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Human resources challenges in health system reforms: A systematic review



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ABSTRACT

Background: The health system reform (HSR) in many countries has been focused on the structural changes, cost reduction, market mechanisms, and consumer service. Despite the importance of human resource (HR) management, this issue has been insufficiently discussed or even completely neglected in HSR reforms. This study seeks to increase the awareness of decision-makers and policymakers towards the role of human resource in achieving the health system reforms goals through a systematic review. The studies included in this review are of human resource challenges in implementing health system reforms.

Materials and Methods: This study is a systematic review based on PRISMA. The time period for data collection is between 2000 and 2017. Various database and manual search were used to find the related articles. The obtained articles were then manually reviewed and thematically analyzed by two independent reviewers. Any conflicts were resolved by a third party.

Results: Based on the inclusion and exclusion criteria, 13 articles were relevant to the human resource challenges in implementing the health system reforms. Selected studies were analyzed in three general themes; the context and dynamics of the reform process, capacities needed to implement the reform, and the negative impact of reform on HR.

Conclusion: Achievement of the HSR goals is completely dependent on the provision of the adequately high quality, effective, and availability of human resources in appropriate positions. The lack of clear human resources policies which were in sync and consistent with the goals of health reforms is one of the main reasons for the failure of these reforms to achieve the intended goals. Therefore, determining human resource problems and development of the related HR policies should be the starting point to plan for any HSR.

Keywords: reforms, health system, human resources

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INTRODUCTION

Human resources are one of the most important components of the health systems. The performance of healthcare systems ultimately depends on the knowledge, skills, and motivation of those who are responsible for providing these services. Despite recognizing HR importance, the different countries act unclear and inefficient in human resource (HR) related policies and programs in health.

In fact, there is a great contradiction between the reality and the amount of attention which is being allocated to solve human resource problems.^{1,2} Reform of the health section generally seeks to increase the level of community access to appropriate high-quality services through changes in financial and organizational structures and therefore neglects human resources as a vital aspect. The results of this neglect are staff's incompetence in performing the reform related tasks, low motivation, or resistance to reforms.^{3,4} Of course, this is not a concern for all countries. The National Health Service (NHS) health reform can be introduced as one of the successful efforts to apply private section's human resource management theories

to meet the challenges of human resources in the public section.⁵

The relationship between human resources and health reform is very complex because of the density of the workforce in the health care section and the unique nature of jobs and services. Perhaps the difficulty and complexity of assessing the effects of HR interventions makes most of policymakers and decision-makers in the health section to willingly or unwillingly neglect human resource issue.⁶

Health system reform and human resource management have a synergistic relationship. Health reform affects some important aspects of human resources including the working conditions, the decentralization of human resources management, required qualifications and quantity of human resources, and the salary and payment systems.³ Successful reforms to increase the motivation of human resources focused on improving education and training, revising salary scales based on living standards, reducing shadow payments, evaluating performance, and introducing performance-based payments.^{3,7-9} Human resources can serve as a

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double-edged sword for the success or failure of health reforms. Lack of experience and general skills needed to manage human resources in the context of reforms; unbalanced distribution and the inappropriate combination of skills have been mentioned as the influential factors in the failures of the reform.⁶ Due to a lack of related studies, this study, through a systematic approach, seeks to determine whether human resources change is effective to produce successful results in the reforms and accordingly, provide a foundation for developing the future practical strategies.

RESEARCH METHOD

In this review, an advanced search was performed in online databases; ProQuest, Web of Science, Scopus, PubMed, and Cochrane, Persian databases; Iran-Doc, Magiran, and IranMedex; publications by the World Health Organization (WHO) and the World Bank; and relevant articles from citation. The keywords selected based on the research question and Mesh database were:

“Healthcare reform”, “Health Policy reform”, “health system reform”, “health reform”, “health section reform and employee*”, “Human resources, personnel, worker*”, “manpower, workforce, labor and challenge*”, “barrier*”, and “hinder

The inclusion criterion was study which comprehensively discussed human resources aspects of the health reforms. Therefore, articles focusing only on one aspect or function of human resources were

excluded. The selected time period for the study was between 2000 and 2017. Only articles published in Persian and English languages were selected. No limitation on the study design was applied (descriptive-analytical, experimental, interventional, qualitative, and mixed are accepted). However, articles in the form of letters to the editor, editorials, conference posters, and notes were excluded from the study.

