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# Trade-off between Efficiency and Equity on the Rationing in Health Insurance System: the Burden on the Poor

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***ABSTRACT***

**Background:** Nearly all of the rationing mechanisms have negative impacts on the poor. If the fair service access is not set as the top priority in the rationing choices, the poor will experience service limitation and scarcity. This study aims at investigating the effects of rationing policies on the poor covered by Iran Health Insurance System.

**Methods:** This article is based on a qualitative study conducted in 2017. In total, 32 experts of health system financing participated in the study. A purposeful sampling method was applied till reaching knowledge saturation. Data were collected using semi-structured interviews. Afterwards, data was analyzed by framework analysis based on Bennet and Gilson pro-poor health financing system framework using $MAXQDA_{10}$ software.

**Results:** The main challenge of rationing through the insurance system in Iran is the rationing only for the poor. As a result of rationing decisions, the poor are mostly the first group affected by service limitation only because they exempted from paying the premium. The current implicit or explicit health services rationing policies in each dimension has jeopardized the access of the poor to the services.

**Conclusion:** Every resource allocation and negotiation of service purchaser on the budgets should be aligned with the focus on vulnerable groups and their needs. The access of deprived groups should not be reduced for limited budgets or income prioritization. Every decision about the constraints on the usage of the services should be accompanied by the analysis of potential effects on the poor and preventive policies should be implemented so that the burden of service rationing could not be imposed on the poor

**Key words:** Rationing, Equity, Health insurance

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## Introduction

Healthcare expenditures are increasing nearly in all countries because of the demographic changes, changed patterns of diseases, and modern technologies. Such changes can have profound impacts on severe budget constraints and limited economic resources allocated to the healthcare(1).

Once governments cease to increase healthcare revenues, which could compensate for the growing healthcareexpenditures, this sector resorts to decreasing the availability of healthcare services(2). Rationing can be defined as limiting the access of some individuals to useful healthcare services due to budget constraints. In healthcare systems which are based on social insurance and premium payment, insurance organizations are responsible for rationing healthcare services. Insurance organizations make large-scale laws and regulations on the approved budget, covered services, and cost-sharing mechanisms through considering political, economic, social, and technological factors (3).

Rationing means depriving patients from certain healthcare services which benefit them and an individual, regarded as a patient and not even a citizen, would like to access them (4). Rational rationing is based on effective medical interventions, whereas irrational rationing is premised upon revenues or health insurances (5).

In the healthcare system, there are two general rationing methods: explicit and implicit. Implicit rationing is performed without official regulations and principles(6). There are various implicit rationing methods including the limited presence of healthcare providers, geographically-distributed access, congestion of healthcare centres, and quantitative constraints (e.g. financial or numerical for providers or insured people)(7), in addition to unofficial payments and service dilution. Such methods have negative impacts on the equality of financing, service utilization and financial protection(8).

Also in case of the explicit rationing, society enacts precise and transparent rules that determine the circumstances under which certain people can claim certain medical services(9). Public and private healthcare systems usually benefit from the implicitrationing mechanisms. They are rarely manifested clearly in the political discourse(10). In 2003, a list of omitted procedures was introduced in Sweden. It was quickly labelled as the blacklist, leading to the public protest. Thus, politicians were made to change directions and refocus on indirect rationing(11).

Healthcare service rationing is universal and inevitable. It occurs in all countries, ranging from the poor to the rich, and in all healthcare systems.However, it is important to know that rationing should be as moral as possibleto mitigate the side effects(12). In England, it was occurred by removingcertain services and medicines fromthe National HealthSystem (NHS) list and establishing strict criteria for healthcare access. As a result, patients encountered long waiting lists,very few choices in hospitals, and unnecessary bureaucracy imposed by theprimaryhealth service providers(13).

The poor are more prone to illness and death comparing to the rich people. In fact, illness is the most effective factor in poverty. The poor peoplehave less money to spend on health because they need to meet their basic needs including food, housing, clothing, and education first(14). Covering the poor and nearly poor people is considered as an important issue in each and every country. The funds for the poor usually provide more limited services due to their supportive incomes; thus, they provide the poor with less support(15).

According to the World Bank statistics from 2016, out-of-pocket expenditures (OOPs) in Iran constituted about 38·8 % of total expenditure on health (16). The studies indicated that the distribution of catastrophic health expenditures and impoverishment due to health payments focused on poor people (17) and the chance of facing CHE in households with low economic status (the poor) was 19.04 times more than the middle class and the rich(18).

