 through a combination of imports from alternative suppliers and domestic production of the Barakat vaccine [19-21]. These dynamics occurred against a backdrop of limited transparency, insufficient data integration, and the absence of a National Vulnerability Database (NVD), which hampered the ability to target interventions and monitor outcomes [22].

Several descriptive studies and international reports have examined aspects of Iran's pandemic response, but no systematic review has synthesized how the HTP influenced the trajectory of COVID-19 management across its key domains. Addressing this gap is essential for drawing lessons on the resilience of health reforms implemented under fiscal and geopolitical constraints. This study therefore undertakes a systematic review to evaluate the strengths and failures of the HTP during the COVID-19 crisis, using Kingdon's Multiple

Streams Framework to interpret agenda-setting, policy adoption, and implementation dynamics.

The methodology was informed by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) checklist to ensure transparency in the inclusion of evidence, policy case identification, and thematic synthesis. The review protocol was registered with PROSPERO (International Prospective Register of Systematic Reviews) under registration number 1155460. The focus was not on quantitative outcome pooling but on extracting and integrating findings from multiple policy and institutional evaluations relevant to Iran's HTP and its function during the COVID-19 pandemic.

Materials and Methods

Search Strategy

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [1]. The search covered the period from January 2014, coinciding with the launch of the Health Transformation Plan (HTP), to December 2023. Major international databases, including PubMed, Scopus, and Web of Science, were searched using controlled vocabulary and free-text terms related to "Health Transformation Plan," "Iran," "COVID-19," "pandemic response," and "health reform." To ensure contextual completeness, gray literature, national policy documents, and reports from the Ministry of Health and Medical Education as well as international organizations such as the World Health Organization were also reviewed. Reference lists of selected studies were manually screened to identify additional relevant publications.

Eligibility Criteria

Studies were eligible if they directly addressed the HTP and its influence on at least one dimension of COVID-19 response, including lockdown measures, digital surveillance, laboratory and testing capacity, social protection, or vaccination. Both peer-reviewed research and credible policy reports were included. Publications were excluded if they did not explicitly reference the HTP, focused only on clinical outcomes without broader system implications, or presented commentary without empirical or policy evidence.

Study Selection

All search results were imported into a reference management program, and duplicates were removed. Screening was conducted in two stages. Titles and abstracts were first reviewed for relevance, followed by full-text screening of potentially eligible studies. Two reviewers independently assessed all records, and disagreements were resolved through discussion until consensus was reached. The process of study identification, screening, eligibility assessment, and final inclusion is summarized in the PRISMA flowchart (Figure 1).

Data Extraction and Statistical Analysis

A thematic analysis approach was applied to organize findings across the included studies. Deductive codes were developed from established health policy performance indicators such as access, equity, responsiveness, and adaptability, while inductive codes were derived from contextual features frequently