PRISMA model was used to screen the articles.¹⁰ First, repetitive articles that were simultaneously indexed at several databases were excluded. Subsequently, title and abstract screening were performed by two reviewers, unrelated articles were excluded from the study. If the two principal investigators of the study had different opinions on exclusion or inclusion of an article, a third person opinion is used to resolve the dispute. After a screening of titles and abstracts, full texts were reviewed and articles whose full texts were not accessible, or were not consistent with the search topic and research questions were excluded from the research. The full-text of the selected papers was assessed in terms of quality by two reviewers independently. To assess the qualitative and observational studies, CASB¹¹ and STROBE checklist¹² were used respectively. The Endnote X5, Thomson Reuters, Philadelphia, PA 19130, USA was applied for the references management. The selected articles were manually analyzed by two members of the research team using content analysis. To do this, first the selected articles were read carefully focusing on the details, and their key concepts and themes were determined. After this step, identified concepts were meta-synthesized and classified based on the relationship between them, then the data about appropriate theme and label was selected for. Finally, the results were evaluated by two researchers to reach a mutual agreement.

RESULTS

In this study, database search provided 319 articles, after different stages of screening duplicates, titles and abstracts inconsistency, full-text review, and quality assessment, Thirteen articles were included in the study (figure and table 1). All of the selected studies were classified as qualitative or review studies according to its methodology. An Excel form (2007 office collection) was used to extract data from the selected articles.

Based on the content analysis of the articles, the extracted concepts were classified in 3 main themes and 34 sub-themes. The main themes include *challenges of the dynamic process of reforms design*, *challenges related to the capabilities needed to implement reforms*, *challenges related to the content*

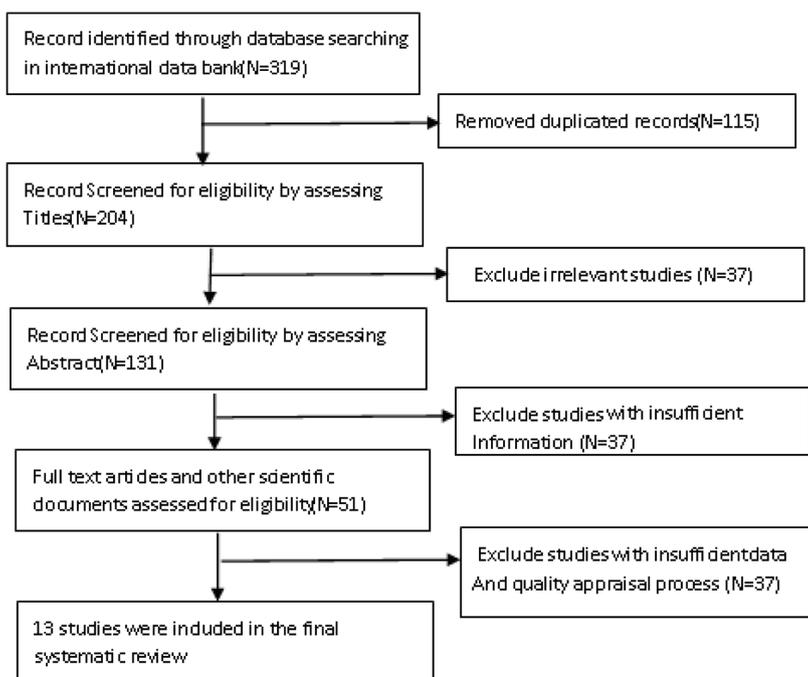


Figure 1 Diagram of Process and results of the screening articles using PRISMA model

