Original Article

Designing a health equity audit model for Iran in 2010

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Abstract

BACKGROUND: Health equity audit, as an alternative solution, is a process by which local partners systematically review inequalities in the patients’ health, their access to appropriate services and health system outputs. Then, necessary activities needed in order to have more equitable services are agreed on and these concurrences become the executive scheme and action initiates. Therefore, it is pivotal for health care organizations to pay special attention to this important topic. The objective of the current study was to review the health equity audit model in different countries to gather viewpoints of various involved groups in health sector, particularly health experts, and to offer a practical and appropriate model for health equity audit in Iran.

METHODS: This study adopted applied research approach in two phases. In the first step, this study conducted theoretical health equity audit models in the texts; the experiences of other countries were studied and the most appropriate model for Iranian health system was selected. In the second step, this study employed the Delphi technique. According to the Delphi technique the questionnaire applied in order to gather data and then, the final model was extracted.

RESULTS: Agreeable topics, performing agencies, 6 equity audit stages, and equity indicators under 3 main parts with 16 sub-sections were elaborated and viewpoints of Iranian experts in the above fields were gathered and presented as the proposed health equity audit model for Iran.

CONCLUSIONS: This study reviewed the model of health equity audit for UK and provided a comparative model for health system of Iran with respect to the opinions of academic experts.

KEYWORDS: Health, Equity, Audit, Model.
caused by the need for equity\textsuperscript{1} and the importance of a key issue in health provision, the approach to health inequalities becomes obvious.\textsuperscript{3} Nevertheless measuring health inequality over time and across the countries still remains as a challenge.\textsuperscript{4}

The out-set point for health equity audit is a shared understanding of the differences between health inequality and inequity.\textsuperscript{5} Health care inequalities refer to differences in access to or availability of facilities and services\textsuperscript{6} and also differences in health experience and health outcomes between different population groups, according to socio-economic status, geographical area, age, disability, gender or ethnic groups.\textsuperscript{5}

In contrast, health inequity describes differences in opportunities for different population groups which result in unequal life chances, biased access to health services, nutritious food, adequate housing and so on. These can lead to health inequalities.\textsuperscript{5}

The overall aim is not to distribute resources equally, but rather in relation to the need in different groups,\textsuperscript{6} to reduce avoidable health inequalities and promote equal opportunity to the determinants of good health, and access to health and other services.\textsuperscript{5}

Health equity audit is designed to ensure that equity planners consider equity in their decision making and that the right decisions are made.\textsuperscript{6} Therefore, health equity audit is a pragmatic policy tool to ensure that services and resources are focused on issues that have the highest impact on health inequalities.\textsuperscript{7}

In order to overcome these health inequalities, in Iran, the government has the duty to prepare the overall program.\textsuperscript{2} The government's commitment in providing health is due to the fact that individual and community health are correlative and interdependent concepts. On the other hand, promoting community health status have positive effect on increasing production, productivity, employment and ultimately achieving the national development; so the government as the representative of the community must endeavor to provide equity.\textsuperscript{8}

Above points indicate the necessity of applying the model of health equity audit, but unfortunately, although there are many problems in the health sector in Iran and there is an urgent need for performing equity audit, this subject has not been heeded by the experts in the Ministry of Health. Therefore, this study aimed to review the UK health equity audit model, gathering viewpoints of different involved groups in health sector, particularly health experts, and offered a practical and suitable model for health equity audit in Iran.

Methods
This study adopted applied research approach in two phases. In the first step, this study conducted theoretical health equity audit models in the texts, and then, employed the Delphi technique.\textsuperscript{9}

Phase I. Data gathering about other health equity model
This phase was conducted to study the experiences of other countries in this regard and select the most appropriate model for Iranian health system.

The models of health equity audit of Canada, Australia, UK and Switzerland were reviewed and the UK's model for Iranian case was adopted. The UK's health administration system is the same as the current health management system of Iran (e.g., referral system for needy and villagers).\textsuperscript{10} There is also existence of an equity-oriented health system in UK, considering the importance of preparing and applying specific and practical patterns in health evaluation and principles of the 60-year-old National Health Service (NHS) in UK with the commitment to equal access and treatment for all, regardless of social class, income or status,\textsuperscript{11} and its positive actions in the field of health equity audit. However, scope of this research included the NHS of UK; and the time scope was from the past to the present. UK's information was collected by using the available on-line data bases, such as library resources and information released by NHS, the electronic databases like Iranmedex, PubMed, Emerald, and Science Direct.
Phase II. Employing Delphi technique

This study applied a questionnaire in order to gathering data. Questionnaire was made according to the UK model. It was categorized in four major sections: indicators, equity audit topics, organizations responsible for carrying out equity audit model and health equity audit stages. The validity of the questionnaire was assessed using the collective opinions of top five academic experts and specialists in health sector.

