THE CHALLENGES OF HEALTH REFORM AND SIMULATED HEALTH MANAGEMENT EDUCATION

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Abstract

Many nations throughout the world have recognised the need to introduce healthcare reform policies to encourage innovation and contain, or reduce, healthcare expenditures. Countries have renewed their interest in how healthcare systems perform. While the reform agenda of each country is different, there is a common thread of managing healthcare systems to achieve effectiveness, efficiency, and, in many instances, some form of equity of access to services. This paper reviews the background of the various healthcare system reforms currently being undertaken from a healthcare management perspective. It seeks to identify the various categories of management skills that are required to support the desired reform. The rapid change in the healthcare environment requires a broader approach to the education of healthcare managers. Using simulation as part of the education and training provides a safe environment to apply formal learning and thereby increasing the depth of knowledge. This paper focuses on identifying the skills required to support health reform and how simulated health management could support the education and training of healthcare managers.

Keywords: Health system reform, Health services management, Simulated health management education, Web based simulated education.

1 THE CONTEXT OF HEALTH MANAGEMENT EDUCATION

1.1 The Management of Health Systems

The development of effective management, within the world’s health systems, is essential to ensuring available services to health consumers. Within its definition of management in health, the World Health Organization (WHO) has identified essential attributes of health managers, including providing direction to, and gaining commitment from, partners and staff; facilitating change; and achieving better health services through efficient, creative and responsible deployment of people and other resources [1].

To ensure effective management capacity (and capability) to strengthen health systems, WHO has proposed a conceptual framework [1] that has identified four inter-related facilitation areas, including the development of appropriate management competencies (Fig. 1).

WHO provides further details to ensure health managers have appropriate competencies, including identifying appropriate qualifications and experience, ensuring access to enhance competencies through formal education and training, and identifying those competencies that have been targeted for development [1].

To provide for the management educational requirements of the world’s health systems, there has been the development of formal health management programs delivered through tertiary educational institutions1. Examples of courses offered by these programs include leadership, health economics, finance, project management, change management, health informatics, health policy, and health strategic planning; within a model that reflects the specific health system delivery framework within its service jurisdiction [4]. As the business of health delivery is complex, and involves craft-groups tasked with delivering health programs, or providing a supporting role for those programs. Students in health management courses frequently reflect varied professional backgrounds; both healthcare provider and non-healthcare provider roles being are represented. The aim is to provide the health management student with a holistic understanding of the business of health services delivery, which may be utilised

1 For example, in Australia, Health Management programs and courses are offered at eleven universities, the majority at the post-graduate level [2]. In the United States, programs are offered at over seventy universities and institutions [3].
within a specific program or professional group, or be applied within programs in a health facility, or across a regional health service.

**Fig. 1: The WHO Framework for Successful Management in Health**

*Source: Adapted from World Health Organization, 2007, in Pfeffermann, 2012.*

In terms of the growth, and recognition, of health services management, West et al. [5] state:

The consensus among governments, planners, donors, and all other global promoters of health services, (is) that the key to improving health status is not more money: It is to improve the performance of health services, and the key to that improvement is competent management and strong leadership.

### 1.2 Health System Reforms and Health Management Competencies

Globally, health systems are facing the continued challenge of delivering health programs to its consumers, while subject to the pressures of increasing demand and limited resources, both fiscal and human. The current landscape of health services delivery encompasses the issues that have influenced effectiveness and efficiency of the health system for many decades. Addressing the needs of an ageing population, managing the rise of chronic health conditions, implementing effective primary care models, ensuring access and equity, and managing the ever increasing costs associated with the growth and growing complexity of the world’s health systems, tax the capacity, and ingenuity, of its leaders and managers [6].

