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The Imperative Innovations in Healthcare Organizations

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Abstract

Social pressure and populism about the sense of state obligation to provide health care is an essential problem that must be solved. But, in republic state, it cannot be easy to take care of. So, it is sought for the solutions in organizational level in context of productivity, quality, reducing cost, role of health workforce. From this point, changing the method of measuring productive for any health organization to allocate the resources properly, the ways of improving quality by reducing cost, empowerment of health staff, which increases leadership and engagement to ensure improvements for more sustainable healthcare systems are new innovation areas. When considered that the funds which is financed for healthcare expenses cannot be increased because of the fact that there is global recession since 2008. So, global production has been depleting. Accordingly, the aim of this study is to investigate new imperative innovation areas in healthcare organizations for sustainable healthcaresystem.

Keywords

Imperative Innovation • Quality and Reducing Costs • The role of healthcare workers • Enhancing Leadership and Engagement

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Health care is financed by social state's social security services for many countries. But, the costs of providing quality health have been increasing for years. Specially, debt of states and global economic crisis has been aggravating in this scheme. In this context health care productivity is most essential issue that we must tackle. However; aging population, changing disease form, costly technologies are most observed problems deepening this issue. After all, social pressure and populism about the sense of state obligation to provide health care is exacerbated. All of this doesn't make the sustainability of health care systems possible. Although the remedy of this problem is on health political area, there is something to do at the point of organizational level. When looked over it at the point of organizational area, good information and communication, performance management, team based problem-solving are several solution tools to innovate for new ways to log out from vicious circle. At the center of the tools, there has been management of human resources. When taken into consideration the cost of stolen services for a hospital, approximately %70 of all costs comprising of human resources. In the present case when inflations have been going up for almost country owing to economic recession, reducing the cost of human resources can be impossible for health care managers.

Purpose

The aim of this study is to investigate new imperative innovation areas in healthcare organizations for sustainable healthcare system.

Method

In this study, it is used literature review method for research concerning imperative innovations for healthcare organizations.

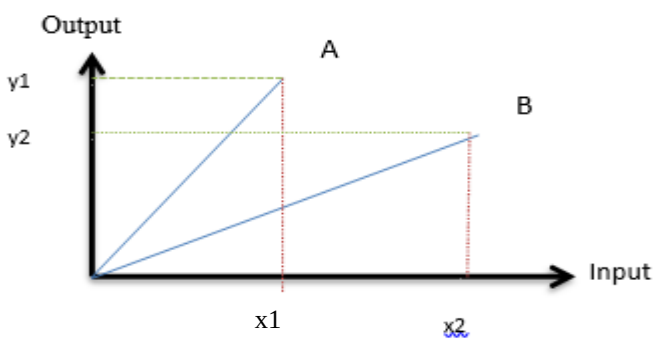
Results

Productivity and Measuring of Health Organizations

When looked to notion of productivity, it is seen that productivity is a ratio between inputs and outputs (inputs/outputs). Generally, it is expected that ensuring maximum output with minimum probable input. While inputs for a health organization are health work force, medical equipment, numbers of bed, outputs are number of discharged patients from inpatient services and outpatient services, performed medical operation and treatment without medical error etc. It can be seen this concept on a graphic below.

Graph 1.

Productivity



Source: Appleby, J. (2012). Productivity in Healthcare. *The Innovation Imperative in Health Care Organisations: Critical Role of Human Resource Management in The Cost, Quality and Productivity Equation*. Edward Elgar Publishing.

When compared with point B, point A depicts more productivity regression line via ensuring more the production with less input. In that case; as long as the regression lines erects, that is, as long as the curve increases, productivity would go up.

Measurement problem of productivity of health care services can be overcame by Atkinson's method as a new innovation. Before Atkinson, National Health Services has described sixteen different types activities to measure the outputs from inpatient practices to emergency practices according to NSH budget allocated to related practices. Atkinson's criticism on measurement of output is that there is no detailed information both costs weights, timeliness and quality of care. Because there were only two categories determining the cost weights as inpatient and day case treatment. Also, General Practitioners' consultations and their cost weights are not measured properly according to Atkinson review. To ensure this, it should be used a computerized information systems to improve output measurement. If miscounted the output, productivity ration would change wrongly. Another approach of Atkinson is that outputs should be embraced the whole course of treatment for any illness. However, generally; investigations, inpatient stays, follow-up are assessed as independent interventions for measuring output. But, they are actually part of related treatment, so we perceive that the consultations for General Practitioners increase in terms of Atkinson. Because of the error evaluation, we must appropriate funds for NHS. Besides, Atkinson suggest that measurement units like readmission rates that defines the unsuccessful treatment for any illness can be implemented for measuring output (Atkinson, 2005; Applebly, 2012). Atkinson's suggestion concerning output measurement in context of quality, there has been more developments in this area.

