

## An Interview Survey on Health Priority Setting Practice in Iran

<sup>1</sup>Sogand Tourani, <sup>1</sup>Mohammadreza Amiresmaili, <sup>1</sup>Mohammadreza Maleki and <sup>2</sup>Mohammad Hadian

<sup>1</sup>Department of Health Services Administration, Faculty of Management and Medical Informatics,  
Iran Medical University, Valiasr Street-Shahid Babak Bahrami Alley, Tehran, Iran

<sup>2</sup>Department of Health Economics, Faculty of Management and Medical Informatics,  
Iran Medical University, Tehran, Iran

**Abstract:** The aim of this study was to analyze the process of priority setting at different levels of Iran's health system. In this qualitative study, 19 Experts of different levels of health system were interviewed. The semi-structured interview guide was designed based on literature review and three initial in depth interviews. Framework analysis method was used for the analysis of qualitative data. Eight themes and 21 sub-themes regarding health priority setting were identified. Macro level priority setting, priority setting between and within medical universities, priority setting criteria, Measuring costs and effectiveness, Resource shift, Public participation and decision making rule for resources allocation. Health sector share of public budget was unrealistic and was based on historical patterns. Political factors and lobbying influenced resource allocation between and within medical universities. Resource allocation was mainly structure based and health factors were least influential. Although, resource shifting was possible within plans but it was impossible within them, public participation in priority setting was not sufficient and systematic, decision making on resource allocation was mainly based on needs and judgment. Some priority setting activities are in progress but they do not tend to be either integrated or organized. In order to improve priority setting, taking steps toward explicit approaches is suggested.

**Key words:** Health priority setting, rationing, health system, framework, Iran

---

### INTRODUCTION

Health systems faced in challenge of resource scarcity (Mitton and Donaldson, 2004b) and have not sufficient resources to respond to all health problems and target groups simultaneously (Center for Disease Control and Prevention). Hence, priority setting or rationalizing resource use is an inevitable aspect of every health system (Oliver, 2003), a phenomenon which is more important in developing countries such as Iran (Malekafzali *et al.*, 2007).

Priority setting defined as resource distribution among competing needs and demands (Gibson, 2005) is one of the most important health planning tasks that face governments in seeking to enhance the distribution of health care resources (Segal and Chen, 2001). Priority setting occurs simultaneously at the macro (health system), meso (institutional) and micro (bedside) policy making levels (Martin and Singer, 2003). At the highest

level, governments make decisions regarding prioritizing health services in their annual budgets and at the lowest level, clinicians and other professionals set priorities regarding, which patient to get services first (Obermann and Tolley, 1997). As long as there has been any kind of health care, there have been issues of health care prioritization and rationing but the nature and the content of the discussion has changed (Markku *et al.*, 2003). This challenge is relevant in both developing and developed countries, while developed countries challenges are mainly caused from aging population, expensive medical equipment and increasing public demand (Kapiriri *et al.*, 2007; Norheim, 2003), developing countries challenges are mainly the growing gap between health needs and available resources to satisfy them (Bryant, 2000). Insufficiency of resources for satisfying demands is one of the problems of Iranian health system too and authorities of health ministry have become aware of the necessity of priority setting according to limited

resources (Asadi-Lari *et al.*, 2004). Priority setting usually happens implicitly, according to policy makers and clinicians judgments but implicit priority setting neither lead to optimum resource use nor is ethically acceptable. Hence, taking steps toward explicit approaches to priority setting is an inevitable way toward every health system. Having a clear image of current state of priority setting is a prerequisite for developing any explicit initiative toward evidence based priority setting.

**Health system in Iran:** The Islamic Republic of Iran, a low-middle income oil exporting country with an area of 1.648 million km<sup>2</sup> is the fourth largest country in Asia. The country has 30 provinces, 293 districts, 885 cities and approximately 68,000 villages. The total population, which doubled in the course of the last three decades of the 20th century was estimated to be 70 million in 2007 (Eastern Mediterranean Regional Office, 2009).

