

2012

HEALTH MANAGEMENT CAPACITY BUILDING

[AN INTEGRAL COMPONENT OF HEALTH SYSTEMS' IMPROVEMENT]

*A literature review as part of the European Health Management Association's health workforce activities
under the Operating Grant (EHMA-FY2012)*

Andriana Aroni

Table of Contents

Table of Contents	2
List of Figures	3
List of Tables	3
Summary	4
1. Introduction.....	5
2. Methodology	6
3. Capacity building: a multidimensional term.....	7
4. Management: an integral part of capacity building interventions.....	8
5. Capacity building in health	8
5.1. Components of capacity building	9
5.2. Measuring capacity building	10
5.3. Capacity building strategies	11
5.4. Capacity building outcomes.....	11
6. Health management capacity: a key factor for health systems strengthening.....	11
7. Defining health management	12
8. Defining health management capacity building.....	14
9. Strengthening health management capacity in the health services	14
9.1. Appropriate management competencies.....	15
9.2. Management support systems	17
9.3. Enabling work environment.....	18
10. Health management capacity building constraints.....	20
11. Limitations	20
12. Discussion.....	21
13. Conclusions.....	24
References.....	25
	2

List of Figures

Figure 1: Building health management capacity has a positive impact on health systems' strengthening leading to improved health outcomes.....	12
Figure 2: Health systems' management levels adopted by Ortún (Holder & Ramagem, 2012).....	13
Figure 3: Leadership and Management strengthening framework (WHO, 2007).	15
Figure 4: Medical leadership competency framework (NHS Institute for Innovation and Improvement, 2010).	16
Figure 5: Theories of behavioural change in health services in relation to the sphere of influence (Prashanth et al., 2012).....	18

List of Tables

Table 1: Health services' interventions based on theories of behavioural change (Prashanth et al., 2012).	19
--	----

Summary

The health sector is continuously undergoing change and structural reforms, resulting from rising demands of care for chronically ill, ageing populations, co-morbidity, fast advancing technology, as well as changes in inter-professional delivery models (Armstrong & Kendall, 2010). These changes and reforms, combined with the current lack of economic growth indicate that the existing structures of health systems and their traditional ways of functioning are no longer viable and cannot meet current and future health demands. This is resulting in the need for more capacity building to address the underlying challenges. However, Potter and Brough (2004) have argued that it is not diagnostically useful to say ‘there is a need for capacity building’ instead emphasising the need for the term ‘capacity building’ in health organizations to be analysed from a more practical point of view in order to avoid different interpretations.

Inter alia, the lack of managerial capacity has been blamed for most health systems’ inefficiencies (WHO, 2007). Healthcare systems need strong leadership if they are to be sustainable and responsive to the health needs of the future (Ireru et al., 2011). According to the WHO (2007), effective leadership and management in the health services is the key to using the available resources effectively and achieving measurable results. However, the development of adequate management, leadership skills and competencies which are needed in order to strengthen healthy services, have been shown less attention in the current literature (Rowe et al., 2010).

This study, as part of the European Health Management Association’s activities under the Operating Grant ‘EHMA-FY2012’, begins with identifying the different dimensions of the health systems’ ‘capacity building’. It supports and re-emphasizes the importance and value of health management capacity in order to address effectively current health systems’ challenges and provides suggestions for its development based on the available literature. It moves beyond health management competencies, thus comprising a collection of useful information for policy makers as well as current and future health managers.

1. Introduction

During the last decades new demographic trends and a number of health challenges related to these changes have shaped the distribution of health delivery supply and the profile of the medical and non medical professionals involved, leading to a continuous need for change and structural reforms in the health sector. The ageing of the population and a number of severe chronic conditions related to that; new diseases related to migratory flows; environmental changes; new technology; and alterations in the patients' preferences and demands challenge society to adapt but also call for alterations in public health policies in order to maximize the population's health and create modern as well as sustainable health systems.

Strategies for reform proposed by policy makers for health care delivery aim to reduce illness, mortality, unequal access to healthcare, and at the same time to increase the responsiveness of systems, the workforce, and delivery of care. There is a degree of consensus among health policy makers that in order to achieve health related goals (e.g. The Millennium Development Goals) a priority should be given to the health services (WHO, 2007). Reforms at the community level are crucial but as Joffres et al. (2004) believe, in order for change to occur in any community setting it must first occur within the organizations. This requires both explicit delivery system reform strategies and the organizational capacity to execute change.

However, pressure on health expenditure is high and governments and other payers regularly try to reform the health sector by reducing the amount of money spent on healthcare challenging the existing structures of health services and their traditional ways of functioning. Areas such as the infrastructure of health and healthcare organisations, as well as the available resources and workforce, lack the ability to meet the current health demands resulting in the need for more 'capacity building', a term which has been widely used in the academic literature. According to Potter and Brough (2004) though, this is such a broad and multidisciplinary concept that is sometimes misleading. They note that *'as things stand, it is as diagnostically useful to say "there is a need for capacity building" as to say "this patient is unwell"'*, emphasising the need for the term capacity building in health organizations to be analysed from a more practical point of view.

Rowe et al (2010), believe that management skills have a positive impact on health systems strengthening; thus healthcare systems need strong leadership if they are to be sustainable and responsive to the health needs of the future (Ireni et al., 2011). Good leadership and management facilitate change within health organizations and achieve better health services through efficient and responsive deployment of people and other resources. However, health management has proved a deceptively

difficult and imprecise domain to grasp and define (Hunter & Brown, 2007), and the development of adequate management and leadership skills which are needed in order to strengthen health systems, have been given less attention (Rowe et al., 2010). The WHO (2007) reports that, at present, a lack of leadership and management capacity is a constraint on the efficient operation of public and private health sectors considering also the time and money spent by governments to strengthen capacity in leadership and management.

The aforementioned expressions are merely a starting point for further investigation and intervention. The third section of the present study sheds more light to the term ‘capacity building’ as we come across a huge variation of the terms’ interpretation. It is known that managerial work and, specifically, adequate management skills are crucial components of capacity building interventions. This reality is re-emphasised in the fourth section through the collection of relevant scientific sources. The different dimensions of health systems’ capacity building interventions are identified in the following section, concluding to the important impact of health management capacity building for health systems’ strengthening in section six. Different health management definitions are consequently collected and presented in section seven shaping the concept of health management capacity in the following one. Guided by the WHO Leadership and Management framework (2007), diverse ways of strengthening health management capacity are analysed in the ninth section based on the available literature, whereas barriers to health management capacity building interventions are identified in the last section. The knowledge dispensed through this research provides important information and valuable insight for policy makers as well as current and future health managers to facilitate decision making in order to meet the current health system challenges.

2. Methodology

Electronic databases including Web of Science, PubMed, Science Direct, Springer and Wiley Online Library were searched during the last two weeks of October. Search terms included “Capacity building” in the title, keywords and abstract fields combined with “health”, “healthcare” and “organization” in the title and abstract field. In addition, terms such as “health”, “healthcare”, “healthcare organizations”, “healthcare services” in the title field were searched combined with the term “management” and “leadership” in the title and abstract field. “Health management capacity” in the title was also searched.