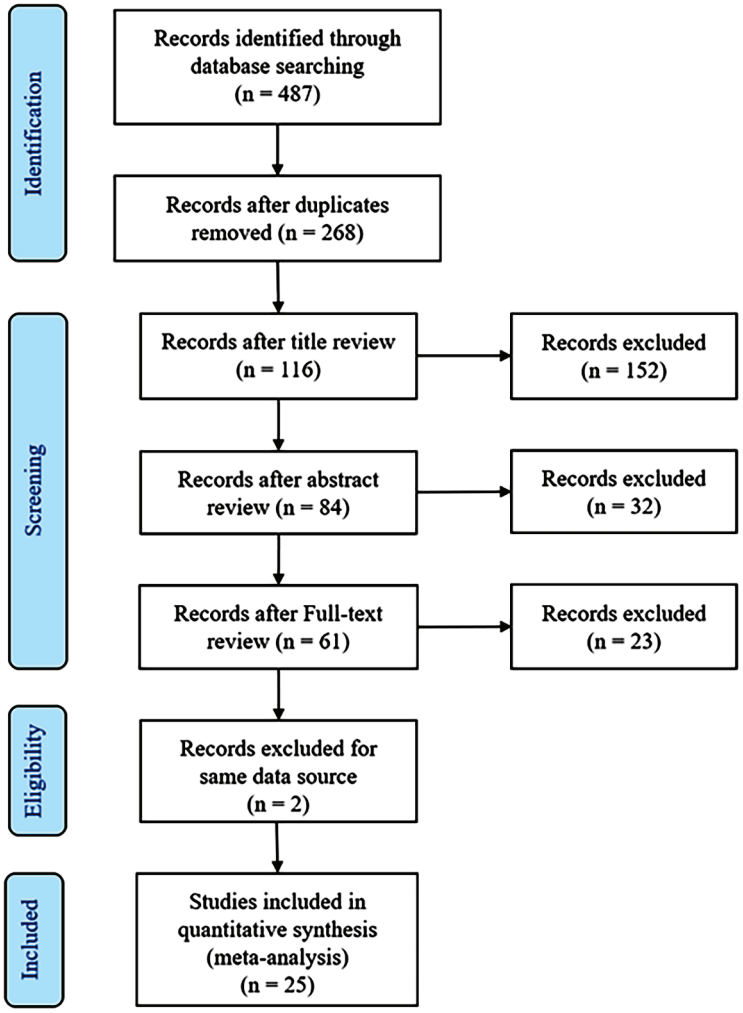

Figure 1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram illustrating the study selection process

emphasized in the literature, including sanctions, political ideology, and cultural constraints. Each selected document was coded manually to extract relevant content on the HTP's pandemic-era performance across five thematic pillars: mobility restrictions, digital surveillance, diagnostic capacity, worker support, and vaccine rollout.

Where studies reported quantitative data, descriptive and comparative statistics were also extracted. These included indicators of financial protection such as out-of-pocket (OOP) spending, catastrophic health expenditure (CHE), and equity measures including the Gini coefficient, as well as data on vaccination coverage and diagnostic capacity. Such quantitative evidence was used to complement the thematic synthesis and provide comparative insight into temporal and structural variation in the HTP's performance during COVID-19.

Quality Assessment

Studies were considered high-quality if they presented clear analytic frameworks (e.g.,

Table 1: Summary of COVID-19 response policies in Iran and their alignment with the Health Transformation Plan

Policy Domain	Observed Policy	HTP Linkage	Outcome	Sources
Lockdown Enforcement	City-wide quarantines omitted; partial and delayed curfews	No formal HTP enforcement mechanism	Early viral spread; weak compliance; political sensitivities dominated	5,10,11,20,21
Digital Contact Tracing	98% of apps were informational; reliance on 4030 hotline	HTP lacked digital surveillance infrastructure	Tracing ineffective; fragmented data; analog reliance	3,7,9,19,22
Diagnostic Testing	Limited capacity; initial reliance on temperature checks; slow expansion	HTP investments not directed toward lab readiness	Delayed confirmation; underdiagnosis; lagging scale-up	3,9,20,23,24
Worker Compensation	Wage subsidies for formal workers only	HTP lacked integrated social protection	Exclusion of informal workers; dissatisfaction; mental health stress	3,5,6,15,24
Vaccine Strategy	Initial ban on U.S./U.K. vaccines; later imports and Barakat rollout	No direct HTP coordination; political ideology dominant	Slow early rollout; later recovery; fluctuating trust	6,7,12,16,17

Kingdon's Multiple Streams Framework, equity impact assessments), employed publicly accessible data, and demonstrated internal consistency in argumentation. In cases of conflicting interpretations, greater weight was assigned to consensus views supported across multiple documents.

Results

This section presents the main findings organized around five critical domains of Iran's COVID-19 response in relation to the (HTP): lockdown enforcement, digital contact tracing, diagnostic and testing infrastructure, worker compensation and equity, and vaccine rollout. Tables 1 and 2 summarize the policy evidence and performance assessments.

Lockdown Enforcement and Mobility Policy Gaps

At the onset of the pandemic, Iran refrained from imposing city-wide lockdowns, relying instead on curfews and limited geographic restrictions. Despite rapid transmission in Qom and Tehran, authorities delayed mobility controls, citing fears of unrest, disruption of national events, and economic vulnerability under sanctions [10,11]. Checkpoints introduced in March 2020 were weakly enforced, and major holidays such as Nowruz saw widespread travel [5,21]. These delays fueled viral spread in densely populated and religiously active regions. The HTP lacked any emergency preparedness or enforcement mechanisms, leaving containment decisions to political calculation rather than public health modeling [7,8,12,20].