The Tripod of Improvement as Quality, Productivity, Innovation

The productivity problem can be solved as well as, the real problem is to ensure that with quality generating innovation for total improvement. Besides, main constraint of achieving that success is finance as known. All occurred problems are valid for any health systems. Because expectation of people using health care services, aging population, new medical technologies deepen this issue (Bevan, 2012). From this point, describing innovation concept is necessary. As it is known, innovation is a process ensuring transformation to obtain benefits like reducing cost per capita for patients and health organizations in medical industry. These can be any idea, knowledge or designing any delivery process. Funding constraints enforce thinking on the key that creates innovation. Otherwise, there have been two options on executes' table. One of them is to stop delivering some services or is to work health staff harder (Bessant et al., 2010). Although productivity completely is an economical term, in health industry maybe because of the feature of not tolerating any mistakes, a connection between productivity and quality have been postulating for a few times. When guessed that the healthcare is a process management, as output of that process for high quality requires fewer adverse events and hospital readmissions, lower mortality that reduces costs per capita (Crump & Adil, 2009). However, generating innovation that ensures quality and productivity together is more difficult than expressing what must be done. From this point, generally we have barriers which hinder generating innovation like organizational structure, methods for transformation and mindset about transformation (Kenagy, 2009).

According to Baker's suggestions, the framework of innovation includes three types as process, service, and strategy. Relative framework examples are seen below table (Baker, 2002).

Table 1.
Examples of Innovations Types

Process Innovation	Service Innovation	Strategic Innovation
Redesigning the appointment process in the General Practitioner	Creating new specialist services in the community, e.g., intravenous therapy, deep vein thrombosis, complex wound clinics	Transforming the paradigm of urgent and emergency care across the community
Reinventing the triage process in Accident and Emergency	Introducing hyper acute stroke services across the city	Designing radical new integrated models of health and social care for people with long term conditions
Making it easier for patients to order repeat prescriptions	Creating a 'virtual' induction for all newly appointed clinical staff	Shifting power: patients, families and communities as co-creators and producers of health (Doherty and Mendenhall, 2006)
Redesigning the job application process within recruitment and selection	Radical redesign of the clinical pathway for people who break their hips	Transforming the paradigm of urgent and emergency care across the community (Bevan, 2013)

Source: Baker, K, A. (2002). Innovation. http://www.au.af.mil/au/awc/awcgate/doe/benchmark/ch14.pdf, Accessed Date: 20.01.2017

According examples of innovation types; while process innovation generally points out improvement of service process by making some changes to facilitate the transactions of patients, service innovation points out the introducing new serves, specialist or any new application out and out. When compared, although quality and productivity achievements of service innovation is especially more than process innovation, it is seen that services innovation have risky more than process innovation. Because, services innovation requires more coordination between all of organizational functions (Bevan, 2012). So that being successful in context of output of service innovation, there are some features according to Parker's review; integration, substitution, segmentation, simplification as shown in the table below (Parker, 2006).

Table 2.
The features of service innovations

Integration	**Generating connection between healthcare and social care creating flawless integrated care**
Substitution **i. Location Substitution** **ii. Skill Substitution** **iii. Technological Substitution** **iv. Clinical Substitution** **v. Organizational Substitution**	Delivering higher value healthcare, lower cost for patients i. Creating high technical environment for patients ii. Empowering health staff; enabling nurses to prescribe drugs, a role that was previously carried out by doctors iii. Benefiting from health technologies facilitating process for both patients and health staff; using self-services applications online for appointment or screening medical imaging iv. Shifting from medical care model to community care or family or self-care model v. Ensuring contributions of voluntary and community groups or social enterprises to the healthcare and social care apart from traditional medical organizations
Segmentation	Grouping the patients by their specific requirements and designing discrete services for them by ensuring them to get these services whenever they want and need.