Any type of study identifying and assessing capacity building in health, healthcare and/or organization performance was included. In addition, studies related to healthcare management/leadership and assessment/evaluation of healthcare management capacity were included. Papers were excluded if they meet any of the following criteria: any studies measuring research capacity rather than organizational

capacity; any studies related to management of chronic diseases; any studies related to waste management; any studies related to Information Technologies' management; studies not published in English and studies not published in peer-review articles.

3. Capacity building: a multidimensional term

Capacity building is a term mainly described within the business and management literature rather than in the health literature and various expressions are used to conceptualise it. Some examples include terms like organizational innovation, organizational development and absorptive capacity. Strategic management and strategic transformation are described as approaches to build organizational capacity and the differences in terminology may reflect the differences in the organizational objectives of every sector (Goldberg & Bryant, 2012).

Overall capacity is considered as a measure of ability and, as most simply defined, capacity is the ability to carry out stated objectives (Goodman et al., 1998). Building this ability has been conceptualised in a diverse range of ways and has been associated with a plethora of different meanings (Crisp et al., 2000). Therefore capacity building as a complex multidimensional term is almost impossible to be reduced into a single precise definition (Baillie et al., 2008).

Horton et al. (2003) define capacity building as an ongoing process by which individuals, groups, organizations and societies increase their ability to perform core functions, solve problems, define and achieve objectives, and understand and deal with the development needs in a broad context and sustainable manner. According to Conolly and Lucas (2002) organizational capacity is a multidimensional concept which includes all these capabilities, knowledge and resources, but also human capital to actuate the service mission and focus is given to individual's formal and informal procedures to achieve this mission. In terms of community empowerment capacity building is the process by which people gain knowledge, skills and confidence to improve their own lives whereas in the area of scientific research building capacity reflects a commitment to quality improvement and characterizes a learning organization (Rifkins, 2003; White, 2002).

Regardless of the variety of definitions related to capacity building, there are some features common to all of them. Capacity building is characterised as an ongoing process strongly related to quality improvement and sustainable results through the improvement of skills, resources and management at the individual, organizations or community level.

4. Management: an integral part of capacity building interventions

As identified in the included literature, management capacity is an integral part of most of the capacity building descriptions. Baille et al. (2008) mention that as the majority of capacity building initiatives work in with and through organizations the structures, processes and management systems within these organizations may have an impact on capacity building. Pielemeier and Salinas Goytia (1999) admit that the concept of capacity building is no necessarily different from development management, whereas Paul (1995) argues that capacity building is a subset of something generally called “good management”.

Improving management and leadership competencies as a crucial component of capacity development is also identified elsewhere in the literature. Capacity building is used to describe the range of activities such as technology upgrades, development and strategic planning as well as management training required, with the ultimate target to improve staffs knowledge and productivity (Light, 2004). In addition, Sastre Merino and De los Rios Carmenado (2012) conclude in their research work that *‘capacity building is a cyclical concept related to the development of human, organizational, institutional and social capita’* and *‘is defined by the existence of resources, networks, leadership and group process skills’*.

Horton et al. (2008), defined two categories of capacity that organizations need to develop: resources and management. Resources refer to the staff, infrastructure, technology and financial issues, whereas management includes strategic leadership, programme and process management as well as the creation of networks. They highlight that each of these categories has certain operational and adaptive aspects that have to be established and maintained (Horton et al., 2008). Elements like leadership, entrepreneurship, financial skills-economic literacy, technology skills, political and planning skills as well as management ones are the main indicators for the organizational capacity at the individual level (Sastre Merino & de los Rios Carmenado, 2012).

In addition, Austin et al (2011), highlighted the work of Blumenthal (2003, 2007), who seeks to integrate organizational and managerial capacity building for development in non-for-profit organizations. Blumenthal (2003), defines capacity building as actions that improve nonprofit effectiveness in organizational stability, financial stability, programme quality, organization’s growth and system’s management that is *‘improving an organizations skills and systems, or...new management strategies or structures.’*

5. Capacity building in health

Most of the literature related to capacity building in health focuses on the particular contexts of community development, public health or organizations (Sastre Merino & de los Rios Carmenado, 2012). For some researchers capacity building refers to the building of infrastructure (skills, staff, resources and

structures) to address more effectively health or social related problems. For other researchers it refers to the sustainability of the programme or an organization's ability to sustain health promotion efforts or has been used to refer to a long term investment in the individuals', organizations', and communities' problem-solving capabilities (Joffres et al., 2004).

According to LaFond et al. (2002), capacity plays a prominent role in securing health systems performance. All health-related capacity building interventions work to improve the function processes within the health system as a whole, the organisations within the health system, the health personnel and the individuals. The latter refers to improving the capacity of individuals to engage productively with the health system through access to health services, to influence resource management and, in the end, improve their own health (Baillie et al., 2008). Capacity building can be used horizontally, with a focus on building individual capacity, and vertically, with the focus on building organizational capacity (Krishnaveni & Sripirabaa, 2008). According to Middleberg, (2003), the fundamental task of all managers is strengthening institutional capacity through the appropriate mix of interventions, easy client access to services, high quality care and effective management systems. The ultimate goal of capacity building interventions in healthcare is to strengthen the sustainability of the local health system through any activity, project or change in the environment which is able to bring positive health outcomes (Horton et al., 2003).

5.1. Components of capacity building

Potter and Brough (2004) differentiated nine separate but interdependent components of the systemic capacity building concept in the health sector including performance capacity, personal capacity, workload capacity, supervisory capacity, facility capacity and support service capacity. Moreover they defined systems' capacity as well as role capacity as crucial components of the system capacity building procedure. In addition, Todsén (2003) identified a variety of factors that any proposed healthcare delivery programme would largely depend on, regardless of how innovative and imaginative it might be. These factors include: the skill of the health care organization in implementing the health care delivery programme; the organization's financial viability; its capacity to establish effective quality controls and program evaluations and its ability to provide various forms of administrative support.

Leadership (scanning, building awareness and commitment), intra-organizational leadership (leadership from various levels within the partner organizations), organizational readiness, policy development, funding research, training activities and partnerships are also critical factors influencing capacity building in health organizations (Joffres et al., 2004). Similar components have been reported to influence health capacity building in terms of infrastructure, program sustainability and problem solving capabilities in a

capacity building framework created by the NSW Health Department (2001). Organizational and workforce development, resource allocation, partnerships and leadership, improve health systems capacity depending on a number of contextual factors.

5.2. Measuring capacity building

Capacity building in the health care sector is difficult to measure, see and compare in practice (Todsén, 2003). Baillie et al. (2008), suggest that the continuous process of capacity building consists of several interrelated elements forming a capacity building cycle. First of all, capacity building needs can be assessed through a variety of activities, using a wide range of tools and instruments. Various stakeholders are then involved in the planning of a capacity building programme which can be implemented using their own resources or resources provided by others (e.g. local government). Finally, the impact of the capacity building activities is evaluated and the capacity building cycle starts again from the beginning.

