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Health Transformation Plan Achievements and Outcomes in Iran (2014-2020): A Scoping Review

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Abstract

Background: The Health Transformation Plan (HTP), the latest reform in Iran's health system to achieve the 3 main goals of financial protection, equity, and quality of health care, was started on May 5, 2014. This study aimed to review all available literature regarding the achievements and outcomes of this reform after 6 years of its implementation.

Methods: The 5 English databases were examined by using appropriate keywords to find documents published on the HTP between June 5, 2014, and the end of April 2020. Out of 532 recovered articles, 137 were included in the study. The study's organization was based on the Arkesy and O'Malley framework and data analysis was done using the content analysis method.

Results: The findings of the study were divided into 11 sections. Studies on the plan's impact on financial protection (22.6%), performance indicators (14.5%), and natural delivery promotion (14.5%) were the most frequent, respectively. Regarding the impact of the HTP on patient satisfaction ,performance indicators, and efficiency, mostly positive results have been obtained. However, in terms of the impact of the HTP on financial protection and informal payments, the outcomes have been different, contradictory, and sometimes negative.

Conclusion: Although the HTP has successfully achieved a number of its goals, in some of the goals, the results are not significant. Given the changing health conditions and funding constraints, it is better to consider measures to fundamentally review the HTP and executive packages.

Keywords: Heath Transformation Plan, Health Reform, Health System, Iran

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Introduction

Health system reform means making purposeful and sustainable changes in the health system to improve its efficacy, efficiency, and equity (1). The World Health Organization (WHO) has defined health system reform as

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↑What is "already known" in this topic:
The Health Transformation Plan (HTP) has been implemented gradually in several phases to facilitate the achievement of universal health coverage. The HTP has been implemented in different areas, and different studies have examined different parts. Still, there is no comprehensive view of the program's achievements.

→What this article adds:
Regarding the effect of an HTP on patient satisfaction, performance indicators, and the efficiency were positive and clear. Still, particularly, the impact of this plan on the indicators of financial protection and informal payments of the obtained results is unclear, which seems to be the need for more comprehensive studies in various settings to examine these dimensions.

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"a sustained process of fundamental change in policies and organizational arrangements of the health sector, usually guided by the government" (2). In recent decades, health systems' failure to meet the emerging needs and expectations in health, treatment, and rehabilitation has led to international interest in reforming the health systems through economic mechanisms (3). In many countries, these reforms have had more or less positive impacts on the health system (4).

In recent decades, Iran's health system has undergone several structural and organizational reforms (5), including the establishment of the primary health care system (1980) (6), the integration of medical education with health care services (1985) (7), the establishment of Public Health Insurance Law (1994) (8), the modern system of hospital administration (1995) (9), Family Physician Program (2005), and Health Transformation Plan (2014) (10). Despite these reforms and other efforts to achieve universal health coverage in Iran, the country's healthcare system still faces many challenges in the areas of financing, access to services, efficiency and productivity, service quality, medical service tariffs, service packages, and patient satisfaction(11-13).The failures of health reforms in Iran have been attributed to reasons, such as lack of strong political support, Insufficient budget allocation, and governance challenges (14, 15).

As mentioned, the latest health system reform plan implemented in Iran is the HTP (16), which was launched in May 2014 with the goals of facilitating universal health coverage, improving patients financial protections, service quality, and equity of access (17, 18). In its initial phase, the HTP mainly focused on treatment services. In August 2014, another phase of the HTP began focusing on the country's primary health care services. Other stages of the reform plan began in September 2014 with establishing the new book: The Relative Value of Health Services. In January 2015, the performance-based payment system (known as Ghasedak plan) was implemented for no physician staff working in the country's hospitals (19). The HTP included increasing health insurance coverage, improving financial protections, ensuring the equitable distribution of specialists, improving hoteling services, promoting natural delivery, improving financial protections for patients with incurable diseases, and air emergency medical services (12).

Implementation of this plan, like other projects, can be successful or unsuccessful in achieving the set goals. In recent years, several studies have been conducted to evaluate the achievements and outcomes of the HTP. For example, a study by Adel et al on 24 hospitals in Mashhad from 2013 to 2017 reported a decrease in out of pocket payment from 20% to 8% (20). Another study has reported that the number of households facing catastrophic health costs has decreased from 2.9% to 2.1% nationally (21). However, according to a study by Kazemi et al on 600 households in a deprived region, 29.9% of these households faced catastrophic health expenditure (22). Also, in a study by Doshmangir et al, 14% of respondents stated that they had made informal payments (23). Considering the inconsistent reports of different studies regarding the outcomes of the HTP, a scoping review of these studies may be able to shed more light on the issue. Therefore, this study aims to determine the achievements and outcomes of this plan, 6 years after implementation, to help health policymakers develop and implement future corrective measures.

Methods

The present scoping review study was conducted in 2020. This study can be considered a quick review of key concepts in a particular research topic and finding the primary sources. A scoping review, especially on complex topics or topics that have not been comprehensively reviewed before, can be implemented as a specific project. A scoping review is also a secondary study used to synthesize research evidence from original research studies if a researcher seeks to find answers to questions such as "what" and "why" in a particular subject area, among the study methods, scoping review is a more appropriate option (24, 25).

Arksey and O'Malley have published the first methodological framework for conducting scoping review research, which includes 5 proposed steps: (1) identifying the research questions; (2) identifying relevant studies using valid databases, reviewing gray literature, dissertations, review articles, and references of studies; (3) selecting studies; (4) extracting data in the form of figures and tables; and (5) collecting, summarizing, and reporting the data (26). This study's research questions were as follows: In general, what lessons have been learned on the outcomes of the HTP? In what areas and settings have these studies been conducted ? What have been the consequences (positive and negative) in various areas?

We searched 5 electronic databases: PubMed, Scopus, and Web of Science, Magiran, SID, and Google Scholar. The last search was completed on May 20, 2020. All databases were searched between June 5, 2014, and the end of April 2020. The keywords used for the search included Mesh terms and common keywords related to the subject matter, including “health system reform, health sector evolution plan, Health Transformation Plan, and Iran” in English, and “the Persian Health Transformation Plan and Iran.” The PubMed database search strategy was as follows: (“health system reform” OR “health reform” OR “health sector evolution plan” OR “health transition” OR “health transition plan” OR “health transformation” OR “health transformation plan”) AND (Iran).

The list of articles obtained on the HTP was also manually searched and related articles were extracted .Also, Payesh and Hakim journals in Persian and several English-language Iranian articles were searched separately. The criteria for including articles in the scoping review were as follows: (1) published studies presenting results of Iranian health transformation plan, (2) quantitative studies, and (3) written in Persian or English. Those studies whose results were not clear, or designed as letters to the editor, editorials, case reports, case series, commentaries, or conference abstracts were excluded.

