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Towards integration of health economics into medical education and clinical practice in Saudi Arabia

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Abstract

In an era of expanding health sectors and rising costs, doctors are expected to have a working knowledge of health economics to better use resources and improve outcomes and quality of health care. This article recognizes the dearth of knowledge and application of economic analyses in medical education and clinical practice in Saudi Arabia. In particular, it highlights the desirability of knowledge of health economics in ensuring certain competencies in medical education and the rationale for inviting doctors to apply knowledge of economics in Saudi Arabia. In addition, the article discusses challenges that hinder integrating health economics into clinical practice. Furthermore, the article typifies some of the important economic phenomena that physicians need to discern. Besides, the article provides implications for incorporating economic analysis into medical education and clinical practice in Saudi Arabia. Finally, the article concludes by demonstrating how health economics can enhance doctors' knowledge and recommends the country to move towards integrating health economics into medical education and clinical practice for best practice.

Introduction

Saudi Arabia has unique challenges to address - rapid economic growth and developing of medical education curricula in the kingdom pose challenges to sustain efficiency and development in primary health care (Telmesani et al. 2011). Additionally, social science disciplines, such as economics are deprioritized while more emphasis is given to clinical medicine and other related natural sciences. This arrangement poses a complex challenge in the incorporation of health economics into clinical practice for the near future.

There is a dire need to integrate health economics knowledge into clinical practice. A move to integrate economic knowledge in medical professions, Saudi Arabia should equip physicians with tools and skills that help develop attitudes and values required to evaluate new medical/health interventions and challenges. These skills should be applied during clinical practice and sharpened through continued medical education (CME). For this to happen, doctors in Saudi Arabia need to redefine roles by acknowledging health economics as an "elephant" in the room – an awkward yet unavoidable topic requiring focused attention. The goal of this article is to highlight the importance and implications of health economics knowledge in Saudi Arabia. The section "Key intersections of medical and economic analysis" provides an overview of the current intersections of medical training in Saudi Arabia. The section "Integrating economic analyses into medical education and clinical practice" highlights the importance and the need to integrate knowledge of economics into medical education and clinical practice. The section "Benefits and challenges to health economics integration" examines challenges that stand in the way of the integrating economic analyses into clinical practice guidelines. The section "Understanding some basic economic issues" explores some economic phenomena that physicians need to know. The section "Implication of health economics for Saudi Arabia" provides implications for incorporating economic analysis into

Practice points

- Article highlights the absence of health economics and provides an overview of the current intersections of medical training in Saudi Arabia.
- Article highlights the importance and the need to integrate knowledge of economics into medical education and clinical practice.
- Article examines challenges that stand in the way of the integrating economic analyses into clinical practice guidelines.
- Article explores some economic phenomena that physicians need to know.
- Article provides implications for incorporating economic analysis into medical education and clinical practice in Saudi Arabia.

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medical education and clinical practice in Saudi Arabia, and the last section concludes.

Key intersections of medical and economic analysis

As physicians need to be conscious of the micro and macro-economic consequences of their professional decisions they face a dearth of health economics knowledge in medical education and clinical practice, and the importance and implications of integrated health economics curriculum and policies for medical institutions in Saudi Arabia. This critical analytical requirement is an added expectation to the many tasks doctors already perform, including clinical practice, teaching and training, administration and management. There are several aspects to why a health economics requirement is important, least of which is that clinicians have a secondary role in the therapeutic decision-making process (Hampton 1983). In addition, a working knowledge of health economics is also considered as the start of clinical freedom to the evolution of clinical practice towards a tailored therapy (Sacristán et al. 2010).

Although there are subtle differences, the terms clinician, doctor, and physician will be used interchangeably throughout the article. There is recognition of the need to improve physicians' limited knowledge of economic analyses in an era of rising health care costs and the important role of health economic analyses has come to assume (Dresnick et al. 1979; Fowkes 1985; Reichert et al. 2000; Ademi et al. 2013).