Simplification	a. Counterbalancing the risk of creating extra structures and extra complexity b. Ensuring adds value for patients in exchange for each innovation step c. Minimizing potential additional costs as a result of innovation d. Cutting-out any activity, application or process which are not necessary and does not include the value for patients

Source: Parker, H. (2006). Making the Shift: a Review of NHS Experience. *Coventry: NHS Institute for Innovation and Improvement*

Strategic innovation commonly emphasizes an approach which creates new models for delivering health services for near future. From this point, health managers must think on it by considering available source like human resource, financing constrain, the changing needs of those who use health services due to for example aging population.

Another issue on innovation is the process from generating to implementation of it. On this point, the NHS Institute for Innovation and Improvement presents five stage process which enable NHS frontline staff and leaders to assess and stimulate service innovations for quality and productivity improvement. First step is to assess the new potential innovative idea by health staff in context of the performance. Main search topic in this stage is whether it would create quality and cost improvement. Second step is to benchmark the idea in other health organizations across the world. The third step is to assess the magnitude of the idea which would generate in the organization. Main search topic in this stage is to compare the idea to the past application, process or service type. In fourth stage, extra solution recommendations are sought in the framework of this idea to make it perfect for obtaining more benefit. In the final stage, summary statement is developed to begin for implementation of the innovative idea (Maher et al., 2008).

When taken into consideration the notion innovation to gain improvement for patients and health staff, innovativeness is everyone's responsibilities from frontline health staff to community groups or social enterprises and requires organizational culture which all organization members know that innovativeness is imperative approach in condition of environmental change (Bevan, 2012).

Raising Quality and Reducing Cost

Although cost saving motivate health manager and policy-makers, this interest is limited to them. Because, main focal point in healthcare is avoiding from adverse events like malpractice. Thus, quality in healthcare comes to the forefront. But, it is suspected that quality increases the costs of healthcare. But, it is seen that quality is misunderstood. In this respect, quality improvements, in other words value improvements which raises quality and reduces cost simultaneously must be realized for sustainability. In addition to personnel shortage, demographic changes, more expensive treatments, health technologies, increasing demand for healthcare deepen that problem (Øvretveit, 2012). In literature, there are two type costs. One of them is the cost of poor quality. Hospital-acquired infections, adverse drug events and misuse or misuse of healthcare have been generating the cost of poor quality (Øvretveit, 2009). For example, it is estimated that, adverse drug events related to the cost approximately £1.9bn a year (The Guardian, 2008) in National Health Serves' hospitals in UK. Also, it is known that patients with chronic diseases' avoidable emergency admissions are high. Besides, implementation of quality improvements can be costly, especially in services with little experience or infrastructure to support improvements (Øvretveit, 2009). But, some improvements by raising

quality have ensured reducing cost. For example, 5 million dollars saved in Hospital of the University of Pennsylvania in Philadelphia in exchange for $85,607 investment which supported improvement team working on raising quality (Martin et al, 2009).

Although cutting back on some healthcare services is seemed simple-solution, in the countries where social pressure and populism about the sense of state obligation to provide health care have been is real hard. From this point, health managers and other stakeholders have been seeking solutions which provide both quality and reducing health cost. Secondary and tertiary healthcare services consumes majority of financing sources. Therefore, many improvement areas focus on these services. Within the scope, the study of Marshall and Øvretveit gives us some possible examples that reduce the costs without compromising from the quality of healthcare (Marshall & Øvretveit, 2011).

Table 3.
The areas which requires improvement with their examples

Category	Specific areas	Examples, where available, claimed value of interventions or examples of possible savings
Improved commissioning	Better prioritization of what will be purchased and improved selection of patient for interventions Reduced unplanned admissions Promoting self-care and case management	5-7% reduction in NHS spend in 2013/2014 in comparison with 2008/2009
Better organizational business processes	Better use of estates	%20 reduction in estate costs, realizing approximately £500 m/year
	Sharing of business services to reduce support costs	20-30% lower costs for same level of service
	Better procurement	There is a 100% variation between the highest and lowest prices paid for common items
	Staff productivity	Nurses in the UK spend about half as much time in direct patient contact as their US counterparts

	Sickness absence	Up to 40% reductions in sickness absence have been achieved by some organizations
	Skill mix	Costs could be reduced by 8% by adjusting skill mix of service line staff
Better clinical business process	Implementation of NHS Institute's productive ward series	£1300m saving
	Reduced length of stay	£1230m saving
	Reduced new to follow-up ratios for outpatients	£249m saving
	Reduced Did Not Arrive rates	£207m saving
	Reduced readmission rates	£108 m saving
	Better management of leg ulcers	£1050 m saving
Improved quality of patient care	Reduced Health Care Acquired Infections	£1000 m saving
	Reduced drug errors	£750 m saving
	Implementation of NICE guidelines	£600 m saving
	Improved nutritional care	£130 m saving
	Better management of patients with diabetes when in hospital	£105 m saving

Source: Marshall, M., & Øvretveit, J. (2011). Can We Save Money by Improving Quality?. *BMJ Quality & Safety*, BJM-2010.