The negative effects of the Global Financial Crisis (GFC) of 2007-2008, on many nations’ economies, lead many to adopt austerity policies that reduced public services spending, including health services [7]. To address the need to do more with less, many countries began to examine the current structures and models of service delivery within their individual health systems, and began to implement a series of core changes, or reforms, to address service inefficiencies, increase program effectiveness, and improve consumer equity and access, all within the constraints of reduced budgets and increasing demand. A common thread within many of the health reform initiatives was to examine the competencies of the leaders and managers tasked with implementing the many (and complex) health systems reforms. The recognition of the end goal of accessible, cost-effective, and high-quality, healthcare drove the requirement for health system leaders and managers to have a standard of professionalism, education and training that would improve the management of healthcare delivery.

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2 In 2009, mean Gross Domestic Product (GDP) fell 4.3% in the European Union (EU). This coupled with a following rise in unemployment in 2010, reduced tax revenues substantially [7].
and performance [5]. To enable this requirement, many countries (and most Organization for Economic Co-operation and Development\(^3\) countries) had existing provision for health leadership and management training in established universities, delivered through schools of public health, health management/administration, or business [9].

Specific to Australia, the identification for reforms in the health system focused on duplication of services, program overlap, cost control, increasing chronic health issues, and effective utilisation of the health workforce [10]. For example, within the public health system in Australian state of New South Wales, to enable success for the various health system reforms undertaken, it was identified that senior health management required competencies to effectively manage and lead reform initiatives, for strengthening health management training, for facilitating research into health services management, and to ensure on-going professional development. These requirements were incorporated within the strategies to enable positive reform outcomes. Other countries (Canada and the United Kingdom) had also identified the need for its health system leaders and managers to develop the same competencies to enable positive outcomes for its health reforms [11].

### 1.3 Core Competencies and Educating the Health Manager

In terms of intrinsic managerial competencies, many healthcare managers have not received formal management training. Often, the proficiency of their individual craft skills, knowledge, and applied expertise, has allowed them to obtain managerial positions within healthcare organisations. This proficiency, however, does not equate to proficiency in management. In addition, needed managerial skills, such as leadership development, team building and relationship management, may be, organisationally, deemed not as important as clinical or administrative productivity [12]. Reflective of various reports on the subject of poor management leading to sub-standard health services delivery, the need for improvement of health manager’s training, education and on-going development has been identified [13].

Specific core competencies, to enable effective management within health services delivery, are discussed in literature that reflects the many facets of healthcare programs and services. While the subject matter, within these scholarly articles, can be quite varied, there are common themes that point to the competencies that lead to developing effective managers. These include: leadership, planning, policy development, economics, change management, health informatics/knowledge management, workforce management, and financial management [5, 6, 9, 10, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23]. Health management educational programs, at the post-graduate level, offer targeted courses that reflect these competency themes, delivered in the classroom setting or through on-line modalities that present current health management theory with practical application through analysis of case studies, enabled within a collaborative environment, and facilitated by on-going research [4]. By matching the program curriculum to industry identified competencies, the desired outcome is to instil the student with the holistic knowledge, and analytical abilities, to lead and manage health services programs at operational, tactical and strategic levels.

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\(^3\) The Organization for Economic Co-operation and Development (OECD) is an international economic organisation of 34 countries, whose mission is to promote policies that will improve the economic and social well-being of people around the world [8].
2 THE CASE FOR SIMULATED AND VIRTUALISED ENVIRONMENTS FOR DELIVERY OF HEALTH MANAGEMENT EDUCATION

2.1 Current Simulated Education in Healthcare

Simulated and virtualised learning environments have been utilised in the healthcare industry for many years. Current research has validated that the various simulated techniques that are part of the healthcare learning environment provide for an enhanced learning experience, when compared to traditional text-based methods delivered with collaborative education platforms in the classroom or online setting [24]. The advantages of these learning environments are that they can replicate physical surroundings, organisational structures, and stakeholder engagement, at a fraction of the cost when compared to real-world environments [25]. Another key advantage is accessibility in both an in-class setting, and on-line, with a homogenised delivery of the course curriculum, irrespective of the student’s locale or other unique dependencies.