Currently, nearly 60 to 80% of health care is provided "free" by the public and quasi-public sectors. Consequently, it is tempting to argue that rising prices, costs, other health economics issues are not of concern to Saudi Arabian population. However, a cursory look at the implications of these issues for the sector and economy, in general, immediately turns such thinking on its head. The continuous absence of health economic issues from medical education and clinical practice in the country certainly have sectoral implications for the level and kind of resource inputs (equipment and personnel) health care facilities need and resultant provision of health care services.

Integrating economic analyses into medical education and clinical practice

The complexity of integrating health economics knowledge raises the following questions:

(i) How important is integrating health economics into medical education and clinical practice?
(ii) What are the opportunities and challenges that stand in the way of integrating knowledge of economics into clinical practice?
(iii) What are some of the important economic phenomena that doctors need to be educated about?
(iv) What are the implications of integrating health economics into medical education and clinical practice for Saudi Arabia?

While doctors in advanced countries acknowledge importance of the requirement of economic analyses alongside clinical practice guidelines, physicians in Saudi Arabia lag behind, especially in making value-based economic decisions. Doctors in Western countries, for instance, are already starting to redefine their roles, from being concerned exclusively about individual patients to exerting evidence-based influence on how health care resources are spent (Pollak 2014). There is a dire need to embed economic analyses in the goals of clinical practice guidelines in Saudi Arabia. In an era of health sector expansion, this does not bode well for future clinical practice in the country. Very little research, if any, has been developed in medical literature about health economics in Saudi Arabia.

Benefits and challenges to health economics integration

Education frameworks for emerging medical practitioners, as well as professional development for doctors, require short- and long-term strategies to succeed. Studies show that medical education programs are realizing the need for training in health economics and cost-conscious care (Tartaglia & Kman 2013). Research also indicates that the cost of medical care delivered in the context of medical education is 20 to 60% higher than care provided in non-teaching environments (Sloan et al. 1983; Frick et al. 1985). Further studies point out that residents and medical students do not receive instruction on cost awareness and that physicians lack knowledge about the costs of medical care (Dresnick et al. 1979; Fowkes 1985; Reichert et al. 2000). These studies essentially postulate the need for integrated economic analyses, and they are consistent with research, which underscores the importance of integrating economic analyses into medical education and clinical practice (Evans 1989; Backhouse et al. 1992; Elixhauser et al. 1993; Russell et al. 1996; Pollak 2014).

Currently, neither medical education nor clinical practice integrates or requires working knowledge of health economics in Saudi Arabia. To close this gap, there is a pressing need to synchronize health economics with medical education and clinical practice in Saudi Arabia. An integrated curriculum would help medical students learn new skills in economic analysis, while enhancing competencies and learning outcomes before they begin clinical practice. Core competencies include knowledge of key economic concepts, analytical techniques, and tools in health care planning and management. This integrated knowledge will improve long-term goals of Saudized medical professions as well as building a consciousness of the economic impacts of health care regionally and internationally.

Benefit and cost analysis can be conducted when introducing and integrating economic analysis so that foundational knowledge a medical student gains supports clinical and institutional goals of care and efficiency (Evans 1989). However, this is not to say that teaching economic analysis ought to be less rigorous. On the contrary, it has been shown that medical schools with the most intensive health economics curricula perform marginally better and those students with

health economists as instructors score higher than those taught by non-health economists (Gray & Lorgelly 2010).

There is a dire need to integrate health economics knowledge in clinical practice. A move to integrate economic knowledge in Saudi Arabia should equip physicians with tools and skills that help develop attitudes and values in order to evaluate new medical/health interventions and challenges. These skills should be applied during clinical practice, embedded, and sharpened through continued medical education (CME). For this to happen, doctors in Saudi Arabia need to redefine roles by acknowledging health economics as an "elephant" in the room.

Integrating economics into medical education, for instance, encourages an appreciation of why economic factors influence clinical decision-making by ensuring the practice of efficient medicine for the benefit of the society (Evans 1989). Additionally, economic analyses has been shown to inform clinical practice decisions in major institutions like hospitals, in determining policies in the health care system (Backhouse et al. 1992; Elixhauser et al. 1993; Russell et al. 1996).