Table 1 List of Selected articles

Row	Author Name	Release Year	Title of the article	The purpose of the article
1	Buchan (5)	2000	Health sector reform and human resources: lessons from the United Kingdom	Further Assessment of the UK National Health Care System Reform concerning the Human Resource and providing lessons for countries involved in reform and restructuring.
2	Martineau & Buchan(6)	2000	Human Resources and the success of health section reform	Investigating the critical role of human resources in health reform with a key question to help policymakers and planners to identify human resources related issues during the development and implementation of health section reform
3	Alwan (13)	2002	The implications of health section reform for human resource development	Assessing the status of the Eastern Mediterranean countries and identifying options and opportunities for moving towards the health for all through appropriate health section reform
4	Dussault(1)	2003	Human resources for health policies: a critical component in health policies	Suggestions to modernize health policy-making process for the development of human resources with the aim of moving from the traditional approach of personnel management to a more comprehensive human resources
5	Rigoli(3)	2003	The interface between health section reform and human resources in health	Introducing a plan to understand the relationships which connect the Health section reforms with human resources, focusing on health reform, its goals, how to implement it and its impact on human resources health, reactions of human resources to reform collectively and individually and mediating factors affecting the effects of reforms and responses of human resources
6	Bhat(14)	2004	Human resource issues and its implications for health section reforms	Checking the local health departments' commitment to health section reform in India
7	Lethbridge(31)	2004	Public section reform and demand for human resources for health (HRH)	Evaluation of health section reform and its impact on human resources in developing countries and countries under change and also assessing changing demand for human resources
8	Homedes(15)	2005	Human Resources: The Cinderella of the health section reform in Latin America	The Impact of healthcare reform under World Bank Leadership in Latin American Countries
9	Ssengooba(29)	2007	Health section reforms and human resources for health in Uganda and Bangladesh: Mechanism of effect	Reviewing the underlying framework of the reform goals in Uganda and Bangladesh and the human resources responses to changes in their working environments - Considering the macroeconomic environment (financing, legislative, organization, and Management analysis)
11	D Jibuti(16)	2008	Human resources for health public health system reform in Georgia	Evaluating the Sufficiency of human resources of the local public health agencies to meet the needs of healthcare reform in Georgia
11	Kalu(32)	2010	Nigeria's public health section reform and health workers' perceptions of, and responses to, organizational changes: a case study of Abiah State Federal Hospital	Understanding the policy process of reforms in the public health section in Nigeria with emphasis on identifying the reforms function from the perspective of front-line service providers and their responses to reforms
12	Bertone(33)	2014	A window of opportunity for reform in post-conflict settings? The case of Human Resources for Health policies in Sierra Leone, 2002-2012	Filling the gaps of the health needs with focus on policy development and reforms around the issue of health human resources in the decades after the civil war in Sierra Leone from 2002 until 2012: Focusing on evaluation of policy outcomes rather than factors and the reasons for policy options
13	Agartan(18)	2015	Health workforce policy and Turkish health care reform	Reviewing Human resource challenges in relation to new health reforms in Turkey as Health Promotion Program (HTP)

Table 2 Challenges of human resources in health system reforms**1. The lack of dynamics of the reform process from the point of view of human resources**

- 1.1. Failure to adopt a strategic long-term dynamic approach to identify and address the challenges and problems of human resources in the development reform program
- 1.2. Negligence of the effective role of human resource managers, policymakers, and stakeholders in reform planning
- 1.3. Failure to design proper change management program
- 1.4. Failure to coordinate intra-organizational groups responsible for the reforms

2. Lack of appropriate capacity for implementation of reforms**2.1 Unavailability of adequate structural capacities**

- 2.1.1 Lack of investment in the efficient human resources infrastructures needed to implement reform policies
- 2.1.2 The absence of appropriate legislation to meet the human resources' demands
- 2.1.3 The low capacity and quality of the national education institutions and the lack of appropriate training programs to train the force needed to implement the reform policies.
- 2.1.4 The inadequacy of the legal system to ensure the quality of academic training
- 2.1.5 Dominance of doctors and neglecting the other professional health groups as health service providers