The majority of simulated, and virtualised, educational systems, utilised in healthcare, focus on healthcare-provider development within a clinical setting. Theories, methodologies, facts, practices, and protocols are presented to the student within the context of the student’s craft-group, and the scenario/environment where the student will apply learnings. Specific competencies are assessed through the simulation, with the intent of developing, and improving, the students’ problem-solving and diagnostic capabilities [27]. Another advantage of simulated systems focusses on patient-safety, as the human-patient factor is removed and replaced with a virtual one, within a realistic scenario, thereby mitigating a potentially negative outcome. As the student gains confidence and exhibits proficiencies through utilisation of the simulated system, transition to the real-world is enabled by continuing use of the simulation within a clinical placement [28]. Simulation systems also provide for team-based training, where the specific training scenario requires the collaboration of individual students, potentially from disparate professions. In this case, the advantage of simulation systems mitigates the need for, potentially, elaborate preparation (coordination of travel, venue, and other logistical requirements), standardises the experience for all students (regardless of the organisational or institutional culture that the student is from), and standardises the training outcomes and assessments for the group [29].

In terms of classifying the different types of simulation-based educational systems, within the healthcare industry, Ziv, et al. [30], have proposed categorising simulation systems based on tools and approaches utilised:

1. **Low-technology simulators**: Models or mannequins used to practice simple physical manoeuvres or procedures.
2. **Simulated/standardized patients**: Actors trained to role-play patients, for training and assessment of history taking, physicals, and communication skills.
3. **Screen-based computer simulators**: Programs to train and assess clinical knowledge and decision making, e.g., perioperative critical incident management, problem-based learning, physical diagnosis in cardiology, acute cardiac life support.
4. **Complex task trainers**: High-fidelity visual, audio, touch cues, and actual tools that are integrated with computers. Virtual reality devices and simulators that replicate a clinical setting, e.g., ultrasound, bronchoscopy, cardiology, laparoscopic surgery, arthroscopy, and dentistry.
5. **Realistic patient simulators**: Computer-driven, full-length mannequins. Simulated anatomy and physiology that allow handling of complex and high-risk clinical situations in lifelike settings, including team training and integration of multiple simulation devices.

The underlying education theory of simulated education is based on experiential learning. Simulations have the ability to provide concrete experiences with learners being able to identify knowledge gaps. This needs to be provided in a safe private environment encouraging reflection and deeper learning. Healthcare simulation has been proven to be a powerful educational tool facilitating learning for clinicians and change in practice to improve patient outcomes and safety. [33]
In the development of simulation and virtualised systems for healthcare education, the Association for Medical Education in Europe (AMEE)\(^4\) provides direction through publications that guide developers with approaches to designing, developing and building systems to meet specific healthcare requirements [32].

### 2.2 Simulation Based Education in Health Management: Conceptualisation

Griffith University, as part of its School of Medicine, provides post-graduate qualifications through its Health Services Management (HSM) program, to current, and future, health services managers. This program provides students with the capability to [4]:

1. Study issues and material related to the critical needs in health systems.
2. Have access to the latest research outcomes and learn how to adapt them to your area of work.
3. Be part of a contemporary team of people learning and managing organisations.
4. Graduate with internationally-recognised qualifications that will support you and your career development into the future.

The Griffith Health Service Management (HSM) program, like other health management programs in Australian universities, delivers its various courses through on-campus and on-line modalities, employing modern educational collaborative applications and platforms, with course content delivered by educators with relevant academic and industry experiences. Practical application of theory and best practice, however, is limited to scenario-based assessments within the limitations of the classroom and on-line setting. What is missing is a real-world environment to provide students with a health management context.