Incorporating economic analyses into clinical practice will create win-win situations in the country: not only in improving outcomes and in quality of health care, but also furthermore to manage resources more effectively. Health economics is useful to clinical practice as it offers knowledge on how and why patients and doctors consume, produce, and distribute decisions of medical services. Additionally, integrating health economics enables doctors to assess the economic value of medical programs, or alternative interventions - supporting problem solving and contributing to health policy analyses. In this respect, doctors, for example, assess whether tests and procedures are cost-saving, or cost-effective, an aspect that is essential for them to make informed decision (Phillips et al. 2014). In this context, health economics knowledge assists a doctor during treatments to weigh benefits and costs and choose alternative procedures or interventions with the largest net benefit, or value to society.

It is evident from the preceding discussions that common goals in both health economics and clinical practice create desirable outcomes for both proponents of clinical practice and economic analyses. However, challenges that impede the appreciation and potential integration of economic analyses into clinical practice guidelines invariably remain. Ramsey (2002), for instance, demonstrated that clinical practice guidelines and economic analyses do not always appreciate each other by mutually working towards best practice. Incongruence of clinical practice and economic analyses arises from sheer incompatibility in terms of what constitutes best practice (Musgrove 2001) and the nature of clinical practice guidelines itself being a roadblock (Ramsey 2002).

It is instructive to note that such incompatibilities often more pronounced in countries that lack national structure or programs to teach health economics. Saudi Arabia is presently a clear example of these countries given that neither medical education nor clinical practice equip doctors with or require them to have basic economic skills. Consequently, it is not uncommon for clinicians to serve patients without economic considerations.

Understanding some basic economic issues

In order to be aware of economic consequences of clinical decisions and address the challenges of the health care sector, physicians in Saudi Arabia need to gain some knowledge of economic analysis. What are some of these skills and concepts? Although by no means exhaustive, the next section highlights some basic micro and macroeconomic phenomena crucial for understanding economic analyses.

Micro and macroeconomic issues

Micro and macro environments around which health care sectors operate are essential for doctors' understanding. Health economics enables doctors to identify the link between what goes on in health facilities and how the health care systems function on a global scale. At the microeconomic level, doctors in Saudi Arabia need to appreciate how the economy utilizes scarce health care resources to provide and distribute medical care and how this impinges upon the determination and allocation of health care resources. Doctors also need to discern how and why society must make important decisions regarding consumption, production, and distribution of medical services. While producing medical services, doctors need to recognize what resources their facilities need in terms of equipment, staff and whether production of medical services has trade-offs with the consumption, production, and distribution of non-medical services.

Economic knowledge is also important for doctors to realize the macroeconomic environment within which the health sector operates. Deep interest in macroeconomics of health has long been recognized (WHO 2000). While doctors in Saudi Arabia may require in-depth knowledge all about macroeconomic concepts and theories, they do need to gain some familiarity with factors that affect the health care sector. Doctors, for instance, need to know various macroeconomic factors that explain the escalation of costs of medical care, such as rising health expenditure relative to gross domestic product (GDP) and rising health care prices relative to consumer price index. Given that the health sector operates within the larger economy, it is only fair that doctors in Saudi Arabia acquire some basic economic indicators that affect their working environment.

Influences of rising costs on clinical decision-making at all levels of health care have been documented (Kernick 2003; Goeree & Diaby 2013). Recognizing rapidly rising cost of medical care is key to convergence of clinical guidelines and economic analyses, especially in encouraging health care providers to adopt a "best practice" (Ramsey 2002). However, due to the lack of drive to capture optimal utilization of resources, consideration of costs for a given level of outcome is generally absent in Saudi Arabia. Consequently, physicians are either not conscious or simply not able to evaluate whether to use the most expensive test, or what treatments to provide.