As seen in the table above, remaining be healthy seem exact solution to reduce the costs. In addition, long length stay and Health Care Acquired Infections are interrelated in context of both services quality and reducing costs. Because, when an inpatient stayed long time in any hospital, the risk of Health Care Acquired Infections increases. So, while treatment costs increases, quality of patient care decreases because of it. Eradication of Health Care Acquired Infections in any hospital is quite difficult and costly. We must take into consideration that realizing expenses to get quality improvements (spending cost) doesn't always present desired results in context of increasing cost. Also, desired results wouldn't get in near future. Because quality improvements require investments moneywise. Therefore, it is important to invest in the right areas which ensure both quality improvement and reducing costs for the future in this regard. As it is known that the providers are responsible for ensuring it. From this point, there are some overall steps to initiate the change which ensures reducing costs by improving quality. So, generally all successful changes need selecting accurate solution, implementation accurate method and attention to people aspects. Accordingly, relative overall steps are as the following (Øvretveit, 2012);

1. Selecting accurate solutions which have been proven when compared with similar services.
2. Staying in touch with health staff neutrally to determine the negative and positive sides of the solution for the implementers
3. Verifying the solution by comparing poor quality cost and the spending cost financially before the implementation
4. Adapting the solution using the accurate methods and others' expertise and experience
5. Measuring and monitoring progress after the implementation
6. Taking support from others for removing external obstacles to build improvement capacity

The most important step maybe is selecting the appropriate solution. For this, some suggestions which specify quality deficiencies from both patients and health staff side should be listed. These patient complaints or health staff report related to their work is used for determining how the problem affects to the stakeholders as severity. Then, according to the prepared list, other list is generated by determining the wasted time and resources as money because of them. Even though some problems might be critical; most affected to stakeholders and costly, there is another step to accurate solution. That is, poor quality cost and the spending cost must be compared financially. From this point, it is analyzed whether the spending cost is worth for quality improvement related to the solution.

In literature, it is named as cost-effectiveness analyze. So, another list is generated from this respective and an attachment which shows what resources as personnel, money, equipment needed is added to the last list (Øvretveit, 2012).

With all that, there are some obstacles stalling the improvements. Although they may be categorized under some subject headings, can be summarized shortly. Lacks of service information to specify and prioritize, of information about effectiveness in context of economic analyses to enable quality work are some arising information. Also, uncertainty and skepticism about spending time and source in context to the success diminish level of motivation for improvement generating the innovation (Øvretveit, 2012).

Although there are some negative factors stopping the improvements, there are also some positive factors which can enable the change for innovation. One of those is strong leadership that has awareness of the importance of the gains that would get. At the same time, it is important that the existence of senior management which knows the difficulties of change and steers their team for implementation. Other important point is to train health staff about quality and improvement tools which would raise consciousness to the change. Also, it is necessary to reconcile the conflicts among healthcare services (Walley et al, 2006).

The Role of Healthcare Workers on Innovation

The most important role in creating innovation surely is on healthcare workers/health staff. Specially, frontline health workers who communicate with patients firstly when they come to any healthcare organization are critical for transmitting a lot of information which can be used for determining innovation aspects. Because, they generally take responsibility many main jobs of the organization. In this respect, having creativity of health staff is facilitator for both the patients and themselves.