The Iranian government has carried out certain reforms including rural insurance and the Universal Health Insurance Fund (UHIF) to provide more financial protection for families with no insurance. The members of such insurance funds are from low-



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income families, benefiting from lower levels of financial protection against healthcareexpenditure. The risk manifested inthese groups as lower levels of participation which result in more limited services for them(19). The Imam Khomeini Relief Foundation (IKRF)has taken the responsibility for providing health insurance for its poor members. The State Welfare Organization of Iran hascovered part of the health expenditure of its members by paying their premium toIran Health Insurance Organization (IHIO) (20).

Nearly all of the rationing mechanisms have negative impacts on the poor. If the fair service access is not set as the top priority in the rationing-based choices, the poor will experience service limitation and scarcity(21). Healthcare service rationing leaves politicians with an obvious trade-off between the health system goals. The amount and type of rationing can affect the healthcare goal trade-off(2), which sacrifices one for the other. Thus, it is important to consider ethical challenges of health equity and relevant impacts on the poor's access to health services before making decisions on rationing policies. This study aims to investigate the effects of rationing policies on the poor covered by Iran Health Insurance System.

## Materials and Methods

This study was a qualitative one conducted in 2017.

### Participants

The population included policymakers, experts and scholars in the Ministry of Health and Medical Education (MOHME), Ministry of Cooperatives, Labor and Social Welfare (MCLS), Plan and Budget Organization (PBO), the Parliament, basic health insurance organizations included IHIO and Social Security Organization (SSO), and supportive organizations including the IKRF, and Welfare Organization. The two inclusion criteriawere information and experience regarding the issues like health system financing, priority setting and rationing field. Interviewees were selected through purposeful and snowball sampling. The selection of the participants using heterogeneous sampling resulted in a diverse range of participants with different experiences and perspectives.Sample size continued until information saturation had been reached.The thirty interviews yielded no further information. However, to ensure data saturation, two more interviews were conducted. Thirty-two semi-structured individual interviews were conducted in total.

### Data Collection

We employed a semi-structured topic guide comprised of open ended questions that were developed based on literature review and the research team opinions.The duration of the interviews varied from 20 and 126 minutes, and supplementary interviews were conducted as necessary (two cases). In these cases, to resolve any ambiguity and to effectively use experts' opinions, we asked additional questions to generate further discussions and promote the comprehensive exploration of the issue.

The interviews were directed by a researcher and one note-taker. All interviews were recorded using a voice recorder and after each session, the interview was transcribed verbatim immediately. The responses were jotted down accurately in cases of refusal to record the sound.All interviews were conducted in a quiet and private space where the participants were not disturbed.

The effects of rationing healthcare services on the poor were analyzed based onthe dimensions of Bennet and Gilson pro-poor health financing system. These dimensions include:

1.ensuring that the poor contribute to healthcareexpenditures in proportion to the payment capacities of the families;

2.protecting the poor from the financial risks of diseases

3.increasing the availability of services for the poor (with an emphasis on geographical access and quality)(22).

### Data analysis

The research team executed the content analysis method through coding the data collected from the interviews and using the theoretical framework of the literature. Themes and subthemes were extracted based on a pre-existing framework.Data analysis was carried out at the same timewith data



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collection.Collected data were coded based on key themes which identified through framework.

Framework analysis includes five steps, familiarization, developing a working analytical framework, indexing, charting, and interpreting the data(23). In the familiarization step, the introduction of the preliminaries was provided for more familiarization withthe data by listening to the recorded interviews and reading scripts several times, so the key themes were listed. In the second step, a thematic framework of the keytopics were prepared based on the framework and was used in the next stage for structuring all the data (indexing). In the charting step, a table was drawn for themes, and the data were exported to it. In the interpretation step, the connection among codes, subthemes, and themes was delineated.

### Rigor

In order to ensure about reliability, peer check was occurred in a way that two members of research team conducted coding separately and then discussed to reach consensus to see whether there isa disagreement.The researchers allocated enough time to collect and retransmit data between them to ensure the accuracy of the data. Also the texts transcribed from the interviews were referred to some participants and their opinions were taken into consideration (Member checking). The researcher gave the data to the colleagues to review and confirm the data.

For the creditability of the findings, the quotes of participants were presented with honesty, so that the readers could have a better perception over the study results. Also, maximum variation of samples confirmed the transferability of data.

### Ethical Consideration

The objectives were explained to the participants, and they were asked to complete and sign an informed consent for participating in the study. Although participants were informed that the interviews were recorded, they were ensured that their information would remain confidential.