Physicians in the country ought to be conscious about cost implications in order to address the aforementioned concerns. The acceptance of health care cost by physicians does not have to be only for its own sake. Rather, it should be

appreciated for its uses and implications. First, doctors in Saudi Arabia need to recognize the various uses and interpretations of direct cost, such as the price paid to acquire medical services. Rising prices and costs of health care have been shown to compel doctors to weigh not just the effectiveness of treatments, but also costs when they make decisions about patient care (Pollak 2014). For example, new guidelines and evidence-based medicine take into account rising health care costs to compare costs of several drugs or treatments (Pollak 2014), carry out cost effectiveness of drugs and other therapeutic choices (Gold et al. 1996), or compare alternative strategies with respect to their resource use and their expected outcomes (Eisenberg 1989; Detsky & Naglie 1990). Additionally, doctors need to discern indirect costs, including opportunity cost in terms of benefits foregone by choosing one medical intervention over another intervention.

As pointed by Gold et al. (1996), physicians need to integrate costs into medical treatment guidelines and evidence-based decision-making. For instance, economic analysis can help identify the trade-offs a clinician must make between patient's health, the antibiotic treatment to prescribe, and the impact of treatment on the rate of resistance (Scott et al. 2001). Cost consideration by doctors has further been shown to reduce practice variation, ineffectiveness, and wasteful care while improving outcomes and encouraging the use of proven therapies (Scott et al. 2001).

Implication of health economics for Saudi Arabia

In light of the appreciation of health care costs, physicians in Saudi Arabia need to know whether the cost associated with interventions and adoption of new expensive technologies outweigh benefits in order to make informed clinical practice decisions. Doctors in Saudi Arabia can appreciate economic analyses in numerous possible ways. Doctors can use their enhanced economic analysis to estimate the possible impact of vaccine-based interventions of current clinical issues, or even emerging diseases, such as Middle East Respiratory Syndrome (MERs). In addition, physicians in Saudi Arabia need to know the major factors influencing the cost of the health care system, such as costs of inputs, average length of stay, case mix, the state of the economy, technological developments, productivity of staff, volume of services, capacity and efficiency assumptions among other factors. Moreover, physicians in the country need to embrace basic requirements of accounting and control in terms of composition, that is, which factors are included in costing an activity, procedure, product, or service. Finally, physicians need to know how to estimate, report, assign, and control costs for purposes of planning and decision-making.

A recent report indicated that rising costs of providing quality health care, rising population growth and incidence of chronic diseases is beginning to place a strain on Saudi Arabia's finances (Royal Philips 2014). Issues of health economics also have implications on physicians' practice given the increasingly heavy burden that strong population growth and shifting diseases have on the health care system. These issues are also likely to have implications for finances and resources, especially the need to balance public and private health care in future. Finally, economic analysis will have implications for health policies and the expansion of health care capacity and quality improvement, issues that are central to the macroeconomics of the expanding health care sector in Saudi Arabia. It is imperative for the country at this point going forward, to put in place mechanisms to close meet these emerging needs.Saudi Arabia has to address unique challenges. Rapid growth and change of medical education in Saudi Arabia will pose a complex challenge (Telmesani et al. 2011). Additionally, social science disciplines, such as economics are de-emphasized while more support is given to medicine and other related natural sciences. This preference is likely to challenge the incorporation of health economics into clinical practice for the near future.

Conclusions

While challenges remain, it is safe to argue that health economics can enhance doctors' knowledge for the benefit of clinical practice. Taken together, the relationship between health economics and clinical practice is mutually beneficial. Therefore, it is imperative that Saudi Arabia integrate economic analyses into medical education and clinical guidelines by putting in national structure or programs to teach health economics in the short and medium-terms for long-term best practice approaches.

Glossary

Economics is the science, which studies human behavior as a relationship between given ends and scarce means which have alternative uses.

Economic evaluations - is the identification, measurement, and valuation, and then comparison of the costs (inputs) and benefits (outcomes) of two or more alternative treatments, activities, or interventions.

Macroeconomics is the study of performance of national economies and the policies that governments use to try to improve that performance.

Microeconomics is the study of individual choice under scarcity and its implications for the behavior of prices and quantities in individual markets.

Notes on contributors

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