Total cost for health system was 7.8% of GDP in 2006. General government expenditure on health as percent of total health expenditure reached to 55.8% in 2004, this year Out-of-pocket expenditure as percent of total health expenditure equaled to 41.9% (WHO, 2000; Eastern Mediterranean Regional Office, 2009). In Iranian health system, all decisions for governance, policy making, planning and implementing the plans are centrally made by Ministry of Health. At the next level, forty medical universities are in charge of providing health services, supervising private sector as well as training medical sciences students and conducting researches in the field of medical and health sciences (Eastern Mediterranean Regional Office, 2009).

**Health priority setting in Iran:** The review on published or unpublished research regarding health services priority setting in Iran only identified two studies by Malekafzali *et al.* (2004) in the health research priority setting 2004, 2007 and one by Asadi-Lari *et al.* (2004) on the relation between health related quality of life and priority setting 2004.

We reviewed the rules and documentaries related to health system in Iran and identified following approved regulations and actions taken in relation with priority setting. In clauses 2 and 6 of organ Act and duties of Ministry of Health and Medical education approved by Assembly of Islamic Council (parliament), in 1988 the priority of primary health care and satisfying the needs of indigents is stressed respectively (Ministry of Health and Medical Education). Study on burden of disease conducted by Ministry of Health in 22 provinces is another action has been taken along with exploring the most important health needs of nation. This study

indicated that the performance of health network resulted in controlled and reduced infective and parasitic diseases considered as the main death causes during previous years therefore, the priority of country has also been changed to chronic diseases (Presidential Deputy for planning and strategic control).

Along with, Article 193 of third five-year national development plan Act Article 89 of fourth 5 years national development Act clarifies that to increase the access of whole population to medical services and promoting its quality as well as adopting a necessary and suitable capacity, establishment, development and equipping and/or changing the capacity of medical services across country as well as allocating human resources for providing services must be conducted based on health services leveling (Presidential Deputy for planning and strategic control). Article 90 of Fourth 5 years national development plan Act (Presidential Deputy for planning and strategic control) as well as clause 19-5 for declaring the general policies of fifth 5 years national development in the framework of 20 years perspective (General Policies) can be considered as other legal articles influencing the prioritization. Based on the data, out-of-pocket expenditure as percent of total health expenditure must be reduced to 30%, this act implies that government must prioritize the health sector over other sectors by allocating more of public funds to health.

**Objective of this study:** The qualitative study reported in here was conducted as part of a multi part project that also included a review of health priority setting models. For this qualitative study, we focused on current state of priority setting in Iranian's health system. We aimed to explore key themes for introducing a systematic model for health priority setting to be applied for Iranian's health system.

## MATERIALS AND METHODS

**Interviewees:** We interviewed a purposive sample of 19 participants (86% response rate). Participants were identified in consultation with two authorities of health ministry, one former authority and interviewees. The participants were invited by letters explaining the objectives of the study and introducing the investigators, followed by phone calls. Thirteen interviewees (3 females) from ministry of health (different deputies), four from medical universities and 2 from presidential deputy for planning and strategic control (one female) participated in the study. The criteria for choosing participants were extended experience in setting priorities and participating in planning teams.



**Interviews:** Fifteen face to face and four phone interviews were conducted in 2008, tape recorded and transcribed, each interview lasting 50-70 min. One researcher (M.A) conducted all the interviews. The interview questions were designed so that they captured opinions and beliefs of the participants regarding different aspects of priority setting in Iranian's health system. In order to have a better understanding of the context, first three interviews conducted in depth. These helped us to prepare a suitable set of questions for semi-structured interviews.

**Analysis:** All interviews were transcribed into Persian, while listening to the audio-tapes and simultaneously checking with the notes taken during interview. The entire transcriptions were read, while listening to the audio-tape for accuracy of transcription. All these Persian transcripts were translated into English by one of the researchers (M.A). However, some portions of the Persian transcripts were translated separately by other researchers and some were back translated to check linguistic reliability and correctness in translation.

Framework method was used for the analysis. This framework consists of five steps of familiarization, identifying a thematic framework, indexing, charting and mapping and interpretation (Rithcie and Spencer, 1994).