In total, 532 articles were extracted. Search results were imported into EndNote X8 reference management soft-

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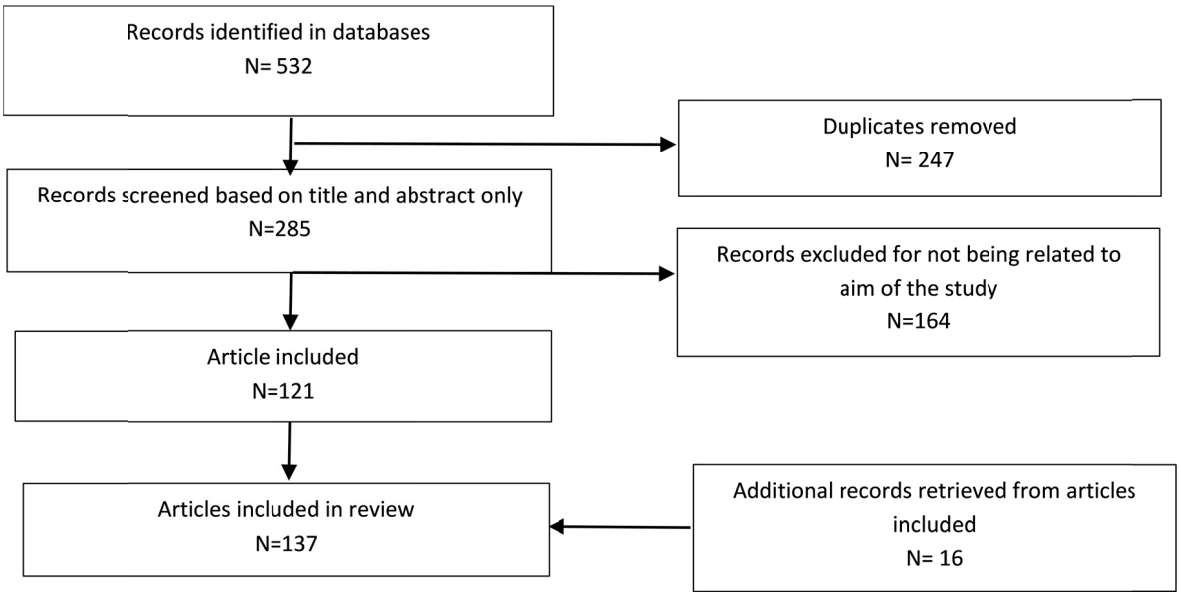

Fig. 1. Flow diagram of study selection

ware, and duplicates were removed. First, the articles' titles were evaluated and screened according to the inclusion and exclusion criteria. Articles on the HTP were obtained at this stage.Then, 164 unrelated articles that were not quantitative and related to health transformation plan goals were deleted, and 121 items remained. A total of 16 articles were found from the review of the article reference. Finally, 137 articles were selected for the final review. The screening process and search results are shown in Figure 1.

Data analysis in this study was performed using the content analysis method.This stage is the arrangement of key items obtained from the reviewed articles, including combining and interpreting data through screening, sorting, and classifying information according to key research questions. Finally, the results were analyzed using a content analysis .Thus, a preliminary study was conducted to identify the extracted studies. A thematic framework was designed based on specific codes of studies, and another researcher reviewed each study, and the findings were placed within the specific extraction codes.

In the next step, following the pattern and semantic relationship and sometimes merging the main codes, domains, and topics extracted, the findings were organized within these domains. Finally, after checking and rechecking these domains, they were classified according to the research questions. The results were presented in the form of tables and figures. We did not use any software to analyze the data.

Results

From 2014 to 2020, a total of 137 articles reported on the achievements and outcomes of HTP in Iran. Of these137 articles, 134 were quantitative studies and 3 were mixed studies. A total of 83 of these articles were published in Persian and 54 in English. The journals with the largest number of articles published on the subject were the Health Scope Journal (7 articles), the Journal of Mazandaran University of Medical Sciences (5 articles), the Journal of Rafsanjan University of Medical Sciences (5 articles), Payesh Health Monitor Journal (5 articles), Hakim Research Journal (4 articles), the International Journal

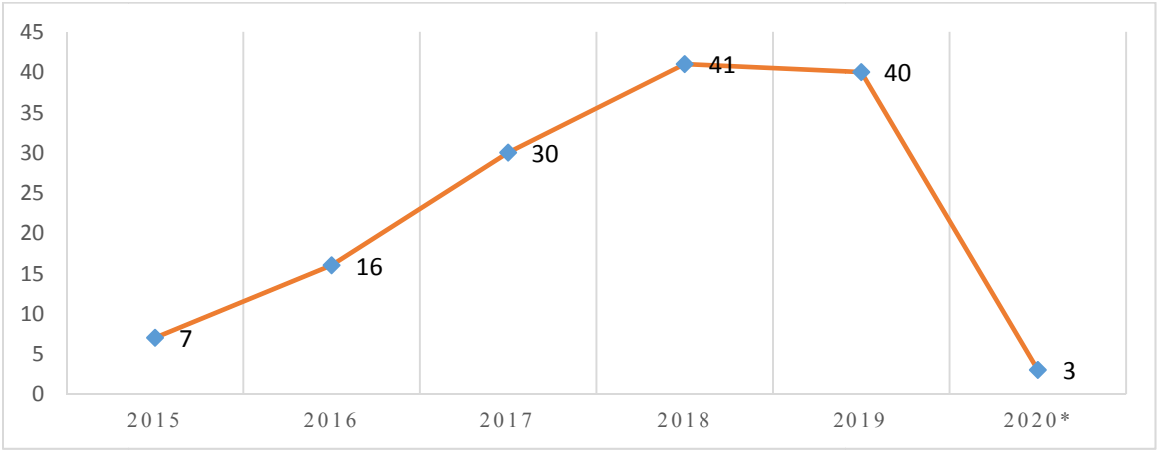

Fig. 2. Frequency distribution of studies on health transformation plan by year of publication (* Searching for articles until May 5, 20120)

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of Health Planning and Management (4 articles), and Qom University of Medical Sciences Journal (4 articles). The highest number of articles (41) were published in 2018 (Fig. 2)

Most authors were specialized in health care management and health economics. The authors with the largest number of articles were Piroozi from Kurdistan University of Medical Sciences (8 articles), Khammarnia from Zahedan University of Medical Sciences (4 articles), and Zarei from Shahid Beheshti University of Medical Sciences (4 articles). Most of the research related to the HTP was conducted in Tehran province, a combination of several provinces, Fars province, and Kurdistan province, respectively (Fig. 3).

Most of the articles examined the impact of the HTP on out of pocket payments, health expenditure, and impoverishment cost, hospital performance indicators, and the promotion of natural delivery, respectively (Fig. 4) and most studies were cross-sectional (Fig. 5).