The questionnaires filled up by 18 academic experts including: scholars with a relevant university degree in health care management, members of expert committees, the people who have enough work experiences (at least 5 years) in health institutions, such as the Ministry of Health, Schools of Medical Sciences and Health Care Centers.

Finally, with the aim of achieving consensus on the basic model and converting it to the final model, a revision of the earlier model was done, defects (resulting from the phase II) were removed and the revised model was sent to the previous experts who participated in phase II. Once again, their views were collected. This process repeated several times until a concord was achieved and the final model were extracted.

Ethical considerations

Confidentiality of interviews was respected. Overall analysis of results was done without insertion of the names.

Results

A total of 18 academic experts were identified and the questionnaires were distributed among them in university, separately. 17 academic experts provided a positive response towards implementation of health equity audit in Iran, and only one did not provide a direct answer; instead he stated that, we must set concepts, principles and cultural infrastructures of equity first, and then audits may be performed.

Agreeable topics, performing agencies, equity audit stages, and equity indicators in the UK health system were identified and ultimately proposed viewpoints in the above fields were provided and the proposed health equity audit model for Iran was presented as follows.

Discussion

Health equity audit is a tool that enables the identification and redistribution of resources on the basis of need. The study results based on expert opinions is that using health equity audit in Iran's health system is valuable: 1. to increase awareness of its application across the country, 2. to document its practical ability in health centers, 3. to increase its acceptance politically, 4. to do self-assessment equity in health centers, 5. to prevent health inequalities in the future, 6. to consider local issues around the country and local population groups with special health needs, 7. to compare health inequalities in similar groups, 8. for focusing on community health issues to identify the

<table>
<thead>
<tr>
<th>Topics agreed by experts for health equity audit in order of preference for Iran</th>
<th>Health equity audit topics in United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Access to Primary Care</td>
<td>1. Smoking</td>
</tr>
<tr>
<td>2. Immunization and Vaccination</td>
<td>2. Heart Attack</td>
</tr>
<tr>
<td>3. Family Planning and Pregnancy Care</td>
<td>3. Childhood Obesity</td>
</tr>
<tr>
<td>4. Children’s Health</td>
<td>4. Coronary Heart Disease</td>
</tr>
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<td>5. Mental Health</td>
<td>5. Diabetes</td>
</tr>
<tr>
<td>6. Access of Elder People to Services</td>
<td>6. Cancer</td>
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<tr>
<td>7. Environmental Health</td>
<td>7. Mental Health</td>
</tr>
<tr>
<td>8. School Health</td>
<td>8. Elderly Diseases</td>
</tr>
<tr>
<td>10. Diabetes</td>
<td>10. Adolescent Pregnancy</td>
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</tbody>
</table>
Table 2. Audit organizations to perform equity in United Kingdom compared with the proposed audit organizations to perform equity agreed by experts in order of preference for Iran

<table>
<thead>
<tr>
<th>Proposed audit organizations to perform equity agreed by experts in order of preference for Iran</th>
<th>Audit organizations performing equity in United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Insurance Organizations</td>
<td>1. Local Authorities</td>
</tr>
<tr>
<td>3. City Council</td>
<td>3. Primary Care Trust</td>
</tr>
<tr>
<td>4. Private Companies</td>
<td>4. Local Strategic Partnerships</td>
</tr>
<tr>
<td>5. Cooperatives</td>
<td>5. Association of Public Health Observatories</td>
</tr>
<tr>
<td>6. University of Medical Sciences – Treatment Deputy</td>
<td>6. Public Health Observatories</td>
</tr>
<tr>
<td>8. Health Care Networks</td>
<td></td>
</tr>
<tr>
<td>9. Primary Care Centers</td>
<td></td>
</tr>
</tbody>
</table>

Table 3. Health equity audit stages in United Kingdom model compared with the health equity audit stages in the proposed model for Iran