A contact and content summary form was developed for each interview during familiarization process. An initial thematic framework was developed using interviews, prior thoughts and literature. A preliminary framework was developed and then discussed in a series of iterative meetings between the researchers then the thematic framework was checked against the interviews through repeating the familiarization process, then sections of data were indexed with one or more codes, where necessary appropriate then the coded text was discussed with other researchers and coding was adjusted where appropriate, this process was repeated several times for all the interviews. We produced one table for each theme and assigned rows to sub-themes and columns to interviewees then data were transferred on to the tables to produce analysis chart. We compared the views of each interviewee across different sub themes (looking across the columns) and the views of different interviewees about each sub theme (looking across rows). The relationships between sub themes and themes were also investigated. We consulted the transcribed interviews and added extracts to chart wherever necessary. The interpretation of the themes followed an iterative process similar to what explained for the indexing. The initial framework contained eight themes which didn't change but sub themes changed several times during the analysis, we obtained verbal consent from the participants and offered no incentives to participants.

## RESULTS

In this study, based on framework analysis done, we identified 8 themes and 21 sub themes (Table 1).

**Macro-level priority setting:** Priority setting occurs at different levels, the Macro-level relates to how the share of health is determined from public budget, this share in Iran, is called health per capita. Participants believed that health per capita was not sufficient and it might endanger service provision: Determining insufficient health per capita resulted in dissatisfaction of people with provided services (P.8) with this low per capita, public hospitals and health centers may damage more than others (P.7).

Participants stated that unfair adjustment of health per capita with inflation in previous years has lead to current situation: per capita has not proportionally increased with national income and even considering the price index and inflation, one can state that it has been declined year to year as well (P.4), to determine the health per capita, government may only consider its cash but doesn't consider the inflation (P.7).

An interviewee acknowledging the necessity of prioritizing health sector to others believed that for increasing the share of health management organization (former) has always encountered this problem that how can provide additional resources. During several years, management organization (former) has always encountered this problem how to increase the share of health with reducing the share of other sectors. Indeed, it could not reduce some budgets from a sector and add it to another sector (P.8).

Per capita was determined based on historic patterns i.e., based on previous years as stated by some interviewees health share of gross domestic product is a trend, time-time, a share has been considered for it and may be increased each year (P.8).

Some interviewees thought, insufficient per capita is reducing public payments for health expenditures: during recent years, increased health costs on one hand and limited budgets of government on the other hand have been the main challenges of health system, which caused limited role of government in health sector expenditures (P.4) if proposed per capita is approved, it will attain out of pocket payments with 10-15% increased to 65% and so it will fade government role in this sector (P.5).

**Priority setting between different universities:** Priority setting and resource allocation was structure based and allocated to facilities, money allocated to universities for urban and rural health depends on number of units providing services (P.1): We allocate resources to what

Table 1: Themes and sub-themes of health services priority setting in Iran

Themes	Sub-themes
Macro level priority setting	Insufficient per capita Historically based per capita Reduced role of government in financing health services Resource allocation based on structures Attending to regional differences Encouraging cost increasing
Priority setting across medical universities	Ignoring the health situation Historic -based allocation and haggle Limited role of health ministry
Priority setting within medical universities subsets	Political dimensions Historic-based Criteria for selecting the disease Method for prioritizing diseases Criteria for choosing the interventions
Priority setting criteria	Measuring
Measuring effectiveness and costs	Difficulty to determine the effectiveness and costs accurately
Resources shift	Inter-plan resources shift Intra-plan resources shift
Public participation	Influence in determining the priorities Needs based decision making
Decision making rule for resources allocation	Judgment based decision making

we have built (P.12) main factor for allocating resources is the number of health posts and health centers in that region. We allocate money to what we have built (P.13). In this method, regional differences were considered when developing new facilities. In the master plans for development it is clear where to build new facilities and regional differences are considered (P.13).

It was perceived that structure based resource allocation encouraged cost increase by current method, we encourage units to acquire more facilities (P.17), managers of universities instead of competing for controlling the costs and promoting their performance, compete for increasing the number of facilities to obtain more money (P.12) by this method, while bed occupancy rate is 60% in a Province, new hospital beds to gain more resources are still demanded (P.13).