Impact of HTP on Financial Protection (Out of Pocket Payments, Catastrophic Health Expenditure, and Impoverishment Health Expenditure)

A total of 31 studies had investigated the impact of the HTP on financial protection. Most of these studies had used the data collected from the Household Expenditure and Income Survey (HEIS) and patient records. Six of these studies reported the percentage of households facing catastrophic health expenditure increased after the implementation of the HTP. In rural households, the percentage of households facing catastrophic health expenditure was higher than urban households (27, 28). On the contrary, 6 studies reported a decrease in this index. Two studies reported a decrease in impoverishment health expenditure, and 3 reported an increase in these costs. Two studies reported no significant change about the out of pocket payments, 13 reported a decrease, and 2 reported an increase in these payments. The highest out of pocket payments were related to pharmaceutical costs. A survey of the hospital uncovered expenses by insurance showed that such expenses make 21.8% of the total bill for hospitalized patients on average (29). One study reported that before the implementation of the HTP, a household out of pocket was about 50%, and after HTP, it decreased to 40% in the public and private sectors and less than 10% in the public sector (30).

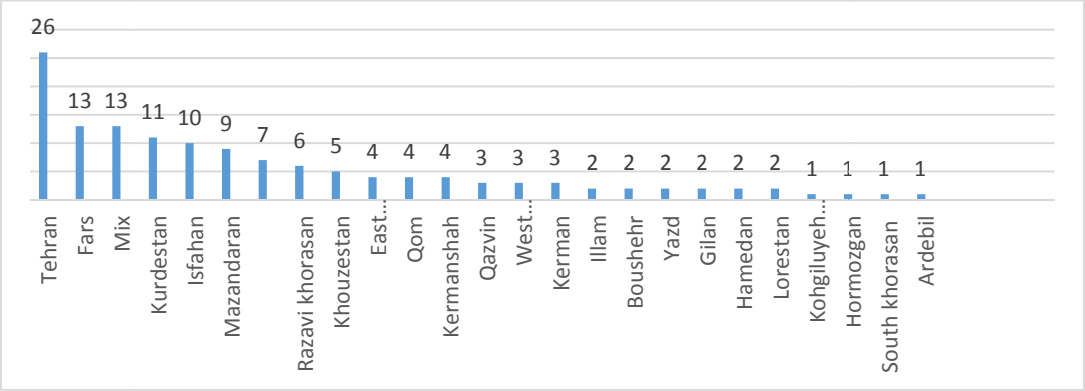

Fig. 3. Frequency distribution of studies on health transformation in different provinces of Iran.

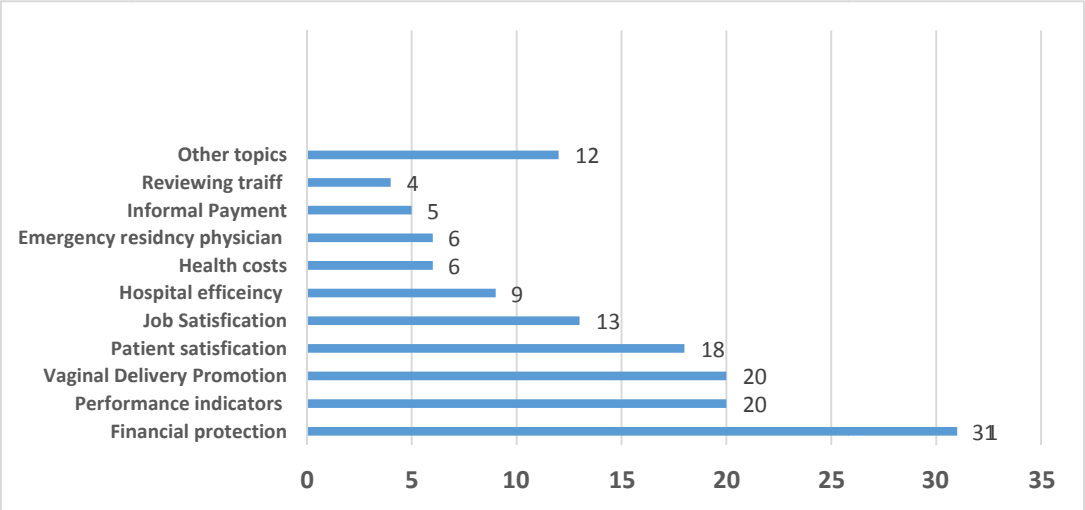

Fig. 4. Frequency distribution of studies on various topics
* A number of articles have combined several topics.

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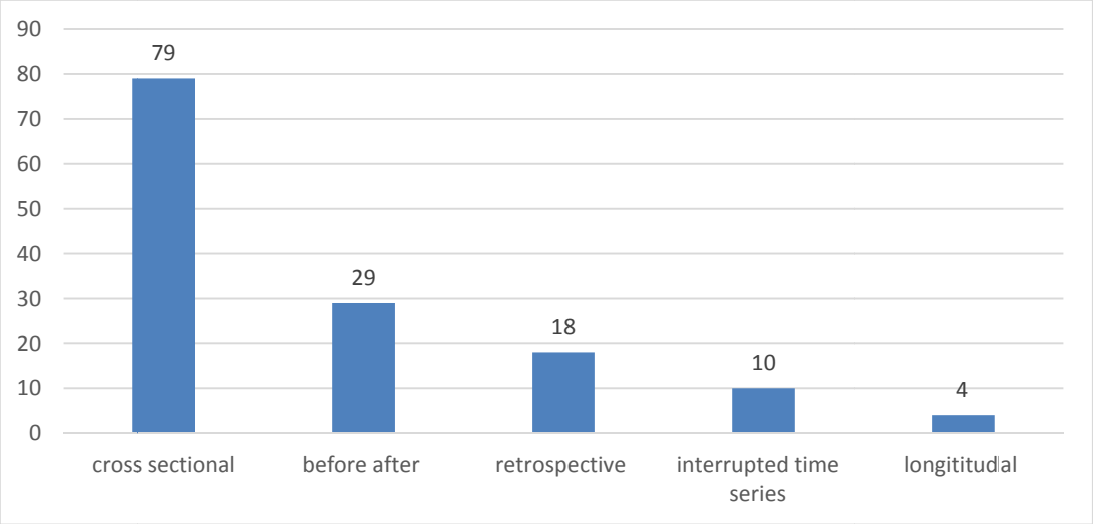

Fig. 5. Frequency distribution of studies by type of study

Impact of HTP on Hospital Performance Indicators

Twenty studies had investigated the impact of HTP on hospital performance indicators, such as bed occupancy rate, the mean length of stay, bed turnover rate, and the number of surgeries. Most of these studies showed an increase in the bed occupancy rate, bed turnover rate, hospitalization rate, outpatient visits, and the number of surgeries after the implementation of the HTP. In contrast, a few studies showed a decrease in the hospital bed turnover rate (31, 32).Overall, the results suggested that the plan had a positive effect on hospital performance indicators. In one study that examined a hospital's performance over 48 months using a dynamic multi criteria decision model, results showed that hospital performance scores improved over time (33). Also, 3 studies had examined the effect of HTP on the rate of hospital admissions. One of these studies found no statistically significant difference before and after the HTP (34). Still, the other reported a gradual increase in the number of admissions and hospital services after starting the plan (35).