<table>
<thead>
<tr>
<th>Health equity audit stages in the proposed model for Iran</th>
<th>Health equity audit stages in United Kingdom model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1: Equity profile: identifying the gap</td>
<td>Stage 1: Agreement on priorities and partners</td>
</tr>
<tr>
<td>Stage 2: Agreement on partners and issues</td>
<td>Stage 2: Preparation of an equity profile, based on data collection and analysis</td>
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<td>Stage 3: concurrence on priorities for action</td>
<td>Stage 3: Use of evidence to identify effective local action</td>
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<td>Stage 4: Agreement on significant local performances</td>
<td>Stage 4: Agreement on local targets with partners</td>
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<tr>
<td>Stage 5: Secure changes in investment</td>
<td>Stage 5: Assuring changes in investment/service delivery</td>
</tr>
<tr>
<td>Stage 6: Reviewing the progress and assessing its ultimate impact</td>
<td>Stage 6: Studying and investigating the progress/impact against local targets.</td>
</tr>
</tbody>
</table>

Figure 1. Health Equity Audit steps in the proposed Model for Iran
Details of the proposed model of health equity audit for Iran:

**Stage 1: Equity profile and Identifying the gap**
- Certainty of the accuracy and connection between existing data when performing partial equity profile in the region
- Becoming Familiar with the measurement methods of the dimensions of health inequalities in the region
- Becoming Familiar with factors creating health inequalities in the region
- Having good information in the field of local health inequalities
- Having high quality and complete data in the region
- Applying data in the operational level
- Becoming familiar with the weaknesses of existing statistical resources and trying to identify and cope with them
- Having sufficient understanding of data sources
- Ensuring of adequate information existence to support decision making
- Use of expert advice when needed
- Use of clinical input for supporting data analysis

**Stage 2: Agreement on partners and issues**

1. Awareness of the importance to deal with health inequalities and the role of health equity audit.
   - Adequate understanding of health equity audit cycle.
   - Awareness of the role of primary care centers, health networks, governmental and non-governmental health organization and other agencies, to tackle health inequalities.
   - Awareness of the role of public participation and volunteer service with accelerated approach for implementation of health equity audit.
   - Awareness of Board of Directors and Staff of the health care centers about current policies in the field of health inequalities, as an operational programme.

2. Gaining the knowledge of health inequalities in the region and the role of organizations to cope with those.
   - Having a suitable and available program for service delivery to deal with health inequalities based on priorities.
   - Clarity of personnel development strategy to deal with health inequalities.
   - Clarity of executive strategy to deal with health inequalities.

3. Interaction with partners.
   - Success in identifying key partners and engage them in a strategic level.
   - Having active role in the implementation of a suitable level.
   - Performing measures to ensure high levels of support.
   - Engagement with partners in the whole process.
   - Identifying priorities and shared goals.
   - Allocating budget for the main areas with the time schedule.
Stage 3: Concurrence on priorities for action

Identifying priorities for action to deal with health inequalities and agreeing about them.

- Divulging measures with high priority for those who need support.
- Identifying local actions that have had the highest impact.
- Ensuring of activities performed in order to deal with inequality in society as a whole, and not just vulnerable groups.
- Determining how to measure achievements.
- Determining who should take the action.
- Using operational equity profile.
- Using equity profile in planning.
- Becoming familiar with other key partners, interacting with them for the analysis of local priorities.

Stage 4: Agreement on significant local performances for gap depletion

Analyzing equity documents to identify items for reducing gaps in services and actions, in order to deal with health inequalities

- Determining effectiveness of the quality and quantity of primary care in deprived areas on the health results.
- Determining existing issues in access to primary and secondary care
- Using equity profile for identification of local health inequalities determinants.
- Determining the services given to recipient groups in comparison with relevant standards
- Performing adequate measures to prevent and fight diseases
- Providing timely services to those who are in danger.
- Proper use of resources
- Identifying appropriate action to reduce the gap
- Sharing information with local partners to agree about joint action
- Ensuring of the implementation of a range of measures to reduce development of health inequalities

Stage 5: Secure changes in investment

Creating successful changes in providing services and resources to deal with inequalities

- Determining the rate of success on moving resources or changing services in the field of health inequality
- Determining how to use the financial resources for reducing health inequalities
- Determining the cost of making supportive activities targeted, in order to empower individuals covered by supportive institutions and entities to deal with health inequalities

Stage 6: Reviewing the progress and assessing its impacts on the goals

Reviewing and evaluating the action’s progress and converting health equity audit into a progressive and prosperous process in primary care centers

- Determining indicators for reviewing actions taken having the desired effect
- Determining how to assess adequacy of changes being made for the reduction of local health inequalities
- Providing appropriate processes for effective assessment
Ensuring of performing a continuous and advanced process in health inequalities under inspection.
Determining the issues that are influential
Promoting participation of governmental and non-governmental institutions
Designing appropriate methods to enhance process feedback
Expanding a comprehensive health equity audit, in the dimensions of inclusiveness, learning and effectiveness.