Robins (2007) discussed nine basic capacity building measures applied and evaluated in the health sector. They broadly fall under the following categories: developing skills through structured learning (academic detailing); facilitating continuous improvement (e.g.: audit and feedback); utilising and rewarding specialists skills and knowledge (local opinion leaders, mentoring and coaching); improving information quality and access (e.g.: practice guidelines) and applying technology more effectively (decision support systems, electronic-based knowledge exchange).

There are a number of approaches to establish whether capacity building occurs including quantitative measures and/or qualitative evaluations (Crisp et al., 2000). Each project may use a unique set of approaches and strategies and therefore requires different specific indicators. For partnerships and community organizations, qualitative measures of the network density or involvement are more suitable in comparison to bottom-up/top-down organizational approaches where subjective qualitative evaluations might be more applicable (Crisp et al., 2000). Brown et al. (2001), refer also to self-assessment techniques applied to measure capacity building. Although these techniques improve the ownership of the results leading to more capacity such techniques are of limited reliability since they measure individuals' perception.

According to Wing (2004), there is a general rule in assessing the effectiveness of capacity building. Attention should be drawn to the improvement in the measurement of that aspect of the organizational performance which is judged to be important to the ability of the organization to fulfil its mission. Nevertheless it should be noted that there are few examples of indicators to measure the linkages between the different levels of capacity building (community, organization, individual) (Brown et al., 2001).

5.3. Capacity building strategies

There is no consensus on a single method or approach to capacity building since it is clear through the literature that the application differs across different settings. Crisp et al. (2000), identified four main strategies which appear to have potential for capacity building in health, based on the then available literature. The first approach focuses on changing agency policies and practice first, as sometimes these can be a bigger constraint to capacity building than the organizational structure itself (top down organizational approach). Another approach focuses on training members of organizations and providing them with skills and knowledge, which are important not only at the individual level but also to the organization and the wider community (bottom up organizational approach). They also identified a partnership strategy which could facilitate capacity building in healthcare emphasizing the need to strengthen the relationship between organizations or groups of people who might otherwise have little or no working relationship, and a community organizing approach where individual community members form new organizations or join existing ones to improve the health of community members.

5.4. Capacity building outcomes

Outcomes related to capacity building have been identified in the literature and include intermediate objectives or more long term outcomes. Prasharth et al. (2012) report that capacity building interventions aim to improve the capacity of health managers to conduct the planning and supervision of health services. Sobeck and Agius (2007) also refer to improved management competencies as well as funding diversification together with more sustainable results such as such as serving more clients or improve the sustainability. Crisp et al (2000), conclude that capacity building process in the health sector is successful when it produces lasting and fundamental changes in how the organization address health issues without the need for ongoing funding.

6. Health management capacity: a key factor for health systems strengthening

As identified in paragraph 5.1 health systems' capacity building components are not described by all researchers in the same manner. However, it is known from various scientific sources that managerial work is a major component of capacity building interventions (Chapter 4). Similarly, in the health sector health management has been identified by some researchers to be of major importance when trying to improve health systems and meet desirable health outcomes. Managerial capacity has been also related to objectives of capacity building interventions in health. Whether it is conceptualised as a result or a starting point of capacity building interventions, '*building management capacity has been identified to be a key factor necessary for health systems' strengthening*' (Newbrander et al., 2012). This leads to the improvement of the overall health systems' performance, which in turn leads to improved health outcomes. The figure below is an illustration of this dynamic procedure (Figure 1):

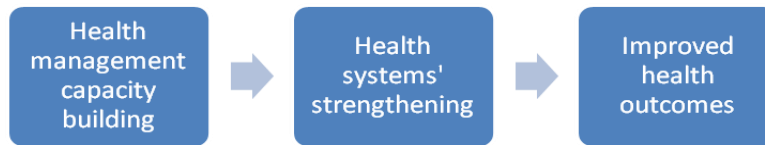


Figure 1: Building health management capacity has a positive impact on health systems' strengthening leading to improved health outcomes.

It should be noted that leadership and management although describing two different concepts are often used interchangeably in the literature or studied together (e.g. WHO, 2007). For the purposes of the present study leadership and managerial competencies refer to the same notion so information on both was included when identified in the available scientific sources. However emphasis will be given to management definition and the following section will try to pin down management in the health sector.

7. Defining health management

As shown in the previous section, it is evident from a wide range of sources that, when capacity building interventions are planned attention should be given to management capacity. Efficient management is needed to support and coordinate the services that are provided within health organizations. For Longest et al. (2000) management has been defined as the process comprised of all the technical functions and activities which occur within organizations in order to accomplish predetermined objectives through humans and other resources. Others have stated that managers are synonymous with anyone in the organization who supports and is responsible for the work performance of one or more persons (Lombardi & Shermerhorn, 2007).

Health management has proved a deceptively difficult domain to define, though. According to the WHO (2005), health system and services managers are responsible for all programmes, projects, facilities and area health authorities, whether public or private including the volume and coverage of services (planning, implementation and evaluation), resources (staff, budgets, drugs, equipment, buildings, information) and external relations and partnerships. Management competencies include creating an empowering and motivating environment, ensuring the effective use of resources, as well as building and promoting partnerships across the organization and beyond (WHO Management competency model).

Similarly Hunter and Brown (2007), chose a broad definition to describe health management as “any activity around the development and implementation of policy and the organization of services aimed to

improving health. The focus is on delivery and effecting change in organizations concerned with improving population health”. This definition though, comprises not only activities in the health care services or systems but also activities of local and regional governments as well as other agencies which have a significant influence on the health of populations and the health of whole communities (Hunter & Brown, 2007).

The Encyclopaedia of Public Health (Kirch, 2008) defines health management as a systematic approach to optimise organization and processes in order to achieve predefined health related goals. Since there are a variety of health goals which are partly competing against each other health management deals primarily with the allocation of limited resources. A variety of actors and goals in the health care systems leads to different health management practices being applied. In order to realise health policy goals, health management includes organizational strategies for the stakeholders, priority setting and cost-effectiveness analysis with regard to existing financial constraints and the implementation of a sound quality management (Kirch, 2008).

As identified in the aforementioned definitions health management does not refer solely to one level of practice, but it is quite a broad process which occurs in different levels instead. Holder and Ramagem (2012) refer to a model adopted by Ortún (1999) who categorises management activities at the macro, meso and micro level (Figure 2).

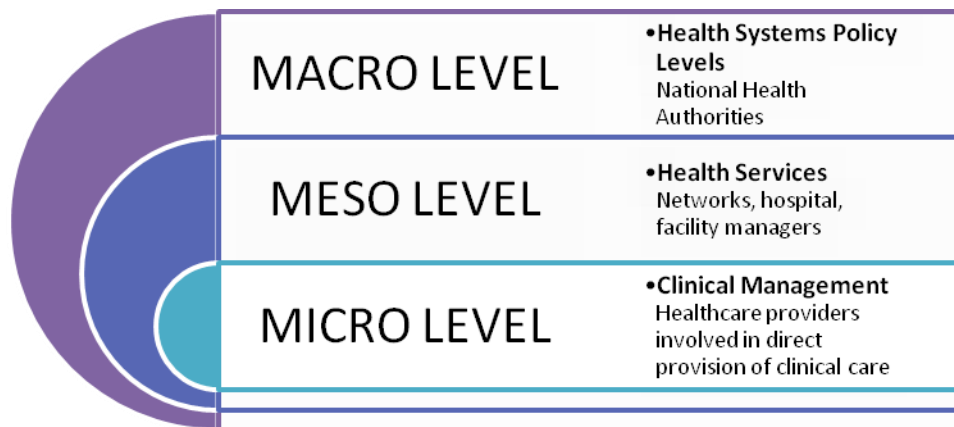


Figure 2: Health systems’ management levels adopted by Ortún (Holder & Ramagem, 2012).