## Results

Table 1 shows demographic characteristics of interviewees. The most important topics pertaining to the effects of health service rationing by insuranceorganizations on how much the poor benefit from such services analyzed based on every dimension of the model:

**1.Ensuring the affordability of the premium and copayment:**

A large number of the poor are exempted from paying the premium in Iran health insurance system. The IHIO covered three poor groups includingthose with unofficial jobs andthe slum settlers (in UHIF), help seekers of the Welfare Organization(in Other Strata Fund),poor people living in villages and cities with fewer than 20000 people(in the Rural Fund) and, the help seekers of the IKRF who were supported bythis institution until 2019 and then moved to IHIO.The limited availability of the services provided by the public sector for the insured clients of the UHIFhavemade many insured poor- especially patients with chronic, incurable, and temporary diseases- to immigrate to Iranian Fund. In fact, the defined premium of the Iranian Fund is out of the payment capacity of the poor after subtracting the governmental subsidy. At the same time, the initial issuance of the UHIF has been stopped for the uncovered poor.

Setting equal copayments, defining no stepwisecopayments matching income and not exempting poor insured from service fees are among the factors deterring them from receiving services. Price rationing is considered as the worst type of rationing with regard to the possible effects on service availability. This type of rationing challenges the access of the poor to the services, stops them from visiting a doctor andreceiving treatment, delays their visits, or makes them take financial risks as a result of paying fees.

“The most vulnerable stratum is the poor and disadvantaged people. They have limited access. They might be insured, butthey have no access. Our problem is not the insurance booklets now. Everybody has it somehow and only a few people are still waiting. What matters is the money that people cannot pay.”(P 13)

**2.Financial protection: The burden of**



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**catastrophicexpenditures on the shoulders of the poor**

Copaymentfor expensive services, uncovered services, the public-private fee discrepancy, and free fees fornot contracted centresaretypes of payment capacity rationing, especially for rare but necessary services. In other words, those who cannot pay the fees will avoid visiting providers. Therefore, they are either deprived of services or hurt by the financial pressure of services.

"They have defined a benefit package for everyone. The package requires those covered by the IKRF to pay 30 % for copayment. The same rate has been defined for me as a governmental employee. Obviously, this 30 % is calculated as 1 % of my entire income. However, it may be 10 % or 15 % of those people's income. In fact, 30 % is a constant rate, though the copayment is totally higher for a person covered by the IKRFcomparing to a governmental employee or a person supported by the SSO."(P 23)

The poor have to pay higher copayment fees (without insurance coverage) for private healthcare services due to facility constraints of the public sector. As a result, the poor resort to visiting the private sector to receive healthcare services after rationing provided by the insurer organizations. The poor encounter a serious barrier for receiving services; thus, it could jeopardize their health.

"Something must be done so that the poor can easily access healthcare services without facing catastrophic expenditures and getting caught in the poverty trap. If the poor face catastrophic expenditures, they will vanish from life."(P 2)

**3.Appropriate geographical access to the high-quality services**

The main challenging issue of the insurance system rationing is known as the rationing only for the poor. As a result of rationing decisions, the poor are mostly the first group affected by service deprivation because of their exemption from paying the premium. An obvious instance is the constraints preventing the insured of the UHFI from visiting the private sector. Such a case is regarded as obvious rationing achieved by removingfrom benefit packages.

Referee of theinsured of the UHIF, who had been insured for free since 2014, is limited to the publiccentressince October 23, 2017. Many ofsuch people were among the slum residents. The interviewers had different viewpoints on the matter:

"We are changing benefit packages. You must not go to the private sectoror anywhere we wish to. It has been defined. The poor are provided with smaller benefit packages. In fact, the limitation has imposed on them."(P20)

"According to the BudgetPlan, twelve million insured people have to receive services either from the family doctor system or public centres. In other words, the health insurance booklet is of no value to the private sector."(P 1)

A direct consequence of exclusive referral to the public sector for a populated fund of the IHIO is the limited capacity of services provided by the public sector and the emergence of long-lasting waiting lists, especially for outpatient services that are focused in private sector in Iran when the capacity of public sector is limited. As a result, the insured have limited access to the services. Forcing the poor and villagers to visit public centres jeopardizes their geographical access to services, because they have to visit the public sector which might be located farfrom their homes, despite the presence of private service centres nearby. Also, the congestion of referral to public centres reduces the quality of the services (implicit rationing). They have to take long distances, resulting in transportation costs, wasted time, and risks of tardiness in receiving services.

Another instance of service rationing is to impose constraints through the referral system and the necessity of compliance with it. Imposing such constraints only on the poor can be regarded as an instance of direct rationing. Only the insured villagers and help seekers of the IKRF are required to comply with the referral system. The largest population of the poor lives in the villages of Iran. If they do not comply with the referral system, they have to pay for the services out of their pockets. Since the establishment of the rural fund and help



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seekers of the IKRF, the rural population is faced the referral system rationing. Therefore, re-rationing through the necessity of referring only to the public sectors will intensify the challenge of accessing healthcare services.