2.2 Unavailability of adequate human resources in the health system

- 2.2.1 Weakness, inefficiency, and incompetence of health staff
- 2.2.2 Lack of trained personnel in primary care and general health
- 2.2.3 Low-quality in-service training
- 2.2.4 Limited accreditation of professional health
- 2.2.5 Neglecting the implementation of pre-service training
- 2.2.6 Inconsistent implementation of in-service training
- 2.2.7 The weakness of the professional development programs due to increased paperwork and managers' failure to allocate time to train the workforce

2.3 Lack of appropriate capacity in HRM units

- 2.3.1 Absence of sufficient number of human resource specialists and skilled official staff in the human resources units of Health Ministry and local and regional offices to implement reforms
- 2.3.2 Lack of competence and ability of human resources units staff to perform the duties from the reform program
- 2.3.3 Lack of other management experts required to implement and control reform programs, especially in the field of insurance and contract management systems

3. Challenges related to the content and policies of the reforms and negative Impacts of reform programs on HR

- 3.1. Reduced power of data and unavailability of correct information on the number and distribution of human resources at the national level due to decentralization policies
- 3.2. Reduced power of HRM as a result of policies such as decentralization
- 3.3. Reduced capacity of state managers to manage their staff and improve the negative working conditions for employees resulted from decentralization policies
- 3.4. Increasing human resource costs due to decentralization process
- 3.5. Dissatisfaction of being supervised by an unprofessional organizations due to the loss of clinical power and independence
- 3.6. Conflicts of interests and values in policy enforcement such as management unity policy in service delivery
- 3.7. Change of the working conditions and increased workload due to new policies
- 3.8. Reduced power of the unions and their ability to negotiate and bargain
- 3.9. Doctors fear losing independence due to control methods
- 3.10. Reduction in payment levels and dissatisfaction with payments
- 3.11. Withdrawal of forces from the public section due to the migration of talented forces to the private section and other countries
- 3.12. The tendency towards the second job due to the reduction of long-term employment and the prevalence of contractual employment
- 3.13. Loss and degradation of employee motivation due to lack of funds
- 3.14. Increased levels of anxiety, stress, and fatigue, resulting in employee dissatisfaction due to increased workload, change in the nature of work, the loss of control of work and the inability to manage new workload
- 3.15. Lack of teamwork and collaboration between employees and shared data because of changes in payment system
- 3.16. The prevalence of informal and illegal payments as a result of market-based mechanisms (lack of reduction / increasing corruption)
- 3.17. The prevalence of induced demand as a result of payment systems
- 3.18. Feeling that reform is being imposed
- 3.19. Lack of job security in flexible temporary contracts and the power of the local decision-makers
- 3.20. The ineffectiveness of increasing the number of doctors in improving the geographical distribution
- 3.21. Change of the employment and recruitment structures

and policies of the reforms and the negative effects of reform on human resources. In [table 2](#), the results of this analysis and classification have been presented in detail.

DISCUSSION

One of the main themes derived from the studies is the dynamics of the reform process which includes a range of adaptation of a passive short-term approach to identify and meet the challenges of human resources, lack of definition for the key role for human resource managers, lack of adequate and effective participation human resources stakeholder (staff representatives, trade and occupational unions and professional associations), lack of change in management program to control the effects of reform on human resources, lack of coordination between policies and tasks of the reforms presenters in different sectors and, presumed resistance against reforms.

Almost all the studies related to the reform planning have mentioned a reciprocating delayed motion in relation to human resources. In Sierra Leone, however, the human resources has been a major drive of the reforms, and human resource development program initially taken into consideration with formation of the specialized working groups, but these measures have lost their strength during the implementation process. In Nigeria, despite the prediction of human resource policies, these policies have not been implemented. In reforms of Georgia, Latin America, India, Bangladesh, Uganda, and India, the role of human resources has been ignored. In the reforms of Zambia and Russia, although human resource-related programs have been developed in the reform program, the actions taken are mostly passive and only used to solve the urgent problems. In successful examples of reforms such as Turkey's reform, the importance of strengthening human resources, after an initial assessment of reform plan has been considered. In the reforms in Latin America, sponsored by the World Bank's, a complete list of human resources challenges has been identified, but in practice, no attention has been allocated to resolve these challenges.¹³⁻¹⁶ Much of this situation is related to weak understanding and insight of policymakers of the position of human resources. In a study in Nigeria 2013, Policymakers gave the lowest score to human resources as the components of the health system.¹⁷