The *macro* level includes all the policies, regulations and strategies implemented by the overall government of the system and under the leadership of the national health authority for achieving national health goals. The *meso* level refers to the management of health services and facilities and is responsible

for the population's health needs, expectations and preferences through the provision of people-centred services, while the *micro* level encompasses the direct provision of clinical care.

The capacity across the different levels differs as there are diverse competencies specific to each of the three levels of health systems' management (Holder & Ramagem, 2012). Health managers need to build their capacity to apply their practices effectively but also to cooperate within and between these different levels to meet health related goals.

8. Defining health management capacity building

Given the complexity of the concepts related to health management activities at the micro, meso and macro level identified through our research and analysed above, we have settled on the following operational definition of health management capacity building which captured the broadness of health managers' different categories (health systems policy management, health services management, clinical management) (Figure 2): *'Health management capacity building deals with the ability of health management to meet the needs existing in their decision area; therefore, health management capacity building affects all levels of health systems (Rosner, 1989).'*

The boundaries of the health system need to be clarified through. According to Murray and Frenk (2000) *'a health system includes the resources, actors and institutions related to the financing, regulation and provision of health actions (any set of activities whose primary intention is to improve or maintain health).'*. This primary effort to define the boundaries of the health system leads to a quite broad definition with questions about the range of the health actions. Nevertheless, components such as individual health services delivered in hospitals and clinics are included by all boundary definitions (Murray and Frenk, 2000) hence the reason this study showed a special focus on the available literature related to health services management capacity building as illustrated in Figure 2. It should be noted though that changes in management and leadership of one of the health systems' components (at the macro, meso or micro level) can undoubtedly trigger or call for changes in the rest of the system (Holder and Ramagem, 2012).

9. Strengthening health management capacity in the health services

The World Health Organization (2005) identified some essential conditions to be taken into consideration when trying to improve health management capacity. Based on these conditions a framework for strengthening health leadership and management in scaling up health services was built (WHO, 2007) (Figure 3).

This WHO framework will guide the presentation of our findings related to improved health management capacity. According to this framework, the number of managers has to be sufficient and those managers have to be properly deployed and equipped with the necessary competencies related to their knowledge, skills and behaviour as well as the ability to organise themselves and their immediate work environment. Management strengthening activities which tackle the issue of numbers systematically have been studied in the developing world, but only a few have been identified as good strategies (WHO, 2007). In contrast to this first dimension there is a great deal of activity related to managerial and leadership competencies.

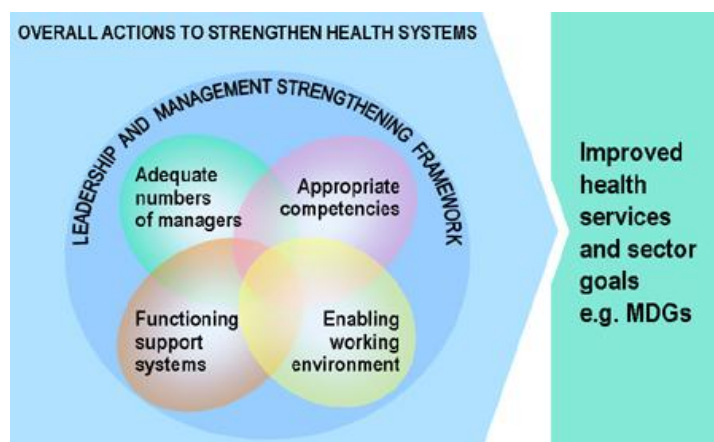


Figure 3: Leadership and Management strengthening framework (WHO, 2007).

9.1. Appropriate management competencies

Pillary (2008) refers to Hellriegel (2004) who defines managerial competencies as ‘sets of knowledge skills, behaviour and attitudes that a person needs to be effective in a wide range of managerial jobs and various types of organizations’ and emphasizes strategic skills, task and people related skills as well as self management ones. Focusing on the provision of health services the Healthcare Leadership Alliance, identified five competency domains common among all practicing healthcare managers including communications and relationship management, professionalism, leadership, knowledge of the healthcare system, as well as business skills and knowledge (Stefl, 2008).

In countries like the United Kingdom healthcare institutions are mainly managed by general managers who have no medical background, but medical doctors have been engaged worldwide in medical leadership for over five decades. There are differences in the way these two groups approach health management capacity and what they might understand by the term “competencies” and, according to Ireni et al. (2011), there is little literature regarding the competencies of medical managers or regarding formal evaluation of their managerial capacities.

The Medical Leadership Competency Framework (Figure 4) is currently the only one being specifically developed to describe doctors' leadership competencies in order for them to be more actively involved in the delivery, planning and transformation of the health services (NHS Institute for Innovation and Improvement, 2009). According to this framework, doctors should build on five clusters of competencies: personal qualities; working with others; setting direction as well as managing and improving services. Managing health services include managing performance, people, resources and planning. A study among doctors in the UK showed that among a number of management and leadership skills the most important quality to succeed as a health manager was professional credibility. In order to improve their management capacity more training in financial and human resource management was needed (Ireni et al., 2011).



Figure 4: Medical leadership competency framework (NHS Institute for Innovation and Improvement, 2010).

As noticed in the literature search in most cases capacity building refers to the development of management competencies mainly through training. Most development organizations are involved in capacity building for achieving sustainable development goals through technical assistance, training courses and other actions (Brown et al., 2001). According to Longenecker and Arsis (2002), management training and education are two of the most important sources of competitive advantage in any organization. Management training is fundamental to develop human resources also in the health sector (Rowe et al., 2010). Todsén (2003) believes that capacity building in the health sector tends to incorporate training as a natural adjunct. Krishnaveni & Sripirabaa (2008) have identified in a number of studies that training helps to build productivity, increases the commitment of employees and enables employees to perform a flexible range of tasks. In addition, Briggs et al (2010) suggest that in order for health managers to be effective in managing health systems, they should be trained so they can take multiple

approaches to their work while Rowe et al (2010), refer to a number of studies related to capacity building programmes in the developing world which support the improvement of management competencies through training. For example, the establishment of management courses and training programmes in Serbia and other South-Eastern European countries' reform programmes have resulted in improvement in all managerial skills (Supic et al., 2010).