Impact of HTP on the Rate of Natural Delivery

Twenty articles had examined the impact of the HTP on the rate of natural delivery and cesarean delivery. Most quantitative studies were descriptive-analytical or interrupted time series and had used hospital databases. These studies reported a reduction in the rate of cesarean delivery and an increase in the natural delivery rate after the HTP implementation. However, in most cases, the change was not statistically significant, and the target of reducing the rate of C-section to 10% per year was not fully achieved. One study showed that in total, the rate of C-section in 2013 was 45%, which dropped to 34% in 5 years after the implementation of the plan (36). The decrease in C-section varied from 14.02 % (37) to 2% (38) over 1 year.

Impact of HTP on the Patient Satisfaction

Eighteen studies had examined the effect of the HTP on patient satisfaction and service quality. Of these, 15 were descriptive/analytical and cross-sectional studies, which used a questionnaire to assess patients' satisfaction with hospital services. One of the studies that measured the satisfaction of comprehensive health centers clients showed an increase in pregnant women's satisfaction after the implementation of the HTP (39). The quantitative studies that measured patients' satisfaction with hospital services mostly showed an increase in satisfaction after implementing HTP, and satisfaction was assessed at an acceptable and desirable level. Patients' satisfaction with hospital services varied after the implementation of the HTP (40, 41).The highest satisfaction was with reducing out of pocket payments, access to medicine, and the quality of welfare services. The lowest satisfaction was with nursing care. In another study, the results showed an improvement in the quality of inpatient services but a decrease in the quality of nursing services (42).

Impact of HTP on the Employee's Satisfaction

The authors found 13 articles on the satisfaction of the employees with the HTP. Most of these studies showed an average level of satisfaction, and some showed below-average satisfaction, especially among nurses(43, 44). In one study, only 29.2% of nurses were satisfied with the HTP (45). In another study, about 27% of physicians and 70% of the resident were moderately satisfied with the HTP (46). One study reported that obstetricians and physicians were more satisfied with the HTP than midwives and anesthesiologists (13). One study that examined physicians' satisfaction with the physician's retention in deprived areas showed that 75.5% were satisfied, and 75.4% were satisfied with the accommodation facilities (47).

Impact of HTP on the Efficiency of Hospitals

Overall, 9 studies investigated the effect of HTP on hospital efficiency. Five of these studies used Pabon Lasso's method, and 4 had used data envelopment analysis (DEA) for their efficiency evaluations. One of the DEA studies reported that the implementation of the HTP increased the number of efficient units by 10% (48). Anoth-

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er study reported that hospitals' mean relative efficacy rose from 0.859 in 2012 to 0.934 in 2016 (49). In another study, the HTP was found to impact the technical, administrative, and scale efficiencies positively. This study reported that 74.21% of hospitals were operating inefficiently before the reform, but implementing the HTP reduced this rate to 70.80% (50). Of the 5 studies conducted using the Pabon Lasso's method, 4 showed positive changes in hospitals' position on the Pabon Lasso diagram, and only 1 showed a decline in efficiency after implementing the reform plan.

Impact of a Specialist Residency Program on the Emergency Department Performance Indicators

Six studies had examined the effect of the presence of a specialist residency program on the emergency department's performance indicators, including the percentage of patients organized within 6 hours, the percentage of patients released after 12 hours, the percentage of successful and unsuccessful cardiopulmonary resuscitations, the percentage of discharges against medical advice, and the meantime of triage. Of these 6 studies, 5 were quantitative, and 1 used a mixed method. Most of these studies showed that a resident specialist's presence improved the meantime of triage in the emergency department, the percentage of organized within 6 hours, and the percentage of patients released after 12 hours (51, 52). In most of these studies, there was also a significant reduction in the number of discharges against medical advice (51, 52).

Impact of HTP on the Total Health Costs

Seven studies had examined the effect of the HTP on total health costs. One of these studies, which investigated the direct health costs in selected insurance companies and universities of medical sciences, reported a 49% increase in the direct costs for universities, 130% for health insurance companies, and 118% for social security, and overall 92% increase in the total health cost (53). The results of 2 other studies also showed an increase in household health costs after the implementation of the HTP (54). A result of another study also showed an increase in admission, pharmaceutical, and equipment costs after the implementation of the HTP (42). Another study reported that after the implementation of the HTP, the mean cost of each admission rose more than 100%, the mean share of basic insurance, and the patient's share of payment increased from 5.31% to 6.5%, and the share of pharmaceutical and medical supplies from the total cost decreased from 32% to 11.7% (55).

Impact of HTP's Tariff Revisions on the Health Costs

Four articles were found on this subject, all showing an improvement in financial and performance indicators and the evaluated units' economic situation after the change in medical service tariffs. However, the improvement has not been homogenous across the different medical disciplines. One study showed that the HTP increased the relative value of some services by 190%, resulting in doubling the bills, which put a heavy financial burden on health insurance organizations (56). Another study that examined the impact of the HTP on tariffs for surgeries showed a significant increase in the normal and global surgeries' tariffs, leading to a higher burden on the health system (57).

Impact of HTP on Informal Payments

Five studies were found in this regard. Four of these studies were quantitative, while one was mixed. Two of these studies showed that the HTP reduced informal payments. In 1 of these 2 studies, the percentage of informal payments was estimated 2%, and in another study, it was claimed to be nearly 0% (58). In 2 other studies, the percentage of informal payment was estimated at 21.1% (59) and 14% (23). One study showed that before the HTP, the percentage of informal payments to physicians in hospitals affiliated to the Ministry of Health, Social Security Organization, and the private sector was 4.5%, 8.1%, and 12.5%, respectively. Still, after the HTP, these rates dropped to 0%, 7.1%, and 10% (60).

Others

Three studies had examined the effect of the HTP on the health system responsiveness using the WHO's responsiveness questionnaire. In these studies, the health system's responsiveness after the HTP was rated higher than average (61, 62).Three studies had examined the effect of the HTP on insurers' deductions from hospital bills. One of these studies reported that the HTP increased the deductions for all studied hospitals. Another article reported a decrease in deductions for one hospital. Another study investigating the effect of the HTP and relative value tariffs on deductions showed the deductions for each admission, and each outpatient had been increased 6-fold and 12-fold, respectively (63).Two studies had examined the impact of HTP on the quality of visits. One study showed that the mean visit time in 2016 (11.9 minutes) was better than in 2014 (8.4 minutes) (64). One study had investigated the effect of the HTP on induced demand, showing an increase in emergency admission ,the number of diagnostic tests, and specialist visits (65). In another study, the effect of the HTP on the number of patients who escape (flee) hospitals was investigated. This study showed that after implementing the HTP, there was a significant decrease in the number of patients escaping hospitals (66). A survey of the effect of the HTP on prescriptions showed that it reduced the number of drugs prescribed but had no impact on drug prices (67).