"When the rural insured people do not refer through the referral system, there is no support."(P 8)

"It must be for me, too, not just for those with no money. I have to undergo the same system. If I refuse, I have to pay out of my pocket. However, only the poor are forced, and then the requirements are not provided. Well, the supreme leader pointed out the same exact health policies. However, if only the poor follow this way, doctors should be present. The doctor was not present, so he gave his seal to someone else who stamps the health insurance booklet in the village. Then the patient comes to the city. If I do not visit him, nothing happens. The poor patient pays high transportations costs, and he was not finally visited." (P 21)

According to the pro-poor health financing dimensions, the current implicit or explicit healthcare rationing policieshas jeopardized the access of the poor to such services in Iran. Therefore, it appears necessary to revise policies with regard to the access of the poor to services.

**Table 1.**Profile of interviewees

| Qualitative variables | | Frequency | Percentage (%) |
|---|---|---|---|
| Gender | Female | 2 | 6 |
| | Male | 30 | 94 |
| Educational degree | Bachelor | 1 | 3 |
| | Master/ MD | 12 | 38 |
| | Ph.D. | 19 | 59 |
| Employment status | Policymakers at national level | 9 | 28 |
| | Middle level agents of MOHME & MCLS, PBO | 10 | 32 |
| | Insurance organization | 7 | 22 |
| | Charities | 2 | 6 |
| | Health system expert | 4 | 12 |

## Discussion

The necessity of cost control has sent the justice principle to the first line of health policy in the rationing conflict. Rationing is accompanied by the painful cost control, i.e. decreasing the effective medical care(24). Without insisting to improve the quality and quantity of health service providers, universal health coverage will be an unreachable goal due to the rationing(25).

The highest load of out-of-pocket payment is on the shoulders of the poor. It also results in the poverty caused by health catastrophic expenditures, loss of income, and sales of assets for health expenditures, pressures on the family budget and delay treatment due to the inability to pay, poverty growthand distrust in health insurance systems(26). According to a study of households income-expenditure data in Iran, the insurance organization has managed to reduce only 15 % of direct out-of-pocket expenditures and increased only 2 % of the chance of benefiting from health services(27).

In the eyes of health policymakers, copayments are very slight but tempting solutions to the budget deficit. However, they are regarded as real barriers between the poor and their health needs(14). According to the progressive or variable copayment, more support is provided for people whose copayments are higher or who are more liable to pay health catastrophic expenditures. Applying the intelligent copayment mechanism can be a step towards improving health equity (28).

In the Law of the Fourth Development Plan, the government is required to "maximizes the fair financial contribution rate to 90 %, maintain the household's share of health care costs to a



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maximum of 30 %, and reduce the number of households that become vulnerable by bearing catastrophic health expenditures to 1 %"." Thestepwisecopaymentcould have facilitated the enforcement of this law.

In 2000 report, the WHO set a law on rationing. Accordingly, prices should not be the main tools for rationing. The noncompliance of this law would jeopardize the poor and it can intensify inequality in financial contribution. Hence, if the price is to play a role in rationing, it should be implemented differently for the poor. Rationing should be performed by leaving specific medical interventions out of the service package, not by crossing out the supported people (29). It appears that this law has not been complied in Iran's health insurance system.

Healthcare price rationing limits the access of the poor to services rather than the access of the rich. However, waiting time rationing means that the rich will have limited access because the cost of their time is usually higher(30). When healthcare rationing is used instead of the unlimited coverage of services, the WHO suggests the following principles to ensure that the poor are not deprived of healthcare services:

1.Healthcare services should be prepaid (for instance, taxes should be charged on healthcare throughout the working life, although such services are not very necessary in the youth or middle ages).

2.Healthy people subsidize patients (in other words, taxes should not be estimated on the basis of health risks. This policy is adopted by private insurances).

3.The rich subsidize the poor (in other words, the rich pay more health taxes than the poor, and the quality of public services should not be better for premium groups)(31).

Because of fragmented funds in IHIO, no cross-subsidy happens in this insurance between rich and poor. For funds targeting of the low-income people in the IHIO, the rationing is performed through service package limitation to the public sectorand creating implicit waiting lists at public centres. Waiting list rationing is designed for any group in some countries. However, it has been pointed out that the available family income is an effective factor in longer waiting times(32). People with sufficient power, knowledge, communications, and social resources are powerful enough to quickly find a position on the waiting list for healthcare services in comparison to those with limited access to healthcare services(6).