However, according to the WHO (2007), training on its own does not solve management problems as it often concentrates in the knowledge of individuals rather than on skills, attitude and behaviours and it is driven by short-term, narrowly focused needs. Potter and Brough (2004) have similarly argued that capacity building in organizations has wrongly become synonymous to training. On the contrary it is an ongoing process that involves a pattern of learning, re-evaluation, and adjustment over time (Alexander et al., 2010). Bevan (2010) suggests improving capacity of the health frontline staff by changing the actual process they work on in real time and on the job rather than sending them in classroom-based courses. Learning does not happen independently of practice, but through interaction with others and the circumstances of that practice (Schwandt, 2005). Small scale self evaluation projects and other evaluation activities carried out by programme staff and managers as part of their everyday work increase learning and strengthen management capacity (Taut, 2007). Effective partnerships have been also used for improving health management skills. An example is analysed in Hartwig et al (2008), where a partnership-mentoring model was used in order to improve health management capacity in Ethiopia. According to this model, fellows (mentors) provided expertise and transferred management skills rather than offering stand alone technical assistance providing an important approach for building health management capacity and long term sustainability.

Nevertheless, in order to achieve improving health management skills other conditions are also necessary apart. Attributes of capacity building studied in organizations involve -apart from sufficient skills-efficient structures, systems and roles, staff and facilities as well as adequate tools (Potter & Brough, 2004). In the WHO framework these are described with two other dimensions: functioning support systems and enabling working environment (Figure 1).

9.2. Management support systems

Well functioning management support systems include planning, management of resources, staff, information as well as supplies (WHO, 2007). As recognised several times in the literature a great deal of attention has been paid to some aspects of the support systems like information and financial management, but human resource management seems to have been relatively neglected (WHO, 2007). Indeed Prasharth et al (2012), suggest good human resource management is necessary in order to

strengthen health management capacity. This includes policies, practices and activities at the disposal of managers to ensure the effectiveness and availability of health staff as well as the skills needed to discharge their function and the motivation to accomplish the organization’s objectives.

9.3. Enabling work environment

An enabling work environment refers to the clarity of the rules under which health management takes place, managers’ authority, efficient supervision and incentives for better practices and performance and it is categorized in the immediate (within the health sector), wider (other public and private stakeholders) and the cultural, political and economic context (WHO, 2007). All these different realities clearly influence the health managers’ effectiveness as their practices are complex behaviours that are determined not only by individual, but institutional and systemic factors (Prashanth et al., 2012). An illustration can be seen in Figure 5.

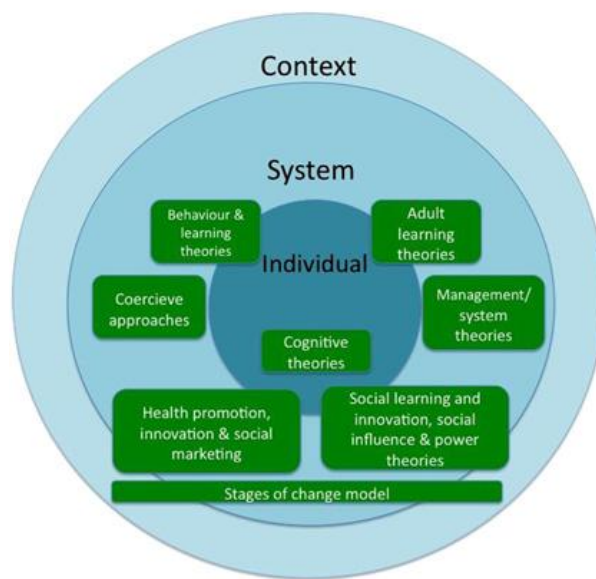


Figure 5: Theories of behavioural change in health services in relation to the sphere of influence (Prashanth et al., 2012).

The above figure was created to illustrate the determinants of performance of health workers in managerial positions and to understand how changes are brought about based on a wide range of theories. Using these theories as a basis the authors suggest adequate interventions in order to improve the capacity of health managers (Table 1).

Effective healthcare management at the individual level includes changes such as exercising professional judgment and skills (conceptual, technical, and interpersonal) in carrying out managerial functions at three levels: self, unit/team, organization. The first concerns the individual manager being able to manage himself effectively in areas such as time, information, space and materials. The second focus of management is the team work level, managing others in terms of effectively completing the work. The third level reflects the fact that managers must work together as part of the larger organization to ensure organizational performance and viability (Thomson et al, 2007). Senior manager support, peer pressure and professional pride rather than financial incentives are crucial to improve management capacity at the individual level (Tung and Yang, 2008).

Table 1: Health services’ interventions based on theories of behavioural change (Prashanth et al., 2012).

Behaviour and learning theories	Audit and feedback, reminders, modelling correct performance, incentives, sanctions, removing factors that are demoralising.
Adult learning theories	Develop guidelines through local consensus, small group interactive learning and problem-based learning.
Management/ System theories	Total quality management, total quality improvement approaches, changing structures and tasks.
Coercive approaches	Laws and regulations, licensing, budgeting, complaints procedure and legal pursuits.
Health promotion, innovation and social marketing	Needs assessment, adapting change proposals to meet local needs, creating clear and attractive messages, and disseminating them via multiple channels.
Social learning and innovation theories, social influence and power influence	Use opinion leaders to respect peers, to disseminate guidelines, pressure from patients to

	use an innovation.
Stages of change model	Predisposing strategies, to progress from pre-contemplation to contemplation (education activities, conferences); enabling strategies to progress from contemplation to action (clinical guidelines); reinforcing strategies to progress from preparation to maintenance (audit and feedback, peer review)

10. Health management capacity building constraints

There are though some drawbacks to initiating capacity building strategies . Capacity building is often written about in a prescriptive manner, lacks empirical evidence, and assumes a ‘one-best-model’. (Alexander et al., 2010). The latter especially does not reflect reality, given the different levels of health systems’ management illustrated in Figure 2. Resistance at all organizational levels has appeared to have been the main challenge to capacity building activities (Joffres et al, 2004), as individual and organizational capacity building do not necessarily take place at the same pace and personal or professional goals and processes, as well as organizational goals and processes, could well diverge, leading to conflicts and dissonances (Johnson & Thomas, 2007). In addition, according to Noordegraaf and Van der Meulen (2008), health care managers work in-between professional and political contexts meaning that their professional practices might be influenced by political interests and outside forces, causing resistance for capacity building intervention.

Supic et al. (2010), report that training depends also on whether the managers/physicians are good learners, interested in management and how management training is done. They propose training evaluation to overcome this problem and to utilise the available training resources effectively. Indeed, new managerial tools, roles and strategies can slow down healthcare management capacity building if not based on adequate needs assessment. Kuhlman (2011) identified a growing body of literature that reveals the problematic outcomes of new managerial tools which include standardization, evidence-based medicine and target setting, as well as financial incentives and new managerial roles.

11. Limitations

Several limitations should be considered when interpreting the presented findings. Through the search strategy less iterative steps were followed and references titles were used for the identification of other

relevant articles which might not have appeared through our search terms used. Consequently, this study was a standard literature review providing a fruitful basis for a tight and methodologically fixed systematic review in the future. In addition, as different authors might have defined “capacity building” using different terms from those used in this review, the present study will not have been able to capture all the different studies. This suggests future researchers should use broader search terms and inclusion criteria. Lastly, it should be noted, that the articles included in this research mainly involved sources for capacity building in a number of developing countries. However, according to Baille et al. (2008), the developed economies of the world have also much to gain in terms of effectiveness, by building on the different practices that have already been developed in those countries.