Discussion

This study aimed to determine the achievement and outcomes of the implementation of the Iranian HTP. A total of 137 articles published between June 5, 2014 and the end of April 2020, were deemed eligible for inclusion in the review. The results of studies showed different outcomes of plan implementation.

Most studies have shown a decrease in the patients' contribution to health care payments, which means a decrease in out of pocket payments. Also, most studies have reported a decrease in households that faced catastrophic health expenditures after the implementation of the HTP. However, some studies showed that many households, espe-

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cially in deprived and rural areas, still face catastrophic expenditures and even impoverishing costs. It has been attributed to an elderly person in the family, chronic diseases, and outpatient services. One reason for the decrease in out of pocket payments is the allocation of health subsidies and the increase in the scope and depth of basic health insurance for service recipients (21, 22, 60, 68).

This reform has significantly increased performance indicators because of an increased access to services because of reduced franchise fees, improved welfare facilities, and free of charge natural delivery services (69, 70). Some performance indicators, such as the mean of length of stay, which has increased because of hospitals' inefficiency, have also increased. It could be due to the decline in nursing services' quality because of the increase in patients' numbers and the consequent prolongation of treatment and recovery processes (71). In most hospitals, bed turnover time has been reported to be less than 24 hours, which is good according to the criteria defined by Iran's Ministry of Health. In total, the mean of the 3 indicators of bed occupancy rate, the mean length of stay, and the turnover show an improvement in hospitals' efficiency (69).

In most studies conducted in public hospitals, the C-section rate has decreased, but this reduction is far from the goal of a 10% annual reduction. Take measures, such as free natural deliveries, private midwives, increasing compensations, preparation, and educating mothers about the benefits of natural delivery, have been effective in this regard (36, 72). However, studies conducted in nongovernmental hospitals showed different results. Some of these studies have shown that the C-section rate in nongovernmental hospitals is not significantly different from before implementing the HTP. It suggests that some pregnant mothers choose to go to private hospitals instead of public hospitals to avoid new C-section rules (73). Another study has shown a decrease in the rate of C-sections in private hospitals, attributing it to this factor's effect on hospitals' accreditation (37).

After implementing the HTP, patient satisfaction seems to be related to the procurement of drugs and consumables medical equipment, the improved quality of facilities, reduced waiting time to access the doctor, and reduced informal payments (40, 74). The most common cause of dissatisfaction is the poor quality of nursing care and patient complaint management. Increasing the number of patients referred to hospitals after implementing this plan and the lack of time for nurses to take care of patients can be one reason (75).

Most nurses were dissatisfied with the plan, while most physicians were satisfied with the increase in salaries and benefits and improved medical diagnoses equipment. It seems that the main reasons for the increase in nurses' dissatisfaction are due to the increase in their workload. After the implementation of the HTP, the number of patients in public hospitals has increased significantly. Irregular payments and differences in payments between physicians and nurses are other major causes of dissatisfaction in this area(44, 76). This issue making reforms of payment systems is essential (77).

Implementing the physicians' residential guidelines has had a positive effect on reducing the time of access to a physician, which led to an increase in the percentage of patients organized within 6 and 12 hours. Access to physicians also reduced unsuccessful cardiopulmonary resuscitation (4, 78). Regarding diagnostic test results, their response time has been reduced, which is another reason for patients organized within 6 hours. The percentage of discharge against the medical device from emergency departments has also decreased significantly, which can be attributed to patients' increased satisfaction with hospital services and reduced financial burden (52).

One of the reasons for the increase in the total health costs is the relative tariff of services and the induced demand (65). Also, the reduction in the patients' copayments and the extension of insurance coverage to most Iranians have improved public access to health services, and the number of visits to hospitals has increased. Long-term stays of patients after the implementation of the HTP are other factors that increase costs (69). The rate of inappropriate hospitalization was increased after the HTP, and inappropriate hospitalization imposes a financial burden on all health systems, especially in hospitals (79).

Indeed, the findings showed that the unrealistic medical service tariffs had eroded the fairness between the medical disciplines in health service tariffs, leading to a significant difference in income between different medical specialties and different groups of health care staff. Following the increase in health service tariffs, the induced demand for service has increased, leading to an increase in health costs (80, 81). Also, the increase in health service tariffs has reduced insurance companies' financial ability to pay tariffs, which has led to an increase in insurance premiums to compensate for the deficit, which in turn reduced people's access and dissatisfaction (82). One of the positive effects of reviewing health service tariffs is the reduction in the number of service codes, which has facilitated the handling of health service documents by health insurance companies (63).

Sometime after implementing the plan, there has been a significant decrease in the number of informal payments. Only a small amount has been reduced in medical and nursing staff, and there are still informal payments (83). With the increase in the salaries of medical staff, their desire to receive informal payments has decreased. Also, the existence of the 1690 system regarding the registration of tariff complaints, and considering hefty fines for hospitals regarding the report of receiving kickbacks, has reduced informal payments (59).

The reviewed studies show an improvement in the health system's responsiveness in its different dimensions, including the mean waiting time, patient rights, and environmental health following the implementation of the HTP. This effect can be attributed to the proper implementation of the HTP's hoteling plans and hospital setting improvement (62). The studies have shown an increase in deductions from hospital bills after implementing the HTP, which has been mostly related to cases with social security insurance. Due to the increase in tariffs and the resulting induced demand, the number of referrals and workloads in the hospital has increased, which can lead to

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records and deductible (84). The review shows that immediately after the beginning of the reform, the quality of visits got better. Still, a year later, it got even worse than before the reform, probably because of the system's increased workload (64).

Limitation

First, some reports and research, especially at the beginning of the plan, may not have been published at all, and the results were not included because they were made for specific purposes and did not become an article. Second, some of the published articles were part of a more extensive study, and other research results may not have been published in the form of an article, and naturally, if published, it would have impacted the results.

Conclusion

The results of the present study indicate the different effects of the HTP packages. Considering the goals of the HTP in terms of financial protection, quality of services, and equity in access to services, it can be concluded that although the implementation of the HTP has been somewhat successful in achieving a number of goals, it is far from achieving all its goals.

Outcomes in some important indicators, such as the percent of households facing catastrophic health expenditures, C-sections, and nursing staff's satisfaction, remain undesirable. The reform appears to have successfully satisfied patients and improved the performance indicators and efficiency of hospitals, especially immediately after the implementation. Considering that studies have been conducted in different hospitals in terms of location, ownership, size, and specialization, and in different years, it is not possible to reach a definite conclusion about the impact of different programs of this reform. Nonetheless, in general, the results and achievements of the HTP have been different and sometimes contradictory due to the limitations of recent years, such as budget constraints, differences in settings, inconsistencies in studies, implementation methods, and other differences in study findings. Therefore, it seems that the time has come to fundamentally reevaluate and review the HTP's goals, packages, and prioritization to achieve universal health coverage, financial protection, equity, and service quality. Thus, the followings can be done: building sustainable health resources, regular monitoring of performance indicators, increasing access to maternity services, improving quality of health services, reforms of payment systems, establishing a referral system and family physician, and developing clinical guidelines. It seems that considering the effect of the HTP on some of the dimensions of the program, the results obtained are not clear, or some dimensions have been less considered; therefore, to more accurately evaluate this plan's achievements, it is necessary to conduct surveys at the national level using standard tools.