Participants clarified that health status is ignored in current method of resource allocation: allocating resources is not related to the health status (P.13), what is necessary to consider when allocating resources but now there is no tool for it and may not be considered as the main factor is the health status (P.1).

Resource allocation between universities was implicit and historic-based, according to some participants: When there are limited resources, it may be shared such that always powerful may benefit more (P.12) based on presentation of universities, resources may be allocated it means more of it is based on haggle (P.17). An interviewee brought an interesting point herein: practically to allocate resources not for related bed not the number of related human resources budgeting will be based on last year budget with some percent increase and this really occurs (P.12).

The role of health Ministry in resource allocation to universities perceived limited: Universities receive money

by two methods its main and important part is directly received from management organization (former) (P.9) ministry has limited role in allocating resources (P.14).

Some participants while acknowledging the weaknesses of existing method suggested that: to have a better resource allocation, we should move from hardware to software discussion and set priority for software (P.13) factors mainly obtained from the health status of target groups must be defined and influence resource allocation because we are expending the money for health so it is necessary to consider such factors (P.12) if population considered, when allocating the resources or equity applied for it, it might certainly result in better prioritizing (P.17).

**Priority setting within medical universities:** Political issues and community sensitivities determined how the resources allocated within universities: actually where university chancellor thinks people may object, he allocates resources there for example for a hospital people may complain so he will consider it more (P.3), how such chancellor may suppress such voices to pass his time is more important and more prioritized than health needs (P.1).

Again here resource allocation was historic-based: the pattern in the university is in such a way and powerful men benefit more (P.3) approved budget is always less than requested one consequently if you requested X, only 1/2, 1/3 or 1/5 of submitted budget may be approved and only it is a few percent more than previous year (P.3).

**Priority setting criteria:** Health deputy center for disease management has selected some diseases and has been planning to control them through health network,

participants stated that these diseases have been selected based on different criteria: To prioritize these diseases, we initially calculate the diseases prevalence and incidence rates in the society as well as their burden (P.15), the criterion for prioritizing cardiovascular diseases is their increased mortality (P.2). prioritizing is not only based on mortality rate, or disease burden and there are other factors along it like political issues and other subjects enforced by upper authorities (P.11).

Systematic processes have been applied to select prioritized diseases: references of WHO (2000) as well as skilled team and some leaders of this field and guidelines of WHO were used to provide a list of diseases could be included (P.18), in some provinces also if there was a non-epidemic local disease, the situation of that disease applied in our study as well (P.15).

Some criteria were mentioned for determining interventions effective on diseases: interventions we consider for cancers are based on indices, i.e., cost effectiveness is one of the indices we can consider for each intervention (P.19), we use modality and prioritize it based on possibilities and infrastructures of the country, it is not such that to paralyze the country for applying the best (P.10) selecting the interventions are firstly based on scientific evidence and secondly based on recommendations of national committee of that disease, (P.6).

**Measuring cost and effectiveness:** Effectiveness was usually measured by research centers although, some difficulties existed: We asked research centers to design some interventions; obtain their results and tell us which one has less costs and better outcomes (P.2), measuring the effectiveness of a single intervention separately is difficult because their effect is multi-factorial and they are along with national plans, other interventions and increased awareness of people (P.6), it is not clear how much we spent and how much may be benefited whether to see benefit in effectiveness terms or monetary terms (P.16).

**Resource shift:** By priority setting we intend to increase allocative efficiency and benefit more of limited resources therefore, it is necessary to shift resources from less cost effective interventions to more cost effective ones.

For shifting resources between plans, some participants believed that: It is possible for universities to shift resources between plans and convey it from one plan to another one (P.2) if necessary, it is possible to shift resources between plans under specific conditions (P.10). On the other hand, some other participants

believed that: Resource shift is not possible between different centers of health deputy, because these centers are independent entities (P.16).

Resource shift within different plans of a center was possible: In certain conditions with necessity to support a plan, we try to shift resources slightly from existing plans in the center to others (P.16), We may allocate more resources for a plan in a certain year, if there was not increased resources, we may provide such additional resources from other plans (P.10).