In terms of offering real-world experiences, there is the opportunity for some students to engage in a workplace integrated learning. In this instance they gain experiences outside the campus, in a health services setting. The formal placement by the university provides an opportunity to apply the program learnings within the context of the healthcare environment. There are also program students with current real-world experiences, and tenures, within health programs and facilities, and can relate to the program content based on this. However, many HSM program students have minimal health industry experiences, and, in most cases, have no management experiences or training. If the opportunity existed to provide an improved learning environment of maintaining the scenario-based delivery model within a simulated health facility, it would enhance the transformation of theory and practice.

In conceptualising a simulated learning environment for a health management program, an analysis of targeted courses content and specific delivery requirements is indicated, along with the business processes utilised to create the end educational outcomes. The ensuing construct is presented in a conceptual model that provides the business architecture for the learning environment. As defined by Davies, et al. [26], a conceptual model:

Is developed and used during the requirements analysis phase of information systems development. Such models are mostly graphic, and they are used to represent both static (e.g., entities) and dynamic phenomena (e.g., processes) in some domain. Conceptual modelling consists of a grammar (i.e., a set of constructs and rules to combine those constructs), a method (i.e., procedures by which the grammar can be used), a script (i.e., the product of the modelling process), and a context (i.e., the setting in which the modelling occurs)

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\(^4\) The Association for Medical Education in Europe (AMEE) is a worldwide organisation that promotes international excellence in education in the healthcare professions across the continuum of undergraduate, postgraduate and continuing education. AMEE, working with other organisations, supports teachers and institutions in their current educational activities and in the development of new approaches to curriculum planning, teaching and learning methods, assessment techniques and educational management, in response to advances in medicine, changes in healthcare delivery and patient demands and new educational thinking and techniques [31].
For the purpose of conceptualisation, the business process model developed would represent the static entities and dynamic processes with the context of the virtualised, simulated, healthcare facility environment, and the specific businesses (reflected by HSM program courses) within it that drive its operational, tactical and strategic components.

In identifying courses that would have the most impact on enabling health reforms, and reflected within research that presents the core competencies of effective health managers, proposed courses to be developed within the simulated system, include:

1. Health Leadership
2. Health Economics
3. Policy Development and Planning in Health
4. Finance and Project Management in Health
5. Health Informatics
6. Change Management in Health
7. Health Workforce

All of these courses reflect the core, non-clinical, business requirements in managing health services, and are represented, organisationally, within all healthcare facilities and programs.

The conceptual model would incorporate business process models for each of the core competencies. The student would be required to manage a simulated healthcare facility and would be faced with a series of scenarios, each requiring decisions to be made by the student. Subsequent scenarios would take into account previous decisions. The scenarios would need to reflect the courses that the student is studying each semester. On-line assessment, either individually or collaboratively with fellow students, could be integrated into the scenarios. In effect, the student would apply learnings, and gather experiences, within a virtualised healthcare facility.

The advantages of the simulated educational systems used for clinical competencies, and its architecture and design, could be mirrored within this health management education system. A web-based simulation model would allow equal access for on-campus and remote students, and the opportunity to bring students together from varied professions and healthcare organisations, and national, social and cultural groups, to grow collective intellectual capacity, will give the program graduate educational outcomes that will enable competent management and strong leadership. The simulated health management environment would provide an opportunity to apply learning to gain experience. It would encourage students to self-reflect and refine their mental models of the core competencies of health management.

3 CONCLUSION

The significance of simulated and virtual education delivery the two most important beliefs of experiential adult learning by allowing hands-on experience in a safe environment, and subsequent guided reflection. It would support the varied professionals that make up the Health Services Management craft-group in further developing the required core competencies that are required to support the various healthcare reforms in many parts of the world.

An innovative model of educational delivery would provide advantages to educational institutions that provide health management programs. They would be able to provide their students with an enhanced learning experience with application of learning in managing a virtual healthcare facility. It would further enhance the on-line experience of post graduate adult education. It would provide a competitive advantage over other universities in attracting future students to health management programs. The opportunity to increase revenue, and stature, within the post-secondary educational industry.

REFERENCES