Digital Contact Tracing and Surveillance Deficiencies

Iran's digital response was limited. While multiple mobile applications were created, 98% were informational rather than designed

Table 2: Policy quality assessment across core domains of Iran's COVID-19 response

Domain	Responsiveness	Coordination	Data Integration	Equity Impact	Overall Quality
Lockdown Enforcement	Delayed action	Fragmented	No surveillance	Urban poor disadvantaged	Low
Digital Contact Tracing	Passive apps	Uncoordinated	Analog systems	Low rural reach	Low
Diagnostic Testing	Gradual expansion	Inconsistent	Weak integration	Uneven regional access	Low to Moderate
Worker Compensation	Formal-only aid	Multi-agency	No targeting data	Informal sector excluded	Low
Vaccine Strategy	Improved later	Reactive shift	Poor early tracking	Coverage improved post-2021	Moderate

for exposure alerts [9]. The 4030 Call System functioned as a nationwide triage hotline but could not replace real-time tracing [22,23]. Weak inter-agency data integration and public distrust in surveillance further eroded participation [7,12]. These gaps reflected structural omissions in the HTP, which had not prioritized digital health investments or pandemic surveillance. The absence of integrated data governance hindered outbreak detection, risk mapping, and mobility monitoring [3,4,13,19].

Diagnostic Testing Infrastructure and Case Identification

Early strategies relied on superficial screening such as temperature checks, which failed to detect asymptomatic cases [9,12]. Laboratory capacity was confined to a few centralized facilities, and although scale-up occurred, it lagged behind epidemiological demand [23,24]. The HTP had emphasized hospital upgrades and insurance expansion but neglected laboratory readiness, point-of-care diagnostics, and supply chain resilience [2,13]. These structural weaknesses produced delays in case confirmation, underreporting, and the inability to sustain test–trace–isolate protocols [9,24].

Worker Compensation and Equity Failures

Government relief efforts included wage subsidies and loans for registered businesses, but informal workers, who make up a significant share of the labor force-were largely excluded [6,11]. Daily wage earners and undocumented employees lacked access to insurance or emergency transfers, fueling dissatisfaction and mental health distress [7,24]. The HTP had not integrated social protection or vulnerability mapping, and the absence of a NVD meant informal groups were invisible to policymakers [1,3,15].

Vaccination Strategy: Political Delay and Recovery

Vaccine policy was shaped by geopolitical considerations. In January 2021, the Supreme Leader banned U.S. and U.K. vaccines, delaying access to highly effective doses and provoking criticism from health professionals [6]. The government promoted domestic production, especially the COVIran Barakat vaccine, which received emergency

authorization in mid-2021 [17]. Rising deaths and pressure eventually led to a policy reversal, and imports from China, Russia, and India were approved [12,16]. Expanded clinics and mobile units accelerated rollout, and by November 2021 about half the population was fully vaccinated [16]. Although coverage improved, the early delay undermined trust and contributed to preventable mortality [5,6]. The HTP provided no framework for vaccine prioritization, cold-chain logistics, or procurement planning, leaving strategies improvised under crisis [3,4].

Across all five domains, a recurring weakness was the absence of integrated data systems and institutionalized preparedness mechanisms. Whether in lockdown enforcement, digital tracing, diagnostic capacity, worker compensation, or vaccination rollout, the HTP's design offered visibility but little adaptability. Political sensitivities and fragmented governance frequently overrode evidence-based action, while the lack of a NVD and interoperable information flows constrained the ability to target interventions or protect marginalized groups. These systemic gaps limited the resilience of Iran's health system during the pandemic and form the central themes for further analysis in the discussion section.

Discussion

Key Findings

The COVID-19 pandemic functioned as a critical stress test for Iran's Health Transformation Plan (HTP), exposing institutional weaknesses that undermined the country's ability to respond effectively and equitably [2,13]. Originally designed to reduce out-of-pocket (OOP) spending, expand insurance coverage, and enhance hospital services, the HTP did achieve visible gains in financial protection and access [1,14]. However, this review shows that its structural design lacked flexibility, resilience, and integration, qualities essential for crisis governance. Five domains, lockdown enforcement, digital surveillance, diagnostic testing, worker protection, and vaccination, demonstrated that political will without institutionalized capacity, coordination, or robust data systems produces brittle reforms [3,12].

Lockdown and Containment: Governance Gaps

Iran's initial reluctance to impose city-wide lockdowns, despite epidemiological warnings, illustrated the disjuncture between scientific evidence and political decision-making [10,11]. Early transmission hotspots such as Qom and Tehran required decisive containment, but authorities delayed action due to economic fragility, fears of social unrest, and sensitivities around major national events [5,21]. Religious institutions in Qom resisted closure of pilgrimage sites, and the state lacked the authority or political will to override clerical influence [8,12]. By the time checkpoints were established in March 2020, Nowruz travel had already amplified viral spread nationwide.