The human resource managers and stakeholder's participation and involvement in policy planning and human resource reforms have been proposed as another factor which reflects the dynamics of the reform process. In Turkey, human resources policy-makers has been involved in reform plan but

the role of doctors and other professional groups involvement in this field was only advisory and finally, the reform program was prescribed from high-level policy-makers to the lower levels.¹⁸ In Georgia, the countries of Latin America and the Nigerian, professional associations and labor unions have no involvement in the definition of reforms and reforms have been implemented from the top down on a mandatory basis.^{15,16} The lack of attention to the involvement and participation of human resources stakeholders in the design of the reform plan is one of the main reasons behind the default resistance to it. So most of the selected articles mentioned lack an effective participation of professional associations and unions in the formulation of reform draft. This is considered as the main reasons behind many reforms failures. The absence of key beneficiaries in the process of policy reform often causes serious disagreements on the items of the policy throughout the reform. Hence, even the relative success of the reforms will not be considered as positive.^{15,19}

A change management program for monitoring and controlling the effects of the reform is another factor has been mentioned in the related studies. But none of the reforms examined have proposed such a program. Such plan can predict administrative challenges, consolidate different stakeholder reactions, provide plan on how to change behaviors and skills of the administrators, and design an appropriate communication channels to help the achievement of reform goals. Adoption of the appropriate policies for managing changes has not been an option but is a requirement.⁴

As another result, the challenges related to reforms implementation capacity have been classified in three topics. Structural capacity to implement reforms includes the policy-making capacity, financial resources, and capacity of the laws and regulations. The health reforms need to consider their effects on wages and working conditions of employees. Monitoring of the rights of employees during the reform period, although difficult, is necessary to win the support of labor unions and professional. For example, changes in the payment system without additional resources cannot lead to a voluntary change and will only decreases the salaries and raise the resistance.⁵

The technical capacity and competencies of health personnel and the adequacy of existing human resources are the most important challenge in the implementation of the health reforms. Lack of qualified and capable staff to implement necessary changes in human resources is a topic that has been referred to in most of the reviewed articles. Most reforms not only neglect to anticipate and supply the required human resources but also pay

no attention, even after starting the reforms, to the implementation of in-service training or the development and empowerment of employees.^{19,20} Bodart and colleagues also demonstrated in their study about the implications of health system reform in Burkina Faso that the lack of the balance in the motivated human resource can raise resistance to the reforms.²¹ Of course, according to a study by the International Labor Organization (ILO), in many of the health reforms such those in Chile and Latvia, workforces have not been increased in the process of reform and even reduced as a part of reform. On the contrary, in countries such as Mexico and Zambia, shortage of the human resource was addressed and employment increased.²²

Several studies have emphasized that the success of health reform is closely related to changes in the number, proficiency, distribution, training, and management of work-condition.²³⁻²⁶

Another challenge faced by the health reforms are insufficient administrative capacity for the implementation of reform plans. The enforcers of the reforms are generally not familiar with tasks such as the development of appropriate organizational structures, definition of new occupational opportunities, re-evaluation responsibilities, designing new reporting systems, assessing the decentralized units, and provision of the required trainings consistent with the reforms. Martineau showed that in Zambia's health reform, despite the change in the employment condition and decentralization of services, the local units was unfamiliar with the principles of strategic programming and managing new working relation due to decentralization. In England reforms, in spite of the sufficient dominance at the national level, management capacity was very low at the local level and inability to manage behaviors has led to NHS Trusts opposition to the achievement of the reform objectives.^{6,27} Even in the relatively successful reform of Turkey also has been reported the weak management of human resources and lack of the expert staff at the national and local level.⁵ Incompetent management and lack of time, knowledge, and attitudes of managers concerning the accurate budget control have been reported to be among the main obstacles to the success of decentralization in the governmental hospitals in Hong Kong.²⁸