**Community participation:** Community participation was indirect and weak: Needs assessment and occasionally indirect effects of people's desire may change the priorities as well (P.15). People had no more roles yet but occasionally that social pressure determines the priorities, i.e., people want this work to be done but it is not such that people must certainly be asked (P.19), we didn't ask people's view but public perception is among the factors may be considered while developing the plans (P.16). The limitations prohibit us to ask people's views through a regular research process (P.11).

**Decision making rule:** In case of resource expanding or contracting, decisions regarding how to reallocate resources were made based on needs and/or judgment: while there is increased resources, we allocate them where it is needed (P.15), after long years of experience. The experts can distinguish, which plan is more important than others and set priority for resource allocation (P.11).

## DISCUSSION

This study indicated that although some steps have been taken toward explicit priority setting, but they have not been well integrated and priority setting mostly happens implicitly. Acts have been passed but they have not had the intended effect, for example: fourth five-year national development Act and general policies of fifth five-year national development Act clarify that out of pocket payments for health costs have to be reduced to 30%, which imply the necessity of giving more priority to health compared to other sectors from public budgets. Study of existing situation indicated that this has not been succeeded yet and health per capita determination trend is increasingly making health system far from this goal, a trend opposite to Article 90 of fourth development Plan Act.

Priority setting and resource allocation could be based on different criteria: population, catchment area, morbidity, disease prevalence rate, equipment and beds as well as factors like customs and native culture are among them (Ghafari and Ahmadi, 2006). This study indicated



that one of the main factors for allocating resources to different universities is their existing structures, i.e., where there are facilities, resources may be allocated and this can result in ignoring the more important factors for example in this method, the number of children and elderly living in a region and epidemiological pattern of that region may be ignored. While the most effective basis for resource allocation should be equity and population needs (Gugushvil, 2007). This implies evaluation of different needs among different populations (for example disease intensity, distance from center) (Mooney, 2006), to provide the possibility of equal access to health care (Rice *et al.*, 2000).

Most health services depend on geographical conditions therefore, one of the most fundamental concerns in most countries is how to allocate resources to different regions (Smith, 2008). This study indicated that geographical differences were considered via facilities built again, such differences were considered in establishing the structures, i.e., in developmental plans based on master plans, it would be determined that what unit and where to be constructed.

This study also indicated that current method for allocating resources is faced in different difficulties, i.e., budget is allocated to facilities without any attention to their utilization status. Taking this method has resulted in increased demand of medical universities for developing new facilities because it implies more resources for them. This is similar to a phenomenon called Budget game in which the main aim of actors is maximizing their budgets. In this phenomenon, managers try to achieve more budgets for their department by satisfying their upper officials (Lammintakanen, 2005) and despite partial utilization of existing facilities, universities managers were still seeking for new units and facilities.

Allocating, the resources between different universities was historically-based and this may cause bias toward the benefits of certain regions (Smith, 2008). As a result, if some universities took fewer budgets in previous years they are always condemned to take fewer budgets.

In context of health care priority setting, because demand for some services excess supply as well as wrong perception on equality of health and health care, political dimensions exists (Hunter, 2003). We found that managers of universities tried to spend resources where they feel people are more sensitive toward them. This indicates the fact that determining the priorities in such parts is not usually based on a systematic and clear approach, which is based on exploring the most important needs and allocating the resources in a way that results in optimized resource use, rather it is based on judgment of

universities authorities. Oberlander *et al.* (2001) specified this as paradox of political rationing and believe that the more public the decisions related to priority setting are the more difficult is rationing the services to control costs. For this, Robinson (1999) writes: governments and planning bodies make decisions for prioritizing based on a set of factors like political concerns and media pressures albeit, resource allocation based on political patterns would not result in optimal use of resources (Mitton and Donaldson, 2004a).