Conflict of Interests

The authors declare that they have no competing interests.

References

1. Abbasi M, Eskandari N, Raisi M. Iranian health reform advantages in health care system: a qualitative study. Ann Mil Health Sci Res. 2018;16(1).
2. Organization WH. Health Sector Reform: Issues and Opportunities. 2000.
3. Bahmani A, Farhanian A. Investigating the challenges affecting the health system development plan from the viewpoint of the managers and employees of Tehran province hospitals. Manage Strat Health Sys. 2018;3(1):80-9.
4. Jafari M, Nemati A, Mahmoudi MS, Seyedin H, Hosseini SE, Rakhshan A, et al. Implementation effect of specialist residency program: a case study on performance indicators of emergency departments. Int J Healthc Manag. 2018:1-10.
5. Abdi Z, Majdzadeh R, Ahmadnezhad E. Developing a framework for the monitoring and evaluation of the Health Transformation Plan in the Islamic Republic of Iran: lessons learned. East Mediterr Health J. 2019;25(6):394-405.
6. Manenti A. Health situation in Iran.Med J Islam Repub Iran. 2011;25(1):1-7.
7. Lankarani KB, Alavian SM, Peymani P. Health in the Islamic Republic of Iran, challenges and progresses. Med j Islam Repub Iran. 2013;27(1):42-49.
8. Doshmangir L, Rashidian A, Jafari M, Takian A, Ravaghi H. Opening the Black Box: The Experiences and Lessons From the Public Hospitals Autonomy Policy in Iran. Arch Iran Med. 2015;18(7):416-24
9. Jafari M, Rashidian A, Abolhasani F, Mohammad K, Yazdani S, Parkerton P, et al. Space or no space for managing public hospitals; a qualitative study of hospital autonomy in Iran. Int J Health Plann Manage. 2011;26(3):121-37.
10. Takian A, Doshmangir L, Rashidian A. Implementing family physician programme in rural Iran: exploring the role of an existing primary health care network. Fam Pract. 2013;30(5):551-9.
11. Doshmangir L, Bazyar M, Najafi B, Haghparast-Bidgoli H. Health financing consequences of implementing health transformation plan in Iran: achievements and challenges. Int J Health Policy Manag. 2019;8(6):384-6.
12. Moradi-Lakeh M, Vosoogh-Moghaddam A. Health sector evolution plan in Iran; equity and sustainability concerns. Int J Health Policy Manag. 2015;4(10):637-40.
13. Piroozi B, Moradi G, Nouri B, Bolbanabad AM, Safari H. Catastrophic health expenditure after the implementation of health sector evolution plan: a case study in the west of Iran. Int J Health Policy Manag. 2016;5(7):417-23.
14. Mosadeghrad AM, Rahimi-Tabar P. Health system governance in Iran: A comparative study. Razi J Med Sci. 2019;26(9):10-28.
15. Rajabi F, Esmailzadeh H, Rostamigooran N, Majdzadeh R, Doshmangir L. Future of health care delivery in iran, opportunities and threats. Iran J Public Health. 2013;42(Supple1):23-30.
16. Heshmati B, Joulaei H. Iran's health-care system in transition. The Lancet. 2016;387(10013):29-30.
17. Lankarani KB, Ghahramani S, Zakeri M, Joulaei H. Lessons learned from national health accounts in Iran: highlighted evidence for policymakers. Shiraz E-Med J. 2015;16(4):1-3.
18. Meymand FM, Aryankhesal A, Raeissi P. Relationship between Quality of the referral Chain of hospital services and patient satisfaction. Global J Health Sci. 2016;9(2):68.
19. Sajadi HS HM, Dehghani A, Khodayari R, Zandiyan H, Hosseini SS. The Policy Analysis of Iran's Health Transformation Plan in Therapeutic Services. Hakim Health Sys Res. 2018;21(2):71-88.
20. Adel A, Javan Biparva A, Ebrahimipour H, Badiee Aval S, Askarzadeh E. The Effect of Health System Evolution Program on Out-of-pocket Payment in Hospitals Affiliated to Mashhad University of Medical Sciences. Evid Based Health Policy Manag Econ. 2019;3(4):259-65.
21. Abdi Z, Hsu J, Ahmadnezhad E, Majdzadeh R, Harirchi I. An analysis of financial protection before and after the Iranian Health Transformation Plan. East Mediterr Health J. 2020;26(9):1025-33.
22. Kazemi-galougahi MH, Dadgar E, Kavosi Z, Majdzadeh R. Increase of catastrophic health expenditure while it does not have socio-economic anymore; finding from a district on Tehran after recent extensive health sector reform. BMC Health Serv Res. 2019;19(1):569.
23. Doshmangir L, Sajadi HS, Ghiasipour M, Aboutorabi A, Gordeev VS. Informal payments for inpatient health care in post-health transformation plan period: evidence from Iran. BMC Public

[DOI: 10.47176/mjiri.35.151]