The third extracted theme from the literature was the criticism on health reforms because of its negative consequences on the human resources. These major criticisms originate from the lack of comprehensive review of the effects of reform programs such as decentralization, modification of payment methods at the design, and policy stages. Implementing decentralization policies in countries without the necessary infrastructure resulted

in increase of the human resources' costs, lack of access to national data on the number and distribution of human resources, and formation of multiple non-coordinated management systems.^{1,5,29}

Another major criticism of the reforms is the increased workload resulting from the implementation of new programs and disregarding staff capacity which results in increased stress and occupational burnout in employees. Turkish Medical Association openly opposes the Turkish government's reforms due to its high workload, young employees, and inability of the Ministry of Health to prevent violence of the patients and create a safe work environment.¹⁸ Researches of Afford and ILO confirmed the increased workload due to shortage of staff and human resources reduction policies in the process of the implementation of health reform.^{19,22}

Implementing payment reform by controlling or reducing the level of payments has resulted in the prevalence of informal payments, dissatisfaction with payments, decreasing staff motivation, tendency to find second job or other sources of income, and the migration of the public sector. Negligence of nonmonetary incentives and working conditions are some of the main factors which bring dissatisfaction of the employees with the reform. The results of the study by Mogedal are consistent with these results. His study shows that, despite investment in the development of staff, due to low salaries, and lack of opportunities for promotion and decent working conditions, Tanzania Reforms has raised the employees' dissatisfaction.³⁰

This study was conducted with a deep examination of human resource issues to help fill these gaps in future reform plans. But this effort had some limitations. The most important limitation was focus on qualitative studies, the relationship between human resources and reforms were reviewed from only one dimension, for example, the field of training or recruitment, which was inconsistent with the inclusion criteria of this study requiring the comprehensive review of human resources. Another limitation of this study was the inclusion of only Persian and English articles due the unfamiliarity of the researchers with the other languages. Also, due to the limited number of studies in selected interval, perhaps it was better that the time limit was not applied to articles.

CONCLUSION

The systematic review of human resource-related studies and health system reform suggests that, despite the recognition of the importance of human resources, in the process of reform policy-making and implementation phases, human resources

had been forgotten. To explain the role of health resources human in each country's health reform, its specific conditions, as well as its relevant capacities and facilities should be considered. Then, a solution should be provided to fulfill each of the health system reform requirements concerning the human resources. How to involve human resources stakeholders in the reform process, how to define their roles, how to provide the required human resource, how to handle resistance and reactions of employees to the reforms, and many other questions, are the ambiguities which should be addressed and resolved before any health reform. Otherwise, the success of the reforms will be coincidental.

ETHICAL ISSUES

Ethical issues have been considered by the authors.

COMPETING INTERESTS STATEMENT

Authors have no conflicting interests whatsoever.