12. Discussion

Strengthening health systems has been recognized as an international priority in order to meet the current health challenges (Rowe et al., 2010). This study identifies the different dimensions of health systems’ capacity building in the available literature in order to prevent the term simply being a cliché. Although it is not a new finding this study was able to highlight and re-emphasize the importance of health management capacity as a crucial component of capacity building interventions and clarified the term providing also recommendations for its further improvement and development at the health services level.

The term capacity building has been widely used and has been interpreted in several ways. This study was able to indicate the complexity of the term since there is no one single way to define, approach or measure it. Particularly in the health sector the available literature offers quite a broad range, and different sets of capacity building indicators including: performance, financial resources, administrative support, partnerships, leadership as well as the systems’ readiness for change and restructure. In order to measure those indicators a number of quantitative, qualitative and self assessment evaluations have been identified by other authors especially at the organizational level (e.g. Crisp et al., 2000; Brown et al., 2001). Strategies such as changing policies and practices; training and building partnerships have been widely used in the literature in order to improve health organizations’ capacity (Supic et al., 2011). Whether in the health sector or other fields, it has been identified that capacity building is not just a static intervention but rather an ongoing procedure that aims to produce sustainable results. The later cannot be confirmed for the use of the aforementioned strategies providing room for further investigation.

Although there is no consensus on the components of capacity building, effective management/leadership was identified several times as one of its essential aspects, whether capacity building took place at the individual, organizational or community level. Management is a major vehicle for capacity building also

within the health sector. There is a body of current and older literature which link management and/ or leadership improvement with components or outcomes of capacity building interventions. Management together with organizational structure, technology, financial and human resources as well as partnership and networks can lead to sustainable improvement of the ability to carry out specific objectives (at the individual, organization and community level) thus leading to improved health outcomes. In times of financial constraints investing in building health management capacity will allow the achievement of measurable results and the available resources to be effectively used (WHO, 2007).

This research identified a gap in the literature related to ways of strengthening health management capacity. The WHO (2007) leadership and management framework was the only explicit one found in order to improve health service's management and was used as a guide of our findings' presentation related to health management capacity empowerment. Within the four dimensions described (adequate number, appropriate competencies, functioning support systems, enabling working environment), it was clear that capacity building strategies focusing on the appropriate number of health managers is the dimension which has been shown less attention, calling for further clarification in the future.

Health management competencies are mainly described within the healthcare/hospital sector and include a wide range of skills such as human resource management, self management/professionalism and planning. It should be noted though that these dimensions capture doctor's perception on management skills, however, Thompson (2007) argues, that management in healthcare occurs through many others who may not have "manager" in their position title. Indeed, Joffres et al. (2004) emphasizes the multidimensionality of health systems comprised of boards, managers, staff and volunteers. Focus only on the role of the senior manager or the lead administration of the organization should be avoided and attention should be equally given to other groups as they can also be effective leaders, innovators, linkers and enablers. Policies and legislations are needed that will promote integrated health services delivery networks to improve care coordination and the effectiveness of service delivery as well as the development of new interaction competencies (Holder & Ramagem, 2012). At the same time the different perceptions of professional managers and doctors regarding management strategies and competencies should be taken into consideration when planning management capacity interventions. Mark (1991), refers to the conflict in cultures between managers and professional clinicians at management positions often due to lack of understanding that stems from different training and development needs in the respective groups (Ireni et al., 2011).

In order for interventions to be built on new or existing health management competencies a body of literature supports adequate training and education (Brown et al., 2001; Longenecker et al., 2002;

Todsén, 2003, Krishnaveni & Sripirabaa, 2008; Rowe et al., 2010; Briggs et al., 2010 ; Supic et al., 2010). Training, education and knowledge translation are key elements for health professionals. Ideally health managers should undertake training courses that will allow them to operate effectively as part of multidisciplinary teams and which would value the contribution of a wide range of professionals. Academic institutions should ensure compatibility between their curricula content and the modern health systems' needs or create new training modules which will include management in health professionals' career paths. Programmes should also build both skills of leaders and networks of leaders. They should link graduates with professional associations and advocate that the graduates participate in networks for sustained personal and system development. Networks provide the support and collective creativity needed to enact system and infrastructure changes (Umble, 2011). Overall, as highlighted by Meyer et al. (2008), future development of health management programmes reveals the potential to reduce the overall financial burden of global health care.

Training alone does not always lead to the desired results, though, and a number of authors suggest moving away from the typical classroom-based courses (Taut, 2007; Bevan, 2010; Potter & Brough, 2004). In addition, training and educational courses require the adequate upfront financial investment which is difficult to achieve in times of financial constraints. Different interventions based on a wide range of behavioral theories have been identified by this study. These include audit and feedback, frameworks for the managers' daily activities, reminders, guidelines as well as total quality management. Apart from education and training, lifelong learning, and continuing professional development, the formalization of quality standards in outcomes, manuals for capacity building and capacity building interventions, should allow professionals to work alongside one other as equals (Franks, 1999). Such interventions include networking and twinning arrangements, as well as workshops, seminars and platforms for cooperation which facilitate knowledge sharing.

According to Johnson & Thomas (2007), individual learning and organizational capacity building interact. Organizational capacity can be strengthened if attention is given to external environmental forces, institutional motivation and capacity together with institutional performance (Lusthaus et al., 1995). Good management support systems with a focus on human resources management are necessary to improve health management capacity in the health services. Workforce scheduling and the workforce downsizing are often mentioned by researchers as main challenges (Jack & Powels, 2009). In addition, an enabling cultural, political and economic context is being found to play a crucial role in strengthening health management capacity.

This study suggests that health systems' capacity building should not only be the focus of responsibility for the medical and public health sectors. There should be an approach which goes beyond leadership conceived only for physicians and include other groups in areas of economic development, education, business, industry, arts, law and environmental protection is necessary (Joffres et al., 2004; Holder & Ramagem, 2012). To avoid resistance from certain groups when delivering capacity building interventions, a systemic evaluation of the development of structures, external supports, policies, resources, and professional development is necessary. This requires needs assessment mechanisms, adequate incentives which move beyond financial ones, motivation as well as appropriate managerial tools at the health managers' disposal.

13. Conclusions

Health systems' capacity building is crucial if we want to address the current and future health challenges. Although a multidimensional term, capacity building mainly encompasses the improvement of all those skills, recourses and structures at the individual, organizational or community level to meet specific and sustainable health-related objectives. Effective management has been re-identified as an essential component of this ongoing procedure with improved managerial skills and competencies as the most important of a number of conditions (support systems, enabling environment). However, it should be noted that to date the majority of the available literature related to the appropriate health services' management competencies is strongly dominated by a focus on the medical/physician level. Therefore a framework on agreed health management competencies, which would apply clear systemic approaches and methodologies to health services, is not yet possible; suggesting that further research should include other non-physician managers and look at different levels of the health workforce.

