Quality Management Review

A Case Study of the Application of the Glykas Quality Implementation Compass

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Abstract—The purpose of this paper is to examine the application of quality management systems in the health care sector in the UAE. We introduce the Glykas Quality Compass (GQC) that maps all quality initiatives in an organization and provides a classification of implementation initiatives in four main categories: philosophies, standards, methodologies and excellence awards. We also examine and analyze the use of quality concepts and principles of GQC in the health care sector in the UAE via a case study in Mafraq Hospital and the wider Ambulatory Health Services (AHS) establishment of Abu Dhabi also known as SEHA.

Keywords—Glykas Quality Compass, Quality Management, Quality Standards, Healthcare Sector, Process Management, Quality Management Review, Six Sigma, EFQM, Baldrige Award.

I. The Glykas Quality Compass for Quality Implementation

There are several definitions of quality especially when business or management is involved; however its main purpose leads to fulfillment of customer needs and continuous improvement. Quality has become an important part of every organization and would remain essential since it supports to enhance customer satisfaction and company’s performance in order to achieve better results compared to competitors. We cover the state of the art of quality management by describing its recent contributions through the four categories such as philosophies, frameworks, standards and excellence awards required by the Glykas Quality Compass (GQC) presented below. Additionally, we outline the background of quality management in health care that is supported by a case study that elaborate on the ambulatory health services in the UAE.


The four categories of GQC are: philosophies, frameworks, standards and excellence awards.

Successful implementation of Quality Management is analyzed in GQC through the analysis of ten core quality concepts. The ten quality concepts in GQC are further subdivided into three categories: five core concepts, three intra-core concepts and two auxiliary concepts as described below:

The core concepts are:

1. **Customer focus**: Focusing on the way the product or services are delivered to the customers. Focusing on the customer segment and supporting processes. For example, Quality Function Deployment is a technique for analyzing customer focus.

2. **Human resource management**: It comprises of 4 elements namely performance measurement, training and education, rewards and incentives and career pathing.

3. **Leadership**: It is a soft skill which involves empowering of individuals in an organization. It is very important and deals with how authority and decision making is delegated to the human resources.

4. **Process focus**: Process flow is the sequence of activities. Process management deals with the activities and flow of activities.
5. **Strategic focus**: Deals with developing business objectives and the critical success factors.

The intra-core concepts are:

6. **Performance measurement**: Measurement of the efficiency and effectiveness of all organizational elements namely managerial system, job description, organizational structure and processes-procedures.

7. **Change management**: The management of the change in all organizational elements in a controlled manner.

8. **Continuous improvement**: Using PDCA cycle to continuously improve all elements of the organization.

The auxiliary concepts are:

9. **Information-Knowledge management**: Knowledge comprises of education, experience and training. Knowledge management is serving knowledge, using knowledge to achieve something. It deals with the way knowledge is documented in an organization.

10. **Partnership, Social Responsibility and Stake holders’ value**: Partnership is the relation with the suppliers, subcontractors and outsourcing firms. Social responsibility is the responsibility with all other authorities in the wider community. Stake holder is anybody who has influence or interest in the company functioning.

The above ten concepts are used in all four quality categories (philosophies, methodologies, standards, excellence awards) and follow the PDCA cycle for constant continuous improvement. PDCA is a methodology composed of four phases: Plan, Do, Check, Act, with different techniques used in this type of cycle for the ten aforementioned concepts.

The first two phases (Plan and Do) are the most important during quality management implementation. The Plan phase is considered with the design of all organizational elements that will support and control the implementation during the Do phase by utilizing all organizational resources.

The organizational elements we are concerned with in the Plan Phase in GQC are: Processes, Organizational Structure, Job Descriptions, and Managerial Systems. The organizational resources we concentrate on at GQC in the Do Phase are: Land and Buildings, Equipment, Human Resources, Material and Inventories, Cash-Money, Information Systems. Both organizational elements and organizational resources can be utilized in all four quality categories apply to different quality concepts. A table depicting the GQC is presented below:

<table>
<thead>
<tr>
<th>GQC Category: Quality Management Philosophies</th>
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<tr>
<td>Philosophy (Philosophy – the definition of philosophy from THE FREE Dictionary, Encyclopedia and Thesaurus. Available from: <a href="http://www.thefreedictionary.com/philosophy">http://www.thefreedictionary.com/philosophy</a>. [24/09/2019]) is “the academic discipline concerned with making explicit the nature and significance of ordinary and scientific beliefs and investigating the intelligibility of concepts by means of rational argument concerning their presuppositions, implications, and interrelationships; in particular, the rational investigation of the nature and structure of reality (metaphysics), the resources and limits of knowledge (epistemology), the principles and import of moral</td>
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judgment (ethics), and the relationship between language and reality (semantics)."