The HTP had no provisions for emergency governance, inter-sectoral coordination, or decentralized enforcement capacity [4,20]. Local authorities lacked both mandate and resources to impose restrictions. The plan's emphasis on hospitals and insurance reform meant that preparedness, adaptability, and enforcement were neglected [3,13]. This absence of a crisis governance framework contributed to exponential case growth in the pandemic's earliest phase, undermining Iran's ability to

flatten the curve.

Digital Surveillance and Risk Communication: Missed Opportunities

Digital infrastructure is central to pandemic control, but Iran's response was fragmented and underdeveloped [9,12]. Although several mobile applications were introduced, 98% served purely educational functions rather than enabling real-time tracing or exposure notification [9]. The 4030 hotline became a lifeline for millions of non-critical consultations and mental health support, but it could not replicate the epidemiological power of automated alerts or geospatial analytics [22,23]. The HTP had not prioritized digital integration, electronic health records, or cross-sectoral data-sharing protocols [3,4]. This omission meant that even when regional actors such as the Red Crescent collected data at highway checkpoints or local officials gathered reports from clinics, there was no national platform to consolidate or visualize the information [20]. The result was fragmented intelligence, delayed outbreak recognition, and limited targeting of interventions.

Equally important was the failure of risk communication. Mixed government messages, suppression of independent medical voices, and even arrests for "spreading rumors" deepened public skepticism [7,19]. Public distrust limited participation in voluntary tracing efforts and reduced compliance with guidelines. Without transparency and consistent messaging, digital interventions lost legitimacy.

Diagnostic Testing: Weak Infrastructure, Delayed Scaling

Testing capacity during the initial months was highly constrained, limited to a handful of centralized laboratories with inadequate supply chains for reagents and test kits, exacerbated by international sanctions [6,24]. Authorities resorted to crude screening tools such as temperature checks, which failed to detect asymptomatic or mild infections [9,23]. Underdiagnosis fueled silent transmission and obscured the true trajectory of the outbreak.

The HTP had previously directed resources to hospital upgrades and specialist payments but neglected laboratory readiness, epidemiological surveillance, and decentralization of diagnostic services [2,13]. As a result, scale-up lagged behind epidemiological demand. Even as labs expanded, the absence of interoperable reporting systems meant results were scattered across agencies rather than feeding into a centralized dashboard [3]. Without timely, integrated diagnostics, test–trace–isolate strategies could not be operationalized [12,19]. These differences between diagnostics and digital health intelligence reflected the broader structural weaknesses of the HTP.

Worker Protection and Social Equity: Informal Labor Excluded

The economic shock of COVID-19 was especially severe for Iran's large informal workforce, estimated at more than half of total labor [6,11]. Government relief efforts, including wage subsidies and low-interest loans-were limited to formally registered employees and businesses, leaving day laborers, street vendors, and undocumented workers without meaningful support [5,24]. Public frustration over exclusion compounded mental health stress and reduced compliance with restrictions [7,24].

The HTP had never integrated social protection or vulnerability mapping into its framework. Without a NVD or registries for informal workers, the state lacked the

capacity to target economic assistance [3,15]. The misalignment between health reforms and social protection meant that pandemic interventions disproportionately favored formal workers while marginalizing the vulnerable. This undermined equity and eroded trust in government commitments to financial protection [1,14].

The Iranian case highlights a broader principle: health system resilience is inseparable from social policy architecture. Without integrating health and welfare data systems, reforms risk reinforcing the very inequities they are meant to reduce [4,19].

Vaccination: Political Delay and Recovery

Vaccine rollout revealed the intersection of politics and health governance. In January 2021, the Supreme Leader's ban on U.S. and U.K. vaccines delayed access to highly effective immunizations [6]. This decision, driven by geopolitical distrust rather than scientific evidence, came as many countries were scaling up campaigns [16,17]. Mortality surged during this critical period, and confidence in the state's health leadership weakened [7,12].

Eventually, imports from China, Russia, and India, along with the domestically produced COVIran Barakat vaccine, accelerated distribution [16,17]. Mobile clinics and extended vaccination hours expanded coverage, and by late 2021 approximately half the population had received two doses [12,16]. Nonetheless, the early delay cost lives and highlighted the absence of pre-planned procurement pipelines, prioritization frameworks, and cold-chain logistics in the HTP [3,12]. Vaccine strategy had to be improvised under crisis, further exposing the rigidity of a reform program overly focused on curative care.