**Indicators of health system:**

In order to monitor progress of equity audit at the local level and also to achieve national objectives, it is necessary that the set of indicators depicting targets and measuring variables locally be prepared. The purpose of so includes:

- providing information about the current situation and identifying where an action is needed.
- providing necessary support for setting local inequality destruction goals and more extensive targets.
- identifying the success rate
- banding together matching performance management
- monitoring progress, including process and output average
- supporting equity audit
- determining the effect on partners
- performing operations based on reviews, reports and other assessments (11).

Therefore, this section has tried to achieve the above goals by comparing health equity indicators in UK with those in Iran in the following table.

**Table 4.** Comparing sample indicators in United Kingdom health system with those in Iran

<table>
<thead>
<tr>
<th>Main</th>
<th>sub-section</th>
<th>Sample indicators of Iran’s health system</th>
<th>Sample indicators of United Kingdom’s health system</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B) population distribution</td>
<td>Percent of rural and urban populations.</td>
<td>Percent of rural and urban populations.</td>
</tr>
<tr>
<td></td>
<td>C) Social And Economic Status</td>
<td>Per Capita Gross National Income. Human Development Index. Percentage of population below the poverty line.</td>
<td>Percentage of income received by adult’s allowances. Not receiving sufficient income rates. Index Of Income Deprivation.</td>
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<tr>
<td></td>
<td>D) Education</td>
<td>Adult literacy rate of both sexes. Education level. University entrance rates. Percent of people aged 18 to 30 years in graduate courses.</td>
<td>University entrance rates. Percent of people aged 18 to 30 years in graduate courses. Percentage of parents with literate skills.</td>
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<tr>
<td>B) Inability</td>
<td>Inability separated by place, severity and cause. Healthy-Adjusted Life Expectancy. Health Related Quality Of life. Number of elderly who live at home and are under intense support. Number of older people in hospital emergency admissions. Number of pensioners.</td>
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<tr>
<td></td>
<td>Number of elderly who live at home and are under intense support. Number of older people in hospital emergency admissions. Number of pensioners. Level of financial support for pensioners.</td>
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<tr>
<td>C) Infectious Diseases</td>
<td>Number of reported cases of common infectious diseases. Bactericidal rate of common infectious disease. The prevalence and incidence of Tuberculosis. The prevalence and incidence of HIV/AIDS. Hepatitis C</td>
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<tr>
<td></td>
<td>Number of people infected with AIDS.</td>
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<tr>
<td></td>
<td>Proportion of pregnant women under 18. Abortion ratio before 13 weeks in people under 18. People ratio that have left treatment. Number of women murdered because of domestic violence. Rates of smoking in pregnant teenagers. Percent of mothers who smoke more than 10 cigarettes per day (during pregnancy). Preventive services delivery. Maternal age. New mothers social class. Number of schools or organizations requesting courses for contraception. Percentage of the equipment used to prevent pregnancy in the first intercourse with young people under 18. Number of devices distributed in any institution (for minor contraception).</td>
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<tr>
<td><strong>F) Children’s Health</strong></td>
<td>The incidence of diarrhea diseases in children younger than 5 years. Vaccination coverage of children under one year. Vaccination coverage of 12-23 month children. DMFT rates in 12 years old children. Smoking ratio in school-aged children. Percent of children under five years with upper respiratory symptoms that have been taken to service centers.</td>
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</tr>
<tr>
<td><strong>A) Physical and Economic Access</strong></td>
<td>Ratios of rural population covered by primary health services or have a family doctor. Percentage of the population under 24-hour ambulance coverage. Number of Physicians, dentists, nurses and pharmacists to whole population</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Percentage of breastfeeding. Obesity rates. Ratio of Infants born with low weight.</strong></td>
<td>Vaccination rates. Child care adopted ratio that after 12 months of their adoption are in the best condition. Proportion of children enrolled in the Social and Health Center &quot;as a child at risk&quot;. Children that have average level of communication, language and literacy at the basic steps. Number of children aged 10 to 17 years under one year ongoing care which received a final warning or conviction. Number of offender children under the care. Number of children enrolled in the Child Protection Registration office. Number of children with speech problems. Number of dead children with severe injuries caused by road accidents. Number of children in &quot;low-income families&quot;. Number of children aged 0 to 5 years with a mean proper personality, social and emotional development in their ages. Percentage of successful vaccination in children. Smoking ratio in school-aged children. Child Poverty Index. Percentage of children living in families that no one is employed. Percentage of children who are really suffering.</td>
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number ratio. Active and fixed bed ratio for each province population. Intensive care unit beds to population ratio. Number of urban emergency sites. Number of pharmacies (public and private) available to population. Households access ratio in rural and urban areas to healthy drinking water. Households access ratio in rural and urban areas to healthy sewage disposal system.