Leadership and its management has played an imperative role in most organizations for decades. By the end of Second World War (Quality Management Article from Wikipedia, The Free Encyclopedia. Available from http://en.wikipedia.org/wiki/Quality_management. [24/09/ 2019]), Japan made every effort and any possible investment to be best in quality management. In the country's early initiatives they required help of the earliest founders of quality such as: Walter Shewhart, W. Edwards Deming and Joseph Juran, amongst others. These are considered as quality “gurus” who researched the subject and provided its initial concepts, methodologies and standards. In the next sections we will present the three most prominent quality gurus who become known for their remarkable contribution to quality: Deming, Ishikawa and Shingo.

W. Edwards Deming

Deming advocated that all managers must have implemented a quality system with widespread employee involvement, which is called ‘System of Profound Knowledge’. This system is composed of four essential components, namely: appreciation of a system; knowledge of variation; theory of knowledge; and knowledge of Psychology. He further linked these four components to his 14 points of management in industry and advocated that: “One need not be eminent in any part nor in all four parts in order to understand and to apply it. The 14 points of management in industry, education, and government follow naturally as application of this outside knowledge, for transformation from the present style of Western management to one of optimization.” (W. Edwards Deming Article from Wikipedia, The Free Encyclopedia. Available from http://en.wikipedia.org/wiki/W._Edwards_Deming. [24/09/ 2019])

Deming 14 points (Cohen, Phil, Deming’s 14 points. Available from http://www.hci.com.au/hcisite2/articles/deming.htm. [24/09/ 2019]) can be considered as a set of guidelines for achieving organizational goals and objectives. These points highlight the importance and of continuously creating and assessing organizational goals in order to achieve continuous improvement.

These 14 points (as illustrated below Deming's 14 points. Available from http://2.bp.blogspot.com/-oA88yzeYSo/TSTyZarUC4I/AAAAAAAAAYs/f-9DNyXhR6I/s1600/Deming%2527s+14+Points.jpg [24/09/ 2019]) also can be considered as a roadmap on how an organization can achieve and improve quality via standardized processes in each and every part of organization focused on the principles of quality control leadership etc.

![Deming's 14 Points](http://en.wikipedia.org/wiki/W._Edwards_Deming)

**Figure 1: Demings 14 points.**


Deming's advocacies of the Plan-Do-Check-Act cycle, his 14 Points and Seven Deadly Diseases have had tremendous influence not only in manufacturing and have also been applied in other areas, such as business process management and in relatively new fields such as sales process engineering.” (W. Edwards Deming Article from Wikipedia, The Free Encyclopedia. Available from http://en.wikipedia.org/wiki/W._Edwards_Deming. [24/09/ 2019])

Kaoru Ishikawa
Kaoru Ishikawa is a Japanese professor who contributed extensively in the application of quality systems in Japan. He introduced the concept of **Quality circles** and the well known Ishikawa diagram also known as the ‘cause and effect model’ and the **Fishbone model**. His model is included in the seven fundamental tools of quality. Below is an example of cause and effect diagram. (Easy Fishbone Diagrams. Available from...
Ishinawa advocated that all organizations should be simple and straightforward; hence a user-friendly system of quality control must be developed. He also introduced and focused the concept of internal customer, unknown and innovative in his era.

Shingo Shingo

Shingo Shingo was an engineer who modernized the Toyota and the car production sector via the use of innovative control practices that later had a major impact on the western production industry. He introduced the ‘just in time’ concept which was later involved in the ‘Single Minute Exchange of Die’ (SMED) system. (SMED; Shigeo Shingo’s Single Minute Exchange of Die. Available from http://leanman.hubpages.com/hub/SMED [24/09/2019])

SMED system principles focus on set-up time reduction and reduced response times to production plans, supply chain plans and customer needs. As an extension and supplement to the SMED system Shingo introduced the POKA-YOKE system, also known as the mistake proofing system. (Poka Yoke (Mistake Proofing). Available from http://www.siliconfareast.com/pokayoke.htm [24/09/2019])

Utah University as a tribute to Shingo’s contribution to quality management systems introduced “The Shingo Prize” (Poka Yoke (Mistake Proofing). Available from http://www.siliconfareast.com/pokayoke.htm [24/09/2019]). This excellence award aims to boost high class manufacturing techniques and is awarded to companies who achieve outstanding business results in customer satisfaction.