Commonly, it is seen that creativity is described as generating original and unique ideas or solutions on behalf of both patients and health organizations (To et al, 2012). As known, whereas creativity is the generation of novel and useful ideas, innovation is the implementation of the ideas (Man, 2001). Besides, generated ideas must be useful. But, notion of usefulness cause the conflict of interest between different stakeholders of the organization. For example; while any generated ideas or solutions from top management of a for-profit hospital to increase profitability might be so useful in context of creativeness for innovation, it can might a burden for frontline health worker or patients (George, 2007). In this respect, enforcing health staff to be creative can be possible when they feel and know that it is necessary for both themselves in terms of their economic or carrier gains and the organization' success. When generally examined, it is known that job complexity, relationship with supervisors and co-workers, rewards, time deadlines and goals, spatial configuration of work settings are determinative factors for creativity resulting in innovation (Shall et al, 2004). For example, according to a study which carried out by Aiello et al; individuals working in low spatial density areas exhibited higher performance on a creativity task than individuals in higher density areas (Aiello et al, 1977). Similarly, according to a study conducted by Tierney et al; even if workers have ability to be creative at work, they need to encourage from their supervisors by assigning to appropriate jobs for innovation (Tierney et al, 1999). The communication between health workers and their supervisors matter in defining the true worker to true job for innovation. From this point, trait activation theory presents more expositional approach in context of creative for innovation. According to trait activation, individual' predispositions towards their jobs affect revealing the creativity with organization structure simultaneously. (To et al, 2012) Thus, health staff needs to declare their propensities' freely. So, receiving positive feedback from their supervisors or co-workers which creates social appreciation and having flexibility on the work reinforce affirmative organization structure (Zhou & Goerge, 2001). Another factor affecting the workers' creativity is to reward. In literature, it is generally defined as extrinsic rewards. It is commonly accepted that when workers have autonomy, extrinsic rewards can enhance the intrinsic motivation ensuring for innovations (Malik et al, 2015). Creativity in the nursing care having pivot role in delivering healthcare for credibility of any healthcare organization can have more effective results. It is seen that nurses' creative activities ensure improvements in quality of care (Isfahani et al, 2015a). In this respect, even though behavioral treats and collective mindset may be obstacle to creativity for innovation, leadership and technology which can be never substituted instead of nurses may be helpful tools for it (Hughes, 2006).

The real problem is generating the environment which gives a chance in creating new ideas for realizing innovations in health organizations. It can be benchmarked from Total Quality Management System for solving that problem in particular from Toyota Experiences. Toyota Company developed quick feedback system for all its workers to get original ideas which can be harnessed. Ideas were collected through supervisory channels, 'scratch sheet' on walls or quality control circles. The name of the feedback system which stimulates the 'feeling of involvement' was 'Individual Quality and Productivity Program'. In compliance with this program, all workers had a quota and a date to fill their slot on the board to express their ideas. Also, all workers must implement their idea and specify the gains from it in context of saving, impacts on external or internal customers. Many ideas don't require money to implement (Godfrey, 2003). Similarly, Toyota Company was aware that the idea which was handy for company wouldn't come up with itself. Thus, training the workers for creativity took an important place. Within this scope, the seminars had been conducted

to teach some techniques which was known as quality tools like brainstorming to workers for revealing their creativity (Godfrey, 2003). As seen, Toyota Company has established the essential environment to the creativity of worker for innovation.

The example of Toyota gives us that revealing the creativity of workers is possible. We can adopt similar methods in order to reflect the creativity of works on innovation. One who knows the doing best is the one who carry out. So, the improvement areas would be determined by surely health workers easily. For example, even though it is useless, supporting a nurse creating a robot for pulling the patient's legs during the orthopedic surgery by encouraging might create many health workers having patent (Isfahani et al, 2015b).

Enhancing Leadership and Engagement for Organizational Performance

The term of employee engagement have been studying for years. When considered in context of fulfilling of health works role on innovation, engagement becomes surely very important issue. It is possible to describe the employee engagement. According to Perrin, employee engagement is a model which consists of 'Think', 'Feel' and 'Act' sectors. Think sector points out that rational understanding of the organization's strategic goals, values and their 'fit' within it. Feel sector also points out that an emotional approach or an attitude of the worker to them. Finally, act sector points out that a willingness of the worker to do more than the minimum effort in their role. It has a motivational feature. Besides, employee engagement has impact on financial performance of the organizations. According to a study involved fifty multinational companies, companies with high levels of employee engagement outperformed those with less engaged employees in operating income, net income growth and earnings per share as financial performance. At the same time, it is known that there is a correlation between improvements in employee engagement and customer satisfaction (Perrin, 2009).

Employee engagement has effects on many dimensions of organizations. When engagement begins to decline, it seen that a remarkable drop in productivity, lower customer services and more absenteeism and turnover are observed. Therefore; sustainable engagement is required. From this point there are some suggestions in different areas for enhancing employee engagement (Watson, 2012).

