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Method: Medical databases have been searched for relevant articles in E were reviewed by two authors and relevant data have been extracted. The data

Results & Discussion: Developmeeither to cut costs or for the sake of in extensive and careful pilot studies and ethical overviews.

Keywords: Rationing; Ethics; Critical care; Policy; Cost control

Abbreviations

WHO: World Health Organization; UHC: Universal Health Coverage; ICU: Intensive Care Unit; DNR: Do Not Resuscitate; HTA: Health Technology Assessment

Introduction

Rationing: A path to universal health coverage

Universal health coverage is recognized as a solution proposed by the World Health Organization (WHO) with the goal of "health without financial risks". The increasing costs of health systems, on the one hand, and their restricted resources, on the other, have made it difficult to achieve this goal. In this regard, health systems have utilized various strategies and programs to control costs and manage their resources as best as possible, some of which have been successful and

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for everyone. These new ethical dilemmas originate from the principle of justice and how benefits and costs are allocated to the whole of the society, that is, the principle of distributive justice. These principles bring health decisions to a higher level than the individual physician-patient relationship. The obligation to control costs brings the principle of justice to the forefront of health policy in the rationing debate.

Thus, rationing has shifted from its general application, that is the restriction on the provision of services, so that not all useful services are available to all those in need to a more precise application, i.e. a cautious policy for a fair distribution of restricted resources. In other words, rationing means restricting the resources so that not all useful services are provided to all people in need as well as the fair distribution of these limited resources [9].

Rationing of intensive care unit services

In recent years, many health services in different countries have been subjected to rationing programs, one of which is the intensive care unit (ICU). ICU is a hospital ward with professionally educated staff and sophisticated equipment dedicated to providing health care at ultimate levels including monitoring, care, and treatment of patients with life-threatening diseases, injuries, or complications [10]. Achievements in other medical fields, including cardiovascular, transplantation, and oncology, have led to a rapidly changing trend of deadly diseases to chronic resource-craving diseases with frequent ICU admissions [11], therefore, these ICU care services are amongst the most costly services in the health system, accounting for about 1% of GDP in United States annually [3]. This high cost, when viewed in the context of resource constraints in health systems, highlights the need for rationing strategies for ICU care services [12]. In this regard, increasing rationing planning is developed for such services, and rationing methods are shifting from implicit to explicit methods [13,14].

Iran is also one of the countries facing the problem of increasing costs and lack of resources to achieve universal health coverage, and ICU services, as expensive services, impose a heavy financial burden on the health system.

Scientific documents and studies and the use of expert opinions, propose practical strategies and implementation strategies for policymakers and health professionals in the field of rationing of ICU services.

Methods and Type of Study

The present study has been carried out in two phases and has practical results. In the first phase, after reviewing available studies and literature, ICU services rationing strategies were identified and coded.

At this stage, information was collected through databases such as; PubMed, Cochrane, Elsevier, ProQuest, Scopus, and using Google Scholar search engine in the period 2000-2020. In this regard, keywords such as "rationing", "ICU care", "cost containment" and their Persian equivalents were used. Various studies such as quantitative, qualitative, time series, mixed, review studies that somehow referred to the rationing of ICU services and its solutions, and were published in the above period, were included in the study. Articles published before 2000 or written in any language other than English and Persian were excluded from the study.

Two researchers extracted the data using a data summary table, consisting of the title of the study, the names of the authors, the year of the study, the country of study, and the findings, and the differences were discussed and agreed upon.

Finally, the results of the present study were reported in a table and provided to the experts, who were selected using the purposive and snowball sampling methods, and the most informed people were selected based on the study objectives. However, due to the few and unavailability of informed people, the study was not saturated. Eventually, based on the opinions of experts, the extracted solutions were classified into 4 levels.

Results & Discussion

A review of scientific studies and evidence provides a set of strategic suggestions and recommendations for the rationing of ICU services, which can be classified into 4 levels (Table 1 and Figure 1).

System-level: policy makers, Ministry of Health, and insurance organizations

- Developing clinical guidelines for ICU admissions and service delivery: Considering the existing restrictions, the involvement of cost-effective studies in the development of clinical guidelines is a method of service rationing; therefore, at the national level, it is necessary to develop modified scientific guidelines through cost-effectiveness studies.
- Reviewing ICU Pharmacopoeia: Considering the high cost of medications used in the ICU, legal drug prescriptions were taken into account and if there are generic drugs, only these drugs should be covered by insurance programs, and if there are no generic drugs, access to expensive drugs should be limited using a mechanism such as setting a prescription limit for drugs.
- Designing and implementing an appropriate financial mechanism: In the ICU, many services are provided depending on the conditions and type of patients, and if there are no

Levels of policy implementation	Options
System (policy makers, Ministry of Health, and insurance companies)	• Development of adjusted clinical guidelines • Development of adjusted pharmacopeia • Design and implementation of appropriate financial mechanisms • Budget reallocation • Limited coverage of ICU services following elective surgeries • Designing and setting up intermediate service delivery units
Organization (medical schools and hospitals)	• Development and design of organizational clinical protocols • Redistribution of human resources
Service Provider (treatment staff)	• Aligning clinical judgment with clinical guidelines and organizational protocols • admission of patients based on the severity of the disease • Active discussion with patient's companions
Consumer (patient)	• Informing the public and the society about priorities and constraints • Price rationing

Table 1: Rationing options for ICU services at different levels.