GQC Category: Methodologies

A methodology is defined as a “real or conceptual structure intended to serve as a support or guide for the building or something that expands the structure into something useful.” (Framework – the definition of framework from WhatIs.com. Available from http://whatis.techtarget.com/definition/framework [24/09/ 2019].)

In this section we introduce the GQC quality management methodologies or frameworks used for quality management-improvement: the PDCA cycle, the EFQM model and Six Sigma.

The PDCA for Continuous Improvement

The Plan – Do – Check – Act (PDCA) cycle is also known as Deming cycle and Shewhart cycle. It is the most well known methodology for continuous quality improvement and is used in quality management with its variations: DMAIC and DMADV used in Six Sigma and explained bellow (Continuous Quality Improvement through PDCA and DMAIC Cycles. Available from http://leanman.hubpages.com/hub/Continuous-Quality-Improvement-through-PDCA-and-DMAIC# [24/09/2019])

European Foundation for Quality Management

EFQM (The EFQM Excellence Model. Available from: http://www.efqm.org/en/tabid/132/default.aspx.) is identified as a framework, which also known as European Foundation for Quality Management that can be operated as a diagnostic tool in order to attain excellence in a business. EFQM is a non-profit association that was established in 1998.

The EFQM Excellence model has provided three major contributions to quality management: “the fundamental concepts”; “the nine criteria”; and “the RADAR logic”. The fundamental concepts is a set of essential concepts that support the EFQM excellence model. They focus on the ‘what’ and not ‘how’ the organization quality management should be designed and implemented in an organization.

The EFQM model is based on nine criteria that should be measured and analyzed by an organization in order to measure performance. The nine criteria are divided into five “enablers” that focus on resources used for the achievement of the four “results” criteria as presented in the picture bellow:
For the implementation of the nine criteria presented in the picture above, EFQM has introduced an implementation methodology called RADAR logic. RADAR is defined as “a dynamic assessment framework and powerful management tool that provides a structured approach to questioning the performance of an organization.” RADAR stands for Results-Approach-Deploy-Assess-Refine, and is based on the PDCA methodology and is presented in the figure below:

**Figure 4: EFQM Model**

Six Sigma

### The DMAIC (Define, Measure, Analyze, Improve and Control) Improvement Cycle


**Figure 5: The RADAR Methodology**

**Figure 6: DMAIC Methodology**

**Define**
Refers to defining the goals of the project. The purpose of this step is to articulate the business problem, goal, potential resources, project scope and high-level project timeline. The objective is to ensure that the customer demand and the strategic goals of the organization are aligned. Normally, businesses are designing a roadmap to accomplish the targets and goals of the organization.

**Measure**
The aim is to objectively launch improvement baselines and initiatives. Performance measurement and management techniques are utilized for assessing business performance.

**Analyze**
The purpose of this step is to identify, validate and select root causes for elimination. This phase is extremely significant in order to establish any inconsistency that may occur between business goals and organizational performance. Analysis techniques are used for the identification bottlenecks, cycle time problems, process or output defects etc.

**Improve**
The purpose is to identify, test and implement improvement initiatives. The use of brainstorming and techniques like ‘Six Thinking Hats’ and ‘Random Word’ could contribute in identifying creative solutions to get rid of the key root causes of process problems. Project planning and management of various implementation initiatives are designed.

**Control**
Implementation of project plans designed in the previous phase takes place in a a synchronous mode. Improvements are monitored and controlled to ensure sustainable success. During this phase we create a control plan via which we achieve proper versioning of update documents, business processes and training records.
DMADV (Define-Measure-Analyze-Design-Verify) OR DFSS (Design for Six Sigma)

It follows a similar approach to DMAIC as explained above. Its five improvement phases are illustrated below. (Design for Six Sigma - Symbol Business Improvement. Available from http://www.symbolbv.com/en/design