Table 4.
Priority Areas of Focus on Behaviors and Actions that Matter to Employees

Leadership	**Stress, balance and workload**
Is effective at growing the business **Shows sincere interest in employees' well-being Behaves consistently with the organization's core values** **Earns employees' trust and confidence**	Manageable stress levels at work A healthy balance between work and personal life Enough employees in the group to do the job right Flexible work arrangements
Goals and objectives	**Supervisors**
Employees understand **The organization's business goals** **Steps they need to take to reach those goals How their job contributes to achieving goals**	Assign tasks suited to employees' skills Act in ways consistent with their words Coach employees to improve performance Treat employees with respect
Organization's Image	
Highly regarded by the general public **Displays honesty and integrity in business activities**	

Source: Watson, T. (2012). Global Workforce Study. *Engagement at Risk: Driving Strong Performance in a Volatile Global Environment.*

The level of employee engagement in healthcare organization has been measuring through some developed scales like Cornerstone survey. Generally, Cronbach Alfa Coefficient values can vary from 0,70 to 0,93 (Spurgeon, 2012; Cornerstone OnDemand, 2014). For example, according to Cornerstone OnDemand's research, it is dawned on that 49% of health workers aren't fully engaged and the change is a treat for it. Also, workload is an obstacle for employee engagement (Cornerstone OnDemand, 2014). But, it is possible to increase level of engagement in health organizations. Everything for engagement starts with senior management's leadership. When tackled the notion of employee engagement in context of leadership, it is seen that there is a connection between leadership and employee engagement. It is known that when a leader demonstrates emotional support and recognition for employee suggestions to the organization contribute to employee engagement (Moss, 2009). For example, according to a study conducted in Tilburg University, it is confirmed that there is a correlation between transformational leadership and innovative work behavior of workers statistically. We can see some examples of leadership in the field; MD, Chair of the Department of Medicine at the Hospital of the University of Pennsylvania in Philadelphia Richard Shannon, got ahead improvements in hospital-acquired infections which saved 57 lives by supporting physicians, pharmacists, nurses systematically (Martin et al, 2009). Also, perceived organizational support effects innovative work behavior with self-efficacy according to the study (Kroes, 2015). Then, developing mutual trust and respect health staff and managers is next step. From this point, sincere and transparent communication for overcoming some problems related to the change. The next is also encouraging health staff to take the responsibility which they may specify. Later on, empowerment of health staff gains importance (Atkinson, 2011). Specially, coming together within the scope of the common purposes among health staff, realized empowerment through training for the issues which they don't know well would enhance the communication and awareness of being a team in context of adoption the organization. Thus, possible conflict of interest among healthcare services could be minimized. The team spirit would also create organizational image towards the stakeholders outside the health organization. In this way, organization's core values could be adopted easily. Charging a health worker who adopts the core values of organization would get easy within the scope of a project. We know that healthcare organizations work on project basis. Each project is any patient receiving healthcare. For example, the health workers who meet up in the operating room from different branch of medicine to execute an operation bring about a team for the patient (a project). But, the team could change based on any patient who require different treatment. From this point, empowered health workers could warn each other to hinder undesired medical errors unfortunately in this way. Specially, doctors are natural leaders among health staff. Because, the progress of treatment and examination are shaped by doctors' medical decisions and other health workers act in accordance with them. To show effective leadership doctors need to train in order to obtain information which is outside medicine. Accordingly, the American Hospital Association (AHA) published a skillsets developing leadership of doctors. Relative training areas are as follows (Combes & Arespacochaga, 2012):

Table 5.
Training areas for doctors

Leadership training
Systems theory and analysis
Use of information technology
Cross-disciplinary training/multidisciplinary teams
Understanding and respecting the skills of other practitioners
Additional education around Population
health management Palliative care/end-
of-life
Resource management/medical economics Health
policy and regulation
Interpersonal and communication skills
Less ‘captain of the ship’ and more ‘member/leader of the team’
Empathy/customer service
Time management
Conflict management/performance feedback Understanding of
cultural and economic diversity Emotional intelligence

Source: Combes J.R. and Arespacochaga E., (2012). *Lifelong Learning Physician Competency Development.* American Hospital Association’s Physician Leadership Forum, Chicago, IL

Conclusion

As seen, there are many areas which need to be improved for both patients and health organizations’ performance. When it is considered that future healthcare organization can put these improvements which ensure innovation would create more quality services and solution oriented healthcare organizations for sustainability.

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