Management education and training has always been essential in building health management capacity and will continue playing an important role in the future supporting health services growth and advancement. Nevertheless, a shift from class-based courses and seminars to a more interactive approach of knowledge and experience exchange at the horizontal as well as vertical level of health services is suggested. As health management is not only practiced by those on the top of the managerial hierarchy networks and partnerships across different management levels are necessary. This would allow health managers to think differently, break old habits, attain different behaviors and produce new and better ideas and practices.

In addition to the formal management capacity building strategies such as undergraduate/ postgraduate courses, lifelong learning seminars, audit and evaluation, informal training, including e-learning and problem-based learning, constructive feedback as well as reminders, are suggested in order to improve

health management capacity. All these approaches based on a variety of behavioral theories, need further research in terms of their efficiency and effectiveness in different settings. Further research is also required to examine ways of improving health management capacity, especially through strategies ensuring adequate numbers of health managers which has been found to have received the least attention.

For improving health management capacity benchmarking health management strategies (one-models fits all) are not considered as adequate approaches since managers' practices are complex behaviors affected by several levels of influence (individual, system, context). This research suggests further actions and activities at three levels. Firstly, academics should embed the topic of health management capacity building in modules, curricula, programmes and other initiatives as compatibility with current demands and high quality research in this field are essential. Policy-makers should respond with decisions that will reassure and protect the balance between the health manager's autonomy and the organization's needs and mission, whereas health managers should respond to the call for developing adequate skills and competencies while collaborate effectively with other levels of health workforce in order to promote a modern and efficient health system.

References

- Alexander, J., A., Christianson, J., B., Hearld, L., R., Hurley, R., Scanlon, D., P. (2010). Challenges of capacity building in multisector community health alliances. *Health Education and Behavior* 37(5), 645-664.
- Armstrong, K. And Kendall, E. (2010). Translating knowledge into practice and policy: the role of knowledge networks in primary health care. *Health information management journal* , 39 (2), 9-17.
- Austin, M., J., Regan, K., Samples, M., W., Schwartz, S., L., Carnochan, S. (2001). Building Managerial and Organizational Capacity in Nonprofit Human Service Organizations Through a Leadership Development Program. *Administration in Social Work* 35(3), 258-281.
- Baillie, E., Bjarnholt, C., Gruber, M., Hughes, R. (2008). A capacity building conceptual framework for public health nutrition practice. *Public Health Nutrition* 12(8), 1031, 1038.
- Bevan, H. (2010). How can we build skills to transform the healthcare system? *Journal of Research in Nursing* 15(2), 139-148.

- Blumenthal, B. (2003). *Investing in capacity building: A guide to high-impact approaches*. New York, NY: Foundation Center.
- Blumenthal, B. (2007). *A framework to compare leadership development programs*. New York, NY: Community Resource Exchange.
- Briggs, D., S., Tejavivaddhana, P., Cruickshank, M., Fraser, J., Campbell, S. (2010). The Thai-Australian Health Alliance: Developing Health Management Capacity and Sustainability for Primary HealthCare Services. *Education for Health* 23(3).
- Brown, L., Lafond, A., Macintyre, K. (2001). *Measuring Capacity Building*. University of North Carolina. Retrieved on October 2012 from: <http://www.heart-intl.net/HEART/Financial/comp/MeasuringCapacityBuilg.pdf>
- Connolly, P. and Lukas, C. (2002). *Strengthening nonprofit performance: A funder's guide to capacity building*. St Paul, MN: Amherst Wilder Foundation.
- Crisp, B.R., Swerissen, H., Duckett, S. J. (2000). Four approaches to capacity building in health: consequences for measurement and accountability. *Health Promotion International* 15(2), 99-107.
- Franks, T. (1999). Capacity building and institutional development. *Public Administration and development* 19, 51-61.
- Goldberg, J. and Bryant, M. (2012). Country ownership and capacity building: the next buzzwords in health systems strengthening or a truly new approach to development? *BMC Public Health* 12 (523).
- Hartwig, K., Pashman, J., Cherlin, E., Dale, M., Callaway, M., Czaplinski, C., Wood, E. W., Abebe, Y., Dentry, T., Bradley, E., H. (2008). Hospital management in the context of health sector reform: a planning model in Ethiopia. *International journal of health planning and management* 23,203–218
- Hellriegel, D., Jackson, E., S., Slocum, J., Staude, G., Amos, T., Klopper, H., B., Louw, L., Oosthuizen, T. (2004). *Management 2nd edition*. Oxford University Press: South Africa.
- Holder, R. and Ramagem, C. (2012). Health leadership and management competencies: A systematic approach. *World Hospitals and Health Services*, 48(3), 9-12.

- Horton, D., Alexaki, A., Bennet-Lartey, S.(2003). Evaluating Capacity Development: Experiences from Research Development Organizations Around the World. The Netherlands: International Service for National Agricultural Research (ISNAR)/International Development Research Centre.
- Hunter, D. J. and Brown, J. (2007). A review of health management research. *European Journal of Public health*, 17(1).
- Ireni, S., Walshe, K., Benson, L., Mwanthi, M., A. (2011). A qualitative and quantitative study of medical leadership and management; experiences, competencies, and development needs of doctor managers in the United Kingdom. *Journal of Managing and Marketing in Healthcare* 4 (1), 16-29.
- Jack, E., P. and Powels, T., L. (2009). A review and synthesis of demand management, capacity management and performance in health-care services. *International Journal of Management Reviews* 11(2), 149-174.
- Joffres, C., Heath, S., Farquharson, J., Barkhouse, K., Latter, C., MacLean, D., R. (2004). Facilitators and Challenges to Organizational Capacity Building in Heart Health Promotion. *Qualitative Health Research* 14(39), 39-60.
- Johnson, H. and Thomas, A. (2007). Individual Learning and Building Organizational Capacity for Development. *Public Administration and Development* 27, 39-48.
- Kirch, W. (2008), *Encyclopedia of Public Health*. P.618-625.Springer
- Krishnaveni, R. and Sripirabaa, B. (2008). Capacity building as a tool for assessing training and development activity: an Indian case study. *International Journal of Training and Development* 12(2), 121-134.
- Kuhlman, E., Burau, V., Larsen, C., Lewandowski, R., Lionis, C., Repullo, J. (2011). Medicine and management in European healthcare systems: how do they matter in the control of clinical practice? *International Journal of Clinical Practice* 65(7), 722-724.
- LaFond, A., Brown, L., Macintyre, K. (2002). Mapping Capacity in the health sector: a conceptual framework. *The International Journal of Health Planning and management* 17, 3-22.
- Lombardi, D., M. and Schermerhorn, J., R. (2007). *Healthcare Management*. Hoboken, NJ: John Wiley.