The study indicated that allocating resources and prioritizing processes within medical universities are ineffective and depend on haggling potency of the unit leader and previous allocating decisions although, it is not limited to Iran and in fact, inefficient processes for resource allocation are global challenges and it is necessary to develop evidence-based processes for priority setting (Maynard and McDaid, 2003). Participants in a study related to priority setting in Uganda thought that although, there are formal reasons for priority setting but in fact informal factors significantly influenced priority setting and departments whose leaders knew how to lobby make noise and quickly use up their resources are usually prioritized (Kapiriri and Martin, 2006), of course informal factors like lobbying are also applied in high income countries (Walton *et al.*, 2007).

Allocated resources to units (in different areas) were fewer than what were requested and this resulted in problems for performing their duties. A similar finding observed in Uganda, where budget allocated to hospitals was approximately 30% of submitted budget (Kapiriri and Martin, 2006).

For identifying prioritized diseases many criteria has been suggested: criteria like medical (Treatment efficiency) and non-medical ones (e.g., patient age) has been applied (Kapiriri *et al.*, 2004) although, based on rule of rescue mere technical approaches based on cost effectiveness are not acceptable from society's viewpoint (Elliott and Payne, 2005). To determine prioritized diseases, many criteria were relevant like disease intensity, political factors, disease burden, preventability and prevalence rate. Wide variety of applied criteria indicates that the final determinants are political issues and reflection of disease in the society. For example, HIV, despite its less prevalence in Iran has been put in the category of prioritized diseases.

For selecting interventions to manage diseases, various indices and measures like costs, effectiveness, reviewing the published literatures and recommendations of WHO (2000) were mentioned. Relying on cost effectiveness index results in more priority for cheap interventions with economic benefits and great effects,

even in the poorest countries (Molyneux *et al.*, 2005). One of the most popular concerns related to healthcare priority setting is related to accessing the data.

To determine how to use resources optimally, two groups of data are necessary: Data on costs and data on outcomes (Mitton and Donaldson, 2004b). Measuring the interventions effectiveness was based on research projects ordered to research centers and/or results of pilot studies conducted in some medical universities. To accurately measure the costs and effectiveness interventions it is necessary to analyze the risk factors influencing coincidentally on several diseases, because without such information, it is difficult to evaluate the interventions effectiveness (WHO, 2000). One of the main barriers along with measuring the interventions costs and effectiveness accurately is the multi-factorial nature of some interventions and the fact that there are other factors besides interventions performed by Ministry of Health, which rise difficulties measuring and assessing the effects and costs of interventions. Difficulty in determining the scale and suitable criteria to measure costs and outcomes was another problem observed in the study, a similar problem mentioned in Denmark, where priority setting committee detected the problems for using analyses related to cost like ambiguity in using utility measures and need for more information (Danish Council of Ethics, 1997).

The primary task of priority setting is to determine desirable resource shifts-health services to be expanded and those to be contracted (Segal and Mortimor, 2006). Therefore, possibility of resource shift is one of the necessities that any prioritization approach needs it the most. We explored that if necessary, one can shift resources within plans but it is less likely to easily shift funds between plans. This is one of the attributes of budgeting systems in which funds are allocated based on plans, challenge of financing under a global budgeting system results in segmentation of health sector to plan budgets and/or budget silos defined based on disease stage or modality. One consequence of this fragmentation is that allocation and reallocation of resources commonly occurs within, rather than between budgetary silos (Segal and Mortimor, 2006).

Public must be considered as a key stakeholder of the health system because any health system is established to serve the society and decisions related to priority setting in the health system may influence directly all members of society and they may provide the health system funds by paying for taxes and premiums (Martin, 2007). Furthermore most authorities believe that decisions made by experts without community participation are not desirable (Fleck, 2001). We found out

that there are no defined mechanisms for community participation in the field of priority setting and policy makers own perceptions of public viewpoint are the only pertinent factor regarding community participation. Such participation is not enough and it is necessary to take required action to involve public actively in priority setting because literatures suggests that benefits like promoting activities performed along with problem solving, increased acceptability of prioritization and needs assessment could be achieved by involving public (Malekafzali *et al.*, 2007).