The budget ceilingfor service providers (hospitals), leads to the decreased capacity of services provided for the insured. Research has shown that the poor are usually more vulnerable when service capacity decreases(25). The necessity of visiting public centres (limited referral) increases the expenditures and deprivation of services among the poor. According to Kavosi et al (33) if free or inexpensive services are remote, the poor have to use more expensive services on shorter distances, something which imposes catastrophic health expenditure on them.

In Oregon, the US, medical service rationing was enforced only for the poor. As a result, there was a negative effect on equality in service access, which was criticized for discrimination (rationing for the poor)(34). The ethical aspect of service rationing only for the poor was questioned in worldwide and it has been predicted that advantages would reach an insufficient point for the poor in this situation(35).

According to the maximum-minimum principles, Rawlz approves only a system which improves the position of the worst cases. Not only such a system does not guarantee the complete equality of healthcare incomes and resources, but also it allows inequality to improve the lives of many people with the worst conditions. In a social equality system based on Rawlz's theories, it is assumed that if healthcare services are regarded as a necessity for the poor, they must be provided for them. (36).

What happens to the poor in the insurance system through rationing can limit the poor access to healthcare services explicitly and implicitly that both happen simultaneous through IHIO. Not purchasing from private sector, known as hard rationing, is a type of explicit rationing(9). According to the previous studies, people at the end of income range prefer to undergo longer waiting



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times (implicit rationing) rather than having limited access due to leaving out some services of the benefits package (explicit rationing)(37).

Implicit rationing brings more concerns for equality because the decision-making basis is not clear and specific and unreasonable mistakes and biases can affect decisions. Therefore, the rationing decisions of the insurance system should pay due attention to decisions made on constraints, especially for the poor.

What occurs in some funds through rationing jeopardizes the horizontal justice, meaning that people with equal needs should be treated the same without considering individual traits including age, income, and ethnicity(38).

In addition, equity considerations should also be taken into account. What occurs in practice through rationing tools used by the insurance organizations is the help seekers of the IKRF, regarded as the poorest members of society, visit the most to receive discounts on hospital bills to the social working departments in the hospitals because they are unable to pay their shares of costs. General rationing tools involve the poor more than others, although some of them are not supported by premium-exemption funds (39) and they have to shoulder the financial load of the premium.

The equity-efficiency trade-off is among the mixed decisions on service rationing for the poor or effects on them. Regarding a choice between justice improvement and efficiency improvement in healthcare, it is not wise to sacrifice theequityfor efficiency. In fact, a balance should be established in favour of the poor(40).

## Conclusion

Insurance organizations should consider the potentially negative impacts on the poor and possible risks of distributional justice to adopt rationing policies. The negative impacts of every access-limiting policy should be covered with a complementary policy, so the poor have a choice in the policy formulation (the poor should have a representative to speak of their needs to policymakers). The ultimate mission of insurance organizations is to provide financial protection for the insuredin the path to the universal health coverage which should be put on top of the agenda in every policy. Finally, every resource allocation and negotiation of service purchaseron thebudgets should be aligned with the focus on vulnerable groups and the needs of such groups. In fact, the access of the deprived groups should not be scarifiedfor limited budgets or income prioritization.

Every decision about constraints on the use of services should be accompanied by the analysis of its potential effects on the poor andpreventive policies should be taken into account so that the burden of service rationing could not be imposed on the poor. Rationing options should guarantee that the poor have access to services by prioritizing financial protection provided for them.This study is the first study exploring the effects of the health financing system rationing on the poor in the country. Enjoyment of the views and opinions of different experts has led to a better understanding of the studied subject. The findings of the study can be considered as evidence regarding health service access of the poor resulted from the rationing policy in a developing country.

The limitations of this qualitative study should be taken into account. The issue of generalization is the main concern in this study. However, the study goal was not to expand the analytic generalization to the statistical generalization. In addition, we considered research team bias in conducting study stages through using different strategies such as member check strategy to increase trustworthiness. It seems that using comprehensive sampling of various people can be used to help the accurate understanding of the influence of rationing policies on the poor.

It is acknowledged that this study was only conducted among respondents from health policy-makers and insurance experts, whose views may therefore not represent the opinions of the poor. Future qualitative studies should consider visions of the poor on the challenges of accessing health services under rationing policies of the health insurance organizations and quantitative studies for measuring it.



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## Conflict of interests

The authors declared no conflict of interests.

## Author's Contributions

Etemadi M designed research; Etemadi M and Abolghasemgorji H conducted research; Etemadi M analyzed data; and Etemadi M wrote manuscript. All Authors read and approved the final manuscript.

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