- Longenecker, C., O. and Ariss, S., S. (2002). Creating competitive advantage through effective management education. *Journal of Management Development* 21(9), 640-654.
- Longest, B., B., Rakich, J., S., Darr, K. (2000). *Managing Health Services organizations and systems*. Baltimore, MD: Health Professions Press.
- Lusthaus, C., Anderson, G., Murphy, E. (1995). *Institutional assessment: A framework for strengthening organizational capacity for IDRC's research partners*. Ottawa: International Development Research Centre.
- Mark, A. (1991). Where are the medical managers? *Journal of Managers in Medicine* 5(4), 6-12.
- Meyer, C., Rassaf, T., Schauerte, P., Schimpf, T., Kelm, M., Goepel, E. (2008). Health management as global challenge. Beyond the 19th World Conference on Health Promotion and Education. *Journal of Public Health* 16, 71-73.
- Middleberg, M., I. (2003). Promoting Reproductive security in Developing Countries. *Women's' Health Issues*, 103-131.
- Murray, C., J., L. and Frenk, J. (2000). A framework for assessing the performance of health systems. *Bulleting of the World health Organization* 78(6), 717-731.
- Newbrander, W., Peercy, C., Shepherd-Banigan, M., Vergeer, P. (2012). A tool for assessing management capacity at the decentralized level in a fragile state. *International Journal of Health Planning and Management* 27, 276-294.
- NHS Institute for Innovation and Improvement and Academy of Medical Royal Colleges (2009). Medical Leadership Competency Framework. Retrieved on October 2012, from: http://www.yorksandhumberdeanery.nhs.uk/about_us/news/documents/Medical%20Leadership%20Competency%20Framework%203rd%20ed.pdf
- Noordegraaf, M. and Van der Meulen, M. (2008). Professional Power Play: Organizing Management in Health Care. *Public Administration* 86(4), 1055-1069.
- NSW Health Departement. (2001). A framework for building capacity to improve health. Retrieved on October 2012 from: http://www0.health.nsw.gov.au/pubs/2001/pdf/framework_improve.pdf
- Paul, S. (1995). *Capacity building for health sector reform*. Discussion Paper No.5, WHO, Geneva.

- Pielemeier, J. and Salinas-Goytia A., D. (1999). United Nations capacity building in Brazil. Chapter 3 in: Maconick R, Morgan P (eds). *Capacity building supported by the United Nations: some evaluations and some lessons*. New York: United Nations, Department of Economic and Social Affairs.
- Pillary, R. (2008). Managerial competencies of hospital managers in South Africa: a survey of managers in the public and private sectors. *Human Resources for Health* 6(4).
- Potter, C. and Brough, R. (2004). Systemic capacity building: a hierarchy of needs. *Health Policy and Planning* 19(5), 336-345.
- Prashanth, N., S., Marchal, B., Hoeree, T., Devadasan, N., Macq, J., Kegels, G., Criel, B. (2012). How does capacity building of health managers work? A realistic evaluation study protocol. *BMJ Open*.
- Rifkin, S. (2003). A framework linking community empowerment and health equity: it is a matter of CHOICE. *Journal of Health, Population and Nutrition* 21, 168-180.
- Robins, L. (2007). Capacity-Building for Natural Resource Management: lessons from the Health Sector. *EcoHealth* 4, 247-263.
- Rosner, D. (1989). "Doing Well or Doing Good: The Ambivalent Focus of Hospital Administration." In *The American General Hospital: Communities and Social Contexts*, edited by D. Long and J. Golden, 157–169. Ithaca, New York: Cornell University Press.
- Rowe, L. A., Sister Brilliant, B., Cleveland, E., Dahn, B. T., Ramanadhan, S., Podesta, M., Bradley, E.H. (2010). Building capacity in health facility management: guiding principles for skills transfer in Liberia. *Human Resources for Health* 8(5).
- Sastre Merino, S. and de los Rios, C. (2012). Capacity building in development projects. *Procedia- Social and Behavioral Sciences* 46, 960-967.
- Schuh, R., G. and Leviton, L., C. (2006). A Framework to Assess the Development and Capacity of Non-profit Agencies. *Evaluation and Planning* 29, 171-179.
- Schwandt, D., R. (2005). When Managers Become Philosophers: Integrating Learning with Sense Making. *Academy of Management Learning and Education* 4(2), 176-192.

- Sobeck, J., Agius E. (2007). Organizational capacity building: Addressing a research and practice gap. *Evaluation and Program Planning* 30, 237-246.
- Stefl, M., E. (2008). Common competencies for all healthcare managers: the Healthcare Leadership Alliance model. *Journal of Healthcare management* 53(6), 360-373.
- Supic, Z., T., Bjegovic, V., Maarinakovic, J., Milicevic, M., S. (2010). Hospital management training and improvement in managerial skills: Serbian experience. *Health Policy*, 96, 80-89.
- Taut, S. (2007). Studying Self-Evaluation capacity building in a Large International Development Organization. *American Journal of Evaluation* 28(1), 45-59.
- Thompson, J., M. (2007). Health Services Administration. In S. Chilsom (Ed.). *The health professions: Trends and opportunities in U.S. health care*. Sudbury, MA: Jones & Bartlett.
- Todsen, D., R. (2003). Health sector capacity building. *New Directions for Philanthropic Fundraising* 40, 29-50.
- Trisolini, M., G. (2002). Applying business management models in health care. *International Journal of Health Planning and Management* 17, 295-314.
- Tung, Y-C and Yang, M-C. (2009). How to Effectively Implement an Indicator System to Improve Performance from a Management Perspective: The Case of Taiwan Healthcare Indicator Series (THIS) System. *Journal of Medical Systems* 32, 215-221.
- Umble, K., Baker, E., L., Diehl, S., J., Haws, S., Steffen, D., Frederick, S., Woltring, C. (2011). An Evaluation of the National Public Health Leadership Institute 1991-2006: Part II. Strengthening Public Health Leadership Networks, Systems, and Infrastructure. *Journal of Public Health Management Practice* 17(3), 214-224.
- White, F. (2002). Capacity-building for health research in developing countries: a manager's approach. *Pan American Journal of Public Health* 2(3), 165-171.
- Wing, K. T. (2004). Assessing the Effectiveness of Capacity-Building Initiatives: Seven Issues for the Field. *Nonprofit and Voluntary Sector Quarterly* 3(1), 153-160.
- World Health Organization (2005). Strengthening management in low-income countries. Retrieved on October 2012 from:

<http://www.who.int/management/general/overall/Strengthening%20Management%20in%20Low-Income%20Countries.pdf>

World Health Organization (2007). Strengthening management in low-income countries: a lesson from Uganda. Retrieved on October 2012 from: http://www.who.int/management/working_paper_11_en_opt.pdf

World Health Organization (2007). Towards Better Leadership and Management in Health: Report on an international consultation on strengthening leadership and management in low-income countries. Retrieved on October 2012 from: http://www.who.int/management/working_paper_10_en_opt.pdf

World Health Organization (2010). Key components of a well functioning health system. Retrieved on October 2012 from: http://www.who.int/healthsystems/EN_HSSkeycomponents.pdf

Yeatman, H., R. and Nove, T. (2002). Reorienting health services with capacity building: a case study of the Core Skills in the Health Promotion Project. *Health Promotion International* 17(4), 341-350.