Health. 2020;20(1):1-14.
24. Mosadeghrad AM, Esfahani P, Afshari M. Strategies to improve hospital efficiency in Iran: A scoping review. Payesh (Health Monitor). 2019;18(1):7-21.
25. Rezaeian M. An Introduction to Scoping Review. J Rafsanjan Univ Med Sci Health Serv. 2018;17(4):291-2.
26. Babaei M, Rassafiani M. Scope of spirituality research in occupational therapy literature: A scoping review Study. J Res Rehab Sci. 2016;12(3):185-93.
27. Khammarnia M PM, Setoodezadeh F,Barfar E,poormand N,Mirbaloch Az,Rastadel F,kord Tamin A, Arefi U, Azar Pira H ,bakhsh Baloch V Health expenditures by households after implementation of health transformational plan: a cross-sectional study. Payesh (Health Monitor). 2018;17(3):227-37.
28. Khammarnia M, Barfar E, Ansari-Moghadam A, Setoodehzadeh F, Baygi MZ, Peyvand M, et al. The Households Health Spending and Impoverishment: A Study After Iran's Health Transformation Plan. Health Scope. 2018;7(S).
29. Naghdi P, Mohammadi M, Jahangard MA, Yousefe A, Rafiee N. The proportion of unmet costs considering inpatients billing of selected hospitals, after 2014 Health System reform implementation in Isfahan Province. J Edu Health Promot. 2017;6.
30. Mohamadi E, Yousefinezhadi T, Hassanzadeh A, Atri M, Mobinizadeh M, Goudarzi Z, et al. The effect of health system evaluation plan on supplementary health insurance in Iran. Iran J Health Insur. 2018;1(3):82-7.
31. Yusefi AR, Bastani P, Bordbar S, Sadeghi A, Hesami SZ. The Effects of Health Transformation Plan Implementation on the Performance Indicators of Public Hospitals. Health Scope. 2018;7(1):3.
32. Zadeh ZG, Sajadi HS, Sajadi FS, Aghili G, Hadi M. The comparison of selected statistical indicators of a hospital before and after the implementation of health reform plan: Isfahan-2015. J Health Field. 2017;4(4):11-15.
33. Jahangiri A, Rahmani H. Comparison of Shariati hospital performance in Tehran before and after the implementation of health sector transformation plan using a dynamic multi-attribute decision-making method. J Hosp. 2019;18(2):29-37.
34. Piroozi B, Rashidian A, Takian A, Amerzadeh M, Sakha MA, Faraji O, et al. The impact of health transformation plan on hospitalization rates in Iran: An interrupted time series. Int J Health Plann Manag. 2019;34(1):264-73.
35. Rashidian A, Salavati S, Hajimahmoodi H, Kheirandish M. Does rural health system reform aimed at improving access to primary health care affect hospitalization rates? An interrupted time series analysis of national policy reforms in Iran. J Health Serv Res Policy. 2019;24(2):73-80.
36. Bahmaei J, Maleki A. Evaluation of the Effect of Health Sector Evolution Plan on the Rate of Cesarean Sections in Hospitals Affiliated to Abadan School of Medical Sciences. J Health Res Community. 2019;5(3):52-60.
37. Piroozi B, Moradi G, Esmail Nasab N, Ghasri H, Farshadi S, Farhadifar F. Evaluating the effect of health sector evolution plan on cesarean rate and the average costs paid by mothers: A case study in Kurdistan province between 2013-2015. J Hayat. 2016;22(3):245-54.
38. Zarei E, Majidi S, Bay V. Achievement of health sector evolution objectives in the vaginal delivery promotion plan: A study in a large public hospital in Tehran. J Health Field. 2015;3(2).
39. Mahmoodi M, Ghamarpour F, Masoudi Asl I. The Effect of Health Transform Plan on Satisfaction of Waiting Time and Continuation of Receiving Maternal Health Services in Clients of Community Health Centers of Iran University of Medical Sciences. J Med Counc Islam Repub Iran. 2018;36(3):160-7.
40. Akbari Sari A, Mosadegh Rad AM, Janbabaee Mola G, Mousavi SE. Cancer Patient Satisfaction Following Implementation of Health Transformation Plan in a Hospital: A Brief report. J Maz Univ Med Sci. 2018;28(162):149-54.
41. Elhami S, Maleki M. Patients' Satisfaction from Hospital Services after Implementation of the Health Sector Transformation Plan in the Selected Hospitals of Faculty of Medical Sciences of Abadan, 2017. J Adv Pharm Educ Res. 2019;9(S2):115-20.
42. Gorji A, Jadidi R, Delavari S. Comparison of costs and quality of inpatient services before and after the health reform plan. Nurs Dev Health. 2016;7(1):5-14.
43. Azad M, Jafari M, Kamran A, Savadpoor M, Nasiri K. The Effect of Health Reform Plan on Job Satisfaction among Nurses in Governmental Hospitals at Ardebil and Khalkhal Cities. Int Electron J Med. 2019;8(1):6-11.
44. Moridi A, Banaei M, Dashti S, Shahrahmani N, Pormehr-Yabandeh A. Assessing the Implementation of Health Reform Plan on Health Care Providers' Job Satisfaction. Shiraz E-Med J. 2019;20(11).
45. Bahmanziari N, Bastani P, Moradi R, Ahmadzadeh MS, Nazari M. Nurses' Satisfaction of Implementation of Health System Evolution Plan in Teaching Hospitals of Shiraz City, 2015 (IRAN). Qom Univ Med Sci J. 2017;11(8):85-93.
46. Molavi M, Shekarriz–Foumani R, Ahmadi A, Abadi A, Abdi Z, Hanani K. The View Points of the Medical Faculty Members and Residents about Health Sector Evolution in Hospitals Affiliated to Shahid Beheshti University of Medical Sciences.J Comunnity Health. 2016;4(4):306-16.
47. Dehghan A, Kazemeini SK, Zare Mehrjardi MH, Samiyezargar A, Raghebian M. A Survey on the Satisfaction of Retaining Physicians in Underserved Areas of Yazd in the Implementation of Healthcare Reform. J Med Counc Islam Repub Iran. 2019;36(1):48-51.
48. Amoozadeh Doghikola A SR, Rezaei Balf F. Comparison of Relative Efficiency of Hospitals Affiliated to Babol and Mazandaran Universities of Medical Sciences before and after Health Development Plan with Data Envelopment Analysis Method. J Babol Univ Med Sci. 2018;20(10):64-8.
49. Dargahi H, Darrudi A, Rezaei Abgoli M. The Effect of Iran Health System Evolution Plan on Tehran University of Medical Sciences Hospitals' Performance Indicators: a Case Study Using the Pabon Lasso Model. J School Public Health Institute Public Health Res. 2018;16(3):228-39.
50. Nabilou B, Yusefzadeh H, Salem Safi P. Performance assessment of health system reform plan in the hospitals affiliated with urmia university of medical sciences. J Urmia Nurs Midwif Fac. 2017;14(11):896-905.
51. Mosavirigi S, Mahrami M, Montazerolfarag R, Dehghanitafti A, Dorahaki M, Barati O. Reviews and comparisons of hospital performance indicators before and after the implementation of the healthcare reform package design therapeutic hospitals of Bushehr University of Medical Sciences. Tolooebehdasht. 2017;15(6):107-19.
52. Tourani S, Isfahani HM, Kakemam E, Alirezaei S, Moosavi A, Mohseni M. Transformation in the Iran health-care system: Has the performance of hospital emergency department been improved? J Educ Health Promot. 2019;8:1-6
53. Khadivi R, Rezayatmand MR, Bank H, Etesampour A, Ghasemi N. The Comparison of Direct Health Expenditures of Selected Insurance Organizations of Isfahan Province and Isfahan University of Medical Sciences, Iran, before and after Health Care Reform in Years 2013 and 2015. Health Inform Manag. 2019;15(6(64)):274-280.
54. Mohamadi E, Zaraei G. Investigating the effect of health care improvement plan on the payment of the insured in Iranian health insurance organization (case study: hospitalized patients in collegiate hospitals of Ilam city in december 2013 and 2014). J Ilam Univ Med Sci. 2017;24(6):178-88.
55. Alimohammadzadeh K. Evaluating the Health Reform Plan in Ayatollah Taleghani Hospital, Tehran in 2010-2017 Using the Balanced Scorecard. Hakim Res J. 2019;22(2):100-11.
56. Mosadeghrad AM, Mirzaee N, Afshari M, Darrudi A. The impact of health transformation plan on health services fees: brief report. Tehran Univ Med J. 2018;76(4):277-82.
57. Mosadeghrad AM, Darrudi A, Afshari M. Impact of health transformation plan on surgical and anesthesia procedures tariffs: A longitudinal study. Razi J Med Sci. 2019;25(12):17-32.
58. Moradi N, Miriyan I, Jaberi N, Moradi K, Eghbali ME, Keshavarz K, et al. The Effect of the Health Reform Plan on informal payments in Selected Hospitals of Shiraz University of Medical Sciences. J Health Adm. 2019;22(3):79-88.
59. Zarei E, Palesh M, Khodakarim S, Nikkhah A. Informal Payments for Inpatient Services and Related Factors: A Cross-Sectional Study in Tehran, Iran. Health Scope. 2018;7(S).
60. Piroozi B, Rashidian A, Moradi G, Takian A, Ghasri H, Ghadimi T. Out-of-pocket and informal payment before and after the health transformation plan in Iran: evidence from hospitals located in Kurdistan, Iran. Int J Health Policy Manag. 2017;6(10):573.
61. Sarikhani Y, Heydari ST, Razmjou S, Zare S. The Iranian Health System Responsiveness after Implementation of Health Transformation Plan: A Study of Jahrom County in Southern Iran.