| C) Other Indicators | Reconstruction and equipping health centers rate. Level of disaster preparedness. Road safety rate. Correcting perilous points on the roads. The amount of two-band road-building. The use of safety belts and hats in road. The rate of respecting traffic regulations. | Number of speed cameras installed on the road stuck. Number of new pedestrian crossings. Number of traffic lights installed in the streets. Bus punctuality rate. The amount of unauthorized absences from school. Reconstruction rates in the public and private sector |

cumulative effects of unequal access to services, 9. to ensure that new initiatives and current priorities to reduce health inequalities have been in agreement with the Health Ministry schemes, 10. for the appropriate investment in reducing health inequalities, and 11. for the planning, implementation and evaluation of local interventions.

On the other hand, considering no investigation has been done about health equity audit in Iran and unfamiliarity with this topic, the obvious achievements of the study on identification of equity audit model was focusing on four major sections including indicators, equity audit topics, audit organizations to perform equity and health equity audit stages in UK and ultimately proposing a health equity audit model for Iran.

Since the selection of the topics related to health equity audit is based on the national and local preferences, 28 main axes (with 195 minor axes) in the UK health system were studied. Themes such as quitting smoking, stroke, childhood obesity, coronary heart disease, and diabetes were the top five main topics in health equity audit in the UK health equity system. In contrast with the 28 main axes above, access to primary care, immunization and vaccination, family planning and contraceptive services, children’s health and mental health were proposed as five priority (or primary) axes in Iran.

Since the organizations involved in the health equity audit process of UK are discordant with Iran, just to inform experts, information on the UK was given to them, and 9 organizations which could participate in equity audit process in Iran were listed in the questionnaire. Finally, after considering experts’ comments, suggested items are presented in Table 2. Considering that the Iranian government is the trustee, the result shows that the priority in equity audit for Iran will be with independent organizations.

In Iran according to a gap in the field of health equity, reviewing the health equity audit process, priority is to identify equity profile, identifying the gap and then, reaching an agreement with partners on issues with most dilated gaps; and another stage is to agree on priorities for action, but in UK the priority is to agree on priorities and partners, and preparation of an equity profile and analyzing the data and then identifying the use of
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Evidence for effective local action. It should be mentioned that from the six stages of the health equity audit review, expert comments in the stages 1, 2 and 3, were different from those in the UK model, but their comments were similar to those in the UK model in stages 4, 5 and 6.

One of the important achievements of this study was providing details of the proposed model of health equity audit for Iran for offering better understanding of the equity audit topic and optimizing its capabilities in Iran’s health system.

Table 4 contains health equity and health inequality indicators under three main parts: demographic indicators (with 6 sub-sections), community health status indicators (with 7 sub-sections), indicators of health care services (with 3 sub-sections) and samples of UK’s and Iran’s indicators in the relevant columns were compared. The purpose of this part was to help health practitioners and stakeholders to promote the knowledge of community health status.

Finally, it can be said that, although in Iran the government executes the affairs now, but it could be the responsibility of independent proposed boards to make a plan about, establishing equity and performing stability, reducing social and economic inequalities, reducing the income gap and equitable distribution of income in the country, reducing poverty, deprivation and empowering the poor, through targeted resource allocation and efficient social security payments and subsidies, comprehensive poverty alleviation planning and social equity, and carrying out all activities associated with economic development according to the health equity audit.

Also, to generate relevant evidence and take appropriate actions to tackle health inequities, local authorities need a variety of tools. In order to facilitate a comprehensive understanding of health systems performance, these tools should: 1. adopt a multi-sectoral approach, 2. link evidence to actions, 3. be simple and user-friendly, and 4. be operationally feasible and sustainable.10

Authors believe that future studies on the formation of health equity audit team with attendance of independent proposed boards (citing findings in Table 4) in Iran, conducting independent analytical research about health equity in Iran and ultimately, implementing the model presented on this study and analyzing its results to promote health equity in Iran are necessary.

Conflict of Interests
Authors have no conflict of interests.

Authors’ Contributions
SK and SHAHZM contributed equally to design, data collection and review, questionnaire preparation, review and comments by experts and writing the manuscript. Both authors read and approved the final manuscript.

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