RESOURCES

- Dussault G, Dubois C-A. Human resources for health policies: a critical component in health policies. *Hum Resour Health*. 2003;1(1):1.
- World Health Organization. Everybody's business-strengthening health systems to improve health outcomes: WHO's framework for action. 2007.
- Rigoli F, Dussault G. The interface between health sector reform and human resources in health. *Hum Resour Health*. 2003;1(1):9.
- Dussault G. Human resources development: the challenge of health sector reform: World Bank; 1999 Aug.
- Buchan J. Health sector reform and human resources: lessons from the United Kingdom. *Health Policy Plan*. 2000;15(3):319-25.
- Martineau T, Buchan J. Human resources and the success of health sector reform. *Human Resource Development Journal*. 2000;4(3):174-83.
- Franco LM, Bennett S, Kanfer R. Health sector reform and public sector health worker motivation: a conceptual framework. *Social science & medicine*. 2002;54(8):1255-66.
- Healy J, McKee M. Health sector reform in Central and Eastern Europe: the professional dimension. *Health Policy Plan*. 1997;12(4):286-95.
- De Savigny D, Adam T. Systems thinking for health systems strengthening: World Health Organization; 2009.
- Moher D, Liberati A, Tetzlaff J, Altman DG, Group P. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Med*. 2009;6(7):e1000097.
- Singh J. Critical appraisal skills programme. *J Pharmacol Pharmacother*. 2013;4(1):76.
- Von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The Strengthening of Reporting of Observational Studies in Epidemiology [STROBE] statement: guidelines for reporting observational studies. *Gac Sanit*. 2008;22(2):144-50.
- Alwan A, Hornby P. The implications of health sector reform for human resources development. *Bull World Health Organ*. 2002;80(1):56-60.
- Bhat R, Maheshwari SK. Human resource issues: implications for health sector reforms. *J Health Manag*. 2005;7(1):1-39.
- Homedes N, Ugalde A. Human resources: the Cinderella of health sector reform in Latin America. *Hum Resour Health*. 2005;3(1):1.
- Djibuti M, Gotsadze G, Mataradze G, Menabde G. Human resources for health challenges of public health system reform in Georgia. *Hum Resour Health*. 2008;6(1):8.
- Uneke CJ, Ezeoha AE, Ndukwe C, Oyibo P, Onwe F. Promotion of Health Sector Reforms for Health Systems Strengthening in Nigeria: Perceptions of Policy Makers versus the General Public on the Nigeria Health Systems Performance. *Soc Work Public Health*. 2013;28(6):541-53.
- Agartan TI. Health workforce policy and Turkey's health care reform. *Health Policy*. 2015;119(12):1621-6.
- Afford C. Corrosive Reform: Failing Health Workers in Eastern Europe. A joint publication by the International Labour Office, Socio-Economic Security Programme, Geneva and Public Services International, Ferney-Voltaire. 2003.
- Weiner JP. Forecasting the effects of health reform on US physician workforce requirement: evidence from HMO staffing patterns. *Jama*. 1994;272(3):222-30.
- Bodart C, Servais G, Mohamed YL, Schmidt-Ehry B. The influence of health sector reform and external assistance in Burkina Faso. *Health Policy Plan*. 2001;16(1):74-86.
- Programme ILOSA. Terms of Employment and Working Conditions in Health Sector Reforms: Report for Discussion at the Joint Meeting on Terms of Employment and Working Conditions in Health Sector Reforms: International Labour Organization; 1998.
- Saltman RB, Figueras J, World Health Organization. European health care reform: analysis of current strategies. 1997.
- Martineau T, Martínez J. Human resources in the health sector: guidelines for appraisal and strategic development. European Commission. 1997.
- Martínez J, Martineau T. Rethinking human resources: an agenda for the millennium. *Health Policy Plan*. 1998;13(4):345-58.
- Schmidt-Ehry G. Training and research for implementation of health care system reform in Cambodia. *Asia Pac J Public Health*. 2000;12:S21-S7.
- Dovlo D. Health sector reform and deployment, training and motivation of human resources towards equity in health care: issues and concerns in Ghana. *Human Resources for Health Development Journal*. 1998;2(1):34-47.
- Thompson D, Snape E, Stokes C. Health services reform and human resource management in Hong Kong public hospitals. *Int J Health Plann Manage*. 1999;14(1):19-39.
- Ssengooba F, Rahman SA, Hongoro C, Rutebemberwa E, Mustafa A, Kielmann T, et al. Health sector reforms and human resources for health in Uganda and Bangladesh: mechanisms of effect. *Hum Resour Health*. 2007;5(1):3.
- Møgedal S, Steen SH, Mpelumbe G. Health sector reform and organizational issues at the local level: lessons from selected African countries. *J Int Dev*. 1995;7(3):349-67.
- Lethbridge J. Public sector reform and demand for human resources for health (HRH). *Hum Resour Health*. 2004;2(1):15.
- Kalu K. Nigeria's public health sector reform and health workers' perceptions of and responses to organisational change: A case study of Abia State Federal Hospital: University of East Anglia; 2010.
- Bertone MP, Samai M, Edem-Hotah J, Witter S. A window of opportunity for reform in post-conflict settings? The case of Human Resources for Health policies in Sierra Leone, 2002–2012. *Confl Health*. 2014;8(1):11.



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