[DOI: 10.47176/mjiri.35.151]

Health Scope. 2018;7(S).
62. Piroozi B, Mohamadi Bolban Abad A, Moradi G. Assessing health system responsiveness after the implementation of health system reform: a case study of Sanandaj, 2014-2015. Iran J Epidemiol. 2016;11(4):1-9.
63. Mosadeghrad A, Afshari M, Nasrolahi R, Daneshgar S, Corani Bahador R. The Impact of Health Transformation Plan on Deductions Imposed on Imam Khomeini Hospital Complex's Bills. Journal of Hospital. 2018;17(2):71-9.
64. Jahani M, Fakhteh R, Fathi A, Khosravi A, Mahmoudi G. Factors Affecting of the Mean Rates Visiting-Hour Indicator in the Hospitals of Mazandaran University of Medical Sciences after Implementation of Health System Reform Plan. J Healthc Manag. 2018;9(3):19-27.
65. Shahverdi S, Abazari P, Yazdannik A, Rezvani M. Induced Demand after Implementing the Health Reform Plan in Selected Emergency Departments Affiliated to Isfahan University of Medical Sciences: a Cross-Sectional Study. Adv J Emerg Med. 2019;4(3):1-6.
66. Anisi S, Kariman H, Ghodssi-Ghassemabadi R, Zarei E. Patient absconding from hospital before and after 'Health Transformation Plan': An interrupted time series study. Payesh (Health Monitor). 2018;17(2):129-36.
67. Moradi M, Jami H, Izadpanah F. Comparing the Drug Prescription before and after the Implementation of Health System Reform Plan in Southeastern Community Pharmacies of Iran. J Pharm Care. 2018;6(1-2):13-8.
68. Ahmadnezhad E, Murphy A, Alvandi R, Abdi Z. The impact of health reform in Iran on catastrophic health expenditures: Equity and policy implications. Int J Health Plann Manage. 2019;34(4):e1833-e45.
69. Gholami S, Sahraei Z, Khoshghadam M, Malekniazi N, Qanbarinikoo A, Moddaber MR. Assessment of the Efficiency of hospitals before and after the implementation of the Health Reform Plan in Qazvin province based on the Pabon Lasso model (2011-2016). World Fam Med J. 2018;99(5804):1-7.
70. Kakemam E, Dargahi H. The Health Sector Evolution Plan and the Technical Efficiency of Public Hospitals in Iran. Iran J Public Health. 2019;48(9):1681.
71. Bastani P, Lotfi F, Moradi M, Ahmadzadeh M. The performance analysis of teaching hospitals affiliated with shiraz university of medical sciences before and after health system reform plan using pabon lasso model. J Raf Univ Med Sci. 2016;15(8):781-92.
72. Rashidian A, Moradi G, Takian A, Sakha MA, Salavati S, Faraji O, et al. Effects of the Health Transformation Plan on caesarean section rate in the Islamic Republic of Iran: an interrupted time series. East Mediterr Health J. 2019;25(4):254-61.
73. Jabbari A, Yarmohamadian MH, Hadian M. Iran's struggling health system: An increase in natural childbirth: A case study. Int J Prev Med. 2018;9:47.
74. Dargahi H, Bahman N, Akbarzadeh A. Patients' complaints before and after implementation of health transformation plan. Payesh (Health Monitor). 2018;17(5):495-505.
75. Raisi M, Eskandari N, Abbasi M, Rahbar A. Customers' satisfaction with the Iranian health system reform plan. J Educ Health Promot. 2019;8(1):170.
76. Gholami S, Oveisi S, Ghamari F, Etedal MG, Rajaee R. Study of Educational Hospital Employees' Satisfaction with the Administration of the Health Reform Plan in Ghazvin, 2015. Electron Physician. 2015;7(7):1500.
77. Arab-Zozani M, Pezeshki MZ, Khodayari-Zarnaq R, Janati A. Balancing overuse and underuse in the Iranian healthcare system: a force field theory analysis. Ethiop J Health Sci. 2019;29(2).
78. Emamgholipour S, Jaafaripooyan E, Mohammadshahi M, Yazani EM. The effect of Health Sector Evolution Plan on the performance indices of emergency department in hospitals of Tehran & Iran universities of medical sciences: interrupted time series analysis. Iran J Emerg Med. 2017;5:9.
79. Arab-Zozani M, Pezeshki MZ, Khodayari-Zarnaq R, Janati A. Inappropriate Rate of Admission and Hospitalization in the Iranian Hospitals: A Systematic Review and Meta-Analysis. Value Health Reg. 2020;21:105-12.
80. Aryankhesal A, Meydari A, Naghdi S, Ghiasvand H, Baghri Y. Pitfalls of revising physicians' relative value units (RVUs) in Iran: a qualitative study on medical practitioners' perspective. Health Scope. 2018;7(S):e63140.
81. Yousefi M, Aliani S, Valinejadi A, Rezazadeh A, Khorsand A, Fazaeli S, et al. Effect of" Iran's health system evolution plan" and" tariff change" on financial performance of para-clinic units in a big tertiary hospital in Iran. Koomesh. 2018;20(2).
82. Ebrahimipour H, Rezazadeh A, Olyani S, Vakilzadeh AK, Yusefi M. Iran's health system evolution and tariff change on cardiovascular ward performance of a big teaching hospital. Payesh (Health Monitor). 2017;16(2):150-8.
83. Karami M. Impact of health system reform on patients' formal payment in heart department: case study. J Health Adm. 2018;21(72):90-8.
84. Rostami Z, Nasiripour AA. Comparison of the Deductions of Insurance Bills in an Education-Treatment Center in Iran before and after Health Care Reform.Health Inf Manag J .2019;15(6):281-7

[DOI: 10.47176/mjiri.35.151]