Comparison with Broader Literature

The findings of this review align with broader evidence on health system fragility in resource-constrained and semi-authoritarian contexts. Studies of the HTP have long underscored its top-down design, limited stakeholder engagement, and insufficient adaptive capacity [2,15]. Comparable challenges were documented in India and Egypt, where centralized decision-making slowed the integration of surveillance and relief targeting during the pandemic [5,19]. Nigeria's primary care rollout and India's early lockdown also demonstrated the dangers of technical planning that ignored social complexity.

Kingdon's Multiple Streams Framework helps explain these patterns. The HTP initially benefitted from a convergence of problem recognition, policy proposals, and political will. However, during the pandemic this alignment unraveled. Fiscal limits, political sensitivities, and a lack of viable policy alternatives prevented adaptation [15,18]. The failure to pivot the HTP toward a crisis-oriented model reflects the absence of institutionalized learning mechanisms that could sustain reforms beyond their initial political window.

Clinical and Policy Implications

The Iranian experience underscores the need for reforms that embed adaptability, equity, and data-driven intelligence. A NVD could have allowed authorities to map informal workers, elderly populations, and comorbid patients, improving the targeting of both social protection and health interventions [3,14]. Interoperable digital systems would enable outbreak detection, mobility monitoring, and real-time triage [9,19,22].

Clinically, delays in diagnostics and vaccination placed unsustainable burdens on

hospitals and likely increased mortality [17,24]. Inconsistent messaging further eroded compliance, undermining mask mandates and other community-level interventions [7,10]. Future reforms must institutionalize not only technical preparedness but also transparent communication and stakeholder engagement [12,20].

Strengths and Limitations

This review's strength lies in its triangulation of institutional critique, policy analysis, and pandemic response evaluation. Applying Kingdon's framework adds interpretive depth, clarifying why reforms failed to adapt under stress. However, the review is limited by its reliance on secondary data. No primary fieldwork or interviews with frontline actors were conducted, and causal claims about outcomes are based on descriptive rather than inferential evidence. The absence of disaggregated data also restricted the analysis of rural–urban and socioeconomic disparities. These limitations reflect the constraints of available documentation rather than analytical oversight.

Conclusion

Iran's Health Transformation Plan improved coverage and reduced out-of-pocket costs but lacked the adaptability needed during COVID-19. Weaknesses in lockdowns, digital surveillance, diagnostics, worker protection, and vaccination reflected its hospital-centric and top-down design. To build resilience, reforms must integrate social protection, strengthen interoperable data systems, and decentralize preparedness. These lessons extend beyond Iran, offering guidance for health reforms in resource-constrained and politically complex settings.

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References

1. Bordbar S, Gholampoor H, Jalali FS, Delavari S. The Effect of Iran Health Transformation Plan on Equity in Health Financing: A Systematic Review. Iran J Public Health. 2023;52(9):1844-54.
2. Doshmangir L, Moshiri E, Mostafavi H, Sakha MA, Assan A. Policy analysis of the Iranian Health Transformation Plan in primary healthcare. BMC Health Serv Res. 2019;19(1):670.
3. Darvishi B, Behzadifar M, Ghanbari MK, Ehsanzadeh SJ, Bakhtiari A, Behzadifar M, et al. Financial Protection Indexes and the Iranian Health Transformation Plan: A Systematic Review. Yale J Biol Med. 2021;94(3):465-76.
4. Doshmangir L, Najafi B, Mostafavi H, Moshiri E. Future Development Through the Past: Pathology of the Financing Dimension of Iran's Health Transformation Plan. Clinicoecon Outcomes Res. 2020;12:345-54.
5. Fawcett L. The Middle East and COVID-19: time for collective action. Global Health. 2021;17(1):133.
6. Heidari M, Jafari H. Challenges of COVID-19 Vaccination in Iran: In the Fourth Wave of Pandemic Spread. Prehosp Disaster Med. 2021;36(5):659-60.
7. Azh N, Najafimoghadam T, Motamed Gorji N, Koohpayehzadeh J, Asadi Lari M, Tavakoli N, et al. Risk Communication in Early Containment of COVID-19 Pandemic in Iran: Implementation of the World Health Organization Strategic Preparedness and