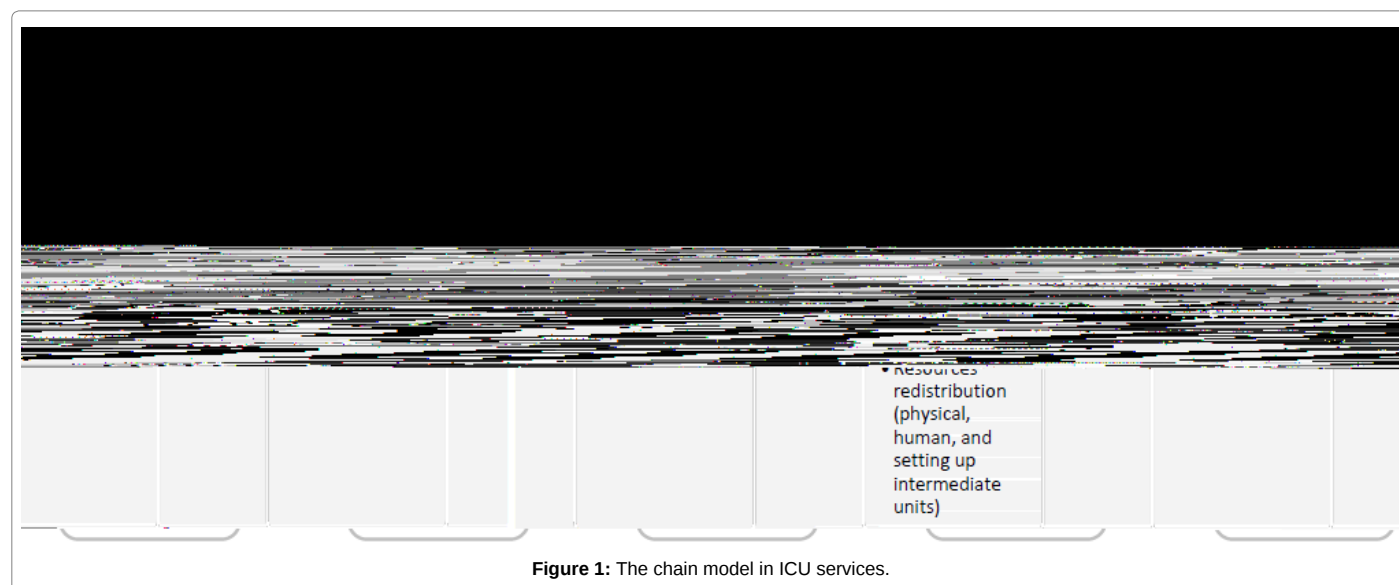


Figure 1: The chain model in ICU services.

appropriate financial mechanisms, problems such as increased costs and reduced efficiency will occur. Overall, it is possible to move towards rationing and cost reduction using two categories of deterrent and incentive measures as well as modifying financial mechanisms.

- Budget reallocation: Currently, a large part of the budget of health systems is spent on third-level services and ICU services, which can be reduced by redistributing these budgets and even reducing the budget of these wards using rationing methods. Here the important point is that redistribution should direct resources to preventive services and primary care services [13].
- Restrictions on ICU service coverage following elective surgeries: In many elective surgeries, the patient spends time in the ICU after leaving the operating room. The frequency of ICU admissions can be reduced by reducing the insurance coverage of ICU services after elective surgeries and thus reduce the related costs. As insurance organizations reduce cost coverage, self-rationing occurs as ICU care costs become more realistic.
- Designing and setting up intermediate care units: In many cases, patients need more services than services provided in medical wards and less than services provided in the ICU. In this regard, it is possible to reduce the load of ICU services by setting up intermediate wards and establishing this group of patients in such units. These units have a higher nurse-to-patient ratio than general hospital wards and also have higher facilities for monitoring patients, but have less staff and fewer costs than ICUs [15].

Organizational level: Medical universities and hospitals

- Development and design of organizational clinical protocols: To support the implementation of national clinical guidelines that have been developed at the policy level to reduce costs, clinical protocols should also be developed at the organizational level.
- Redistribution of human resources in the ICU to reduce unit-cost: This strategy allows us to reduce costs by reducing staff in ICUs and redefining their job duties or educating normal staff to undertake higher levels of care with less costs [10].

Service provider level: Treatment staff

- Decision-making base

guidelines and adjusted protocols", "resource redistribution" and "designing and implementing appropriate financial mechanisms" were selected as the final proposals that had the highest compliance with the desired outputs and received the highest score based on the above-mentioned indicators. In this regard, we discussed strategic

- Encouraging institutions through materialistic and non-materialistic incentives to develop compulsory organizational protocols in line with clinical guidelines and implement them through law enforcement and providing incentives to comply with those clinical guidelines which are not included in the form of mandatory protocols.
- Development of supportive rules in clinical guidelines with the active participation and support of decision-makers and judicial authorities to prevent defensive medicine, which increases costs by over-prescribing low-impact services [16].

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10. Skowronski GA (2001) Bed rationing and allocation in the intensive care unit. *Curr Opin Crit Care* 7: 480–484.
 11. Rubenfeld GD (2012) Cost-effective critical care: Cost containment and rationing. In Thieme Medical Publishers pp: 413–420.
 12. Tran DT, Thanh NX, Oppenorth D, Wang X, Zuege D, et al. (2019) Association between strained ICU capacity and healthcare costs in Canada: A population-based cohort study. *J Crit Care* 51: 175-183.
 13. Cook D, Giacomini M (1999) The sound of silence: Rationing resources for critically ill patients. *Crit Care* 3: 1–3.
 14. Gopalan PD, Pershad S (2019) Decision-making in ICU—a systematic review of factors considered important by ICU clinician decision-makers concerning ICU triage decisions. *J Crit Care* 50: 99–110.
 15. Vincent JL, Burchardi H (1999) Do we need inq Ra ne V MV