Faced with limited resources, in order for optimally using resources, a predefined decision rule is necessary to guide resource shift. The study showed that in case of increasing or decreasing resources, they will be reallocated based on predefined needs although, determining the needs was dependant on general perception and judgment managers may have of their units. For this, Harrison (1995) believes that health priority setting is along with moral, economic social, political and organizational concerns and implies using and applying political and value judgments. Mitton and Donaldson (2004b) believe that evidence, values and interpretations all are sources that used for decision making although, the combination varies by different conditions and its final composition is a function of costs and benefits for changing the existing decision making basis.

## LIMITATIONS

The findings of this study may not be generalizable, although this was not our aim. We did not focus enough on any of priority setting levels (Macro, Meso, Micro) because of study limitations, if we could focus more on these levels better understanding could be achieved and more barriers and facilitators for introducing an explicit approach for priority setting could be identified.

## CONCLUSION

We have provided a description of priority setting at different levels of a developing country health system. The thematic framework improves understanding of priority setting in Iran and provides some insights for introducing explicit methods for priority setting. The study indicated that although, some initiatives have been taken toward explicit priority setting but they were neither organized nor integrated enough and still priority setting processes are conducting implicitly. Future studies should attempt to discover further details of priority setting in different levels.



## REFERENCES

- Asadi-Lari, M., H.R. Javadi, M. Naghavi and D. Gray, 2004. The role of health related quality of life (HRQL) measurement in setting priorities in the Iranian health care system. *Proceedings of 5th International Conference on Priorities in Health Care*, Nov. 3-5, Wellington, New Zealand, pp: 1-142.
- Bryant, J.H., 2000. Health Priority Dilemmas in Developing Countries. In: *The Global Challenge of Health Care Rationing*, Coulter, A. and C. Ham (Eds.). Open University Press, Philadelphia, pp: 63-73.
- Danish Council of Ethics, 1997. Priority setting in the health services. [http://etiskraad.synkron.com/graphics/03\\_udgivelser/publikationer/ENG002.HTM](http://etiskraad.synkron.com/graphics/03_udgivelser/publikationer/ENG002.HTM).
- Eastern Mediterranean Regional Office, 2009. Regional health systems observatory-health systems profile-Islamic republic of Iran. <http://www.emro.who.int/Iran/countryprofile.htm>.
- Elliott, R. and K. Payne, 2005. *Essentials of Economic Evaluation in Healthcare*. 1st Edn., Pharmaceutical Press, London.
- Fleck, L.M., 2001. Healthcare justice and rational democratic deliberation. *Am. J. Bioeth.*, 1: 20-21.
- Ghafari, A. and K.H. Ahmadi, 2006. Health services leveling from map to reality. *Med. Eng. J.*, 31: 43-49.
- Gibson, J., 2005. Ethics and priority setting for HTA: A decision-making framework. CCOHTA Invitational Symposium, April 25, University of Toronto Joint Centre for Bioethics, Canadian Priority Setting Research Network, Ottawa, pp: 1-14.
- Gugushvil, A., 2007. The advantages and disadvantages of need-based resource allocation in integrated health systems and market systems of health care provider reimbursement. MPRA Paper No. 3354, [http://mpra.ub.uni-muenchen.de/3354/1/MPRA\\_paper\\_3354.pdf](http://mpra.ub.uni-muenchen.de/3354/1/MPRA_paper_3354.pdf).
- Harrison, S., 1995. A policy Agenda for health care rationing. *Br. Med. J.*, 51: 885-899.
- Hunter, D.J., 2003. *Desparately Seeking Solutions: Rationing Healthcare*. Pearson Education Ltd., London, Longman.
- Kapiriri, L. and D. Martin, 2006. Priority setting in developing countries healthcare institutions: The case of a Uganda hospital. <http://www.biomedcentral.com/1472-6963/6/127>.
- Kapiriri, L., O. Norheim and D.K. Martin, 2007. Priority setting at the micro-meso and macro levels in Canada, Norway and Uganda. *Health Policy*, 82: 78-94.
- Kapiriri, L., T.M. Arnsen and F. Norheim, 2004. Is cost effectiveness analysis preferred to severity of disease as the main guiding principle in priority setting in resource poor setting? The case of Uganda. *Cost effectiveness and Resource Allocation*. <http://www.resource-allocation.com/content/pdf/1478-7547-2-1.pdf>.
- Lammintakanen, J., 2005. *Health care prioritization; Evolution of the Concept, research and policy process*. Doctoral Dissertation, Faculty of Social Sciences of the University of Kuopio, Department of Health Policy and Management.
- Malekafzali, H., A.S. Foruzan, F. Bahreini and F. Alaedini, 2004. Needs Assessment and priority setting in healthcare and research in ten universities of medical sciences in Iran. Tehran, Iran.
- Malekafzali, H., F.S. Bahreini, F. Alaedini and A.S. Foruzan, 2007. Health system priorities based on needs assessment and stakeholders participation in Islamic republic of Iran. *Hakim Res. J.*, 10: 13-19.
- Markku, M., R. Ollipek, L. Johanna, I. Vellipecta, K. Juha and H. Piryo, 2003. Clinical management and prioritization criteria: Finnish experiences. *Health Organ. Manage.*, 17: 338-348.
- Martin, D. and P. Singer, 2003. A strategy to improve priority setting in health care institutions. *Health Care Anal.*, 11: 59-68.
- Martin, D., 2007. Making hard choices: The key to health system sustainability. *Bioethics*, 2: 5-9.
- Maynard, A. and D. McDaid, 2003. Evaluating health interventions: Exploiting the potential. *Health Policy*, 63: 215-228.
- Mitton, C. and C. Donaldson, 2004a. Healthcare priority setting: Principles, practice and challenges. *Cost Eff. Resour. Alloc.*, 2: 3-3.
- Mitton, C. and C. Donaldson, 2004b. *Priority Setting Toolkit: A Guide to the Use of Economics in Healthcare Decision Making*. 1st Edn., BMJ publishing, London, pp: 33-46.
- Molyneux, D.H., P.J. Hotez and A. Fenwick, 2005. Rapid impact interventions: How a policy of integrated control for Africa's neglected tropical diseases could benefit the poor. *Plos Med.*, 2: 336-336.
- Mooney, G., 2006. Priority setting: The biggest gap in Australian health planning? Centre for policy development, <http://cpd.org.au/article/priority-setting-biggest-gap-australian-health-planning>.
- Norheim, O., 2003. *Limiting Access to Health Care: A Contractualist Approach to Fair Rationing*. Oslo University Press, Oslo.
- Oberlander, J., T. Marmore and L. Jacobs, 2001. Rationing medical care: Rhetoric and reality in the Oregon Health plan. *Can. Med. J.*, 164: 1583-1587.