Response Plan (WHO-SPRP). Med J Islam Repub Iran. 2022;36:143.
8. Mirzania M, Shakibazadeh E, Ashoorkhani M. Challenges for implementation of inter-sectoral efforts to improve outbreak response using consolidated framework for implementation research; Iran's COVID-19 experience. BMC Health Serv Res. 2022;22(1):1118.
9. Moeini M, Heidari K, Rezaee M, Hadadpour A, Amini Z. Iran's experience in controlling and managing COVID-19: A lesson for developing countries. J Res Med Sci. 2021;26:100.
10. Tabari P, Amini M, Moghadami M, Moosavi M. International Public Health Responses to COVID-19 Outbreak: A Rapid Review. Iran J Med Sci. 2020;45(3):157-69.
11. Nojomi M, Moradi-Lakeh M, Pourmalek F. COVID-19 in Iran: What was done and what should be done. Med J Islam Repub Iran. 2021 29;35:97.
12. Takian A. The Islamic Republic of Iran: a primary health care case study in the context of the COVID-19 pandemic. 2022: World Health Organization. Available from: https://iris.who.int/bitstream/handle/10665/366316/9789240063761-eng.pdf?sequence=1
13. Ghasemyani S, Raoofi S, Hamidi H, Khodayari-Zarnaq R. Iran's Health Transformation Plan; Main Issues and Opportunities for Improvement: A Systematic Review. Iran J Public Health. 2022 Sep;51(9):1977-89.
14. Nemati E, Khezri A, Nosratnejad S. The Study of Out-of-pocket Payment and the Exposure of Households with Catastrophic Health Expenditures Following the Health Transformation Plan in Iran. Risk Manag Healthc Policy. 2020;13:1677-85.
15. Behzadifar M, Shahabi S, Bakhtiari A, Azari S, Ehsanzadeh SJ, Yarahmadi M, et al. Assessing the development of health technology assessment in Iran: a policy analysis using Kingdon's Multiple streams framework: a qualitative study. BMC Public Health. 2025;25(1):226.
16. Ghafari M, Hosseinpour S, Rezaee-Zavareh MS, Dascalu S, Rostamian S, Aramesh K, et al. A quantitative evaluation of the impact of vaccine roll-out rate and coverage on reducing deaths: insights from the first 2 years of COVID-19 epidemic in Iran. BMC Med. 2023;21(1):429.
17. Mohraz M, Salehi M, Tabarsi P, Abbasi-Kangevari M, Ghamari SH, Ghasemi E, et al. Safety and immunogenicity of an inactivated virus particle vaccine for SARS-CoV-2, BIV1-CovIran: findings from double-blind, randomised, placebo-controlled, phase I and II clinical trials among healthy adults. BMJ Open. 2022;12(4):e056872.
18. Amerzadeh M, Salavati S, Takian A, Namaki S, Asadi-Lari M, Delpisheh A, et al. Proactive agenda setting in creation and approval of national action plan for prevention and control of non-communicable diseases in Iran: The use of multiple streams model. J Diabetes Metab Disord. 2020;23(2):1437-48.
19. Katoue MG, Cerda AA, García LY, Jakovljevic M. Healthcare system development in the Middle East and North Africa region: Challenges, endeavors and prospective opportunities. Front Public Health. 2022;10:1045739.
20. Gouya MM, Seif-Farahi K, Hemmati P. An overview of Iran's actions in response to the COVID-19 pandemic and in building health system resilience. Front Public Health. 2023;11:1073259.
21. Kaffashi A, Jahani F. Nowruz travelers and the COVID-19 pandemic in Iran. Infect Control Hosp Epidemiol. 2020;41(9):1121.
22. Senga M, Kouhestani M, Hosseini

Boroujeni SM, Ghaderi E, Parchami P, Hussain SJ. Risk communication and community engagement as an emerging pillar of health emergency management in Iran: Achievements and the way forward. Front Public Health. 2023;11:1097932.
23. Raeisi A, Tabrizi JS, Gouya MM. IR of Iran National Mobilization against COVID-19 Epidemic. Arch Iran Med. 2020;23(4):216-9.
24. Shabani A, Naserbakht M, Ghalichi L, Hajebi A, Asadi A, Rasoulian M. The Need for Revitalizing the Public Mental Health Services System. Iranian Journal of Psychiatry and Clinical Psychology, 2025;31(1):E4.3.

Footnotes and Financial Disclosures

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