- Obermann, K. and K. Tolley, 1997. The State of Health Care Priority Setting and Public Participation. The University of York, New York.
- Oliver, A., 2003. Health care priority setting. Implication for Health Inequalities Proceeding from a Meeting of the Health Equity The Nuffield Trust. [http://archives.who.int/prioritymeds/report/append/33e\\_apx.pdf](http://archives.who.int/prioritymeds/report/append/33e_apx.pdf).
- Rice, N., P. Dixon, D.C. Liolyd and D. Roberts, 2000. Derivation of a needs based capitation formula for allocating prescribing budgets to health authorities and primary care groups in England: Regression analysis. *Br. Med. J.*, 320: 284-288.
- Rithcie, J. and L. Spencer, 1994. Qualitative Data Analysis for Applied Policy Research. In: *Analysing Qualitative Data*, Bryman, A. and R. Burgess (Eds.). Routledge, London, pp: 173-194.
- Robinson, R., 1999. Limits to rationality: Economics, economists and priority setting. *Health Policy*, 49: 13-26.
- Segal, L. and D. Mortimor, 2006. A population-based model for priority setting across the care continuum and across modalities. *Cost Eff. Resour. Alloc.*, 4: 6-6.
- Segal, L. and Y. Chen, 2001. Priority Setting Models in Health: A Critique of Alternative Models. Monash University, USA., pp: 33-46.
- Smith, P.C., 2008. Resource allocation and purchasing in the health sector in the English experience. *Bull. World Health Organ.*, 86: 884-888.
- WHO, 2000. The world health report 2000-health system: Improving performance. <http://www.who.int/whr/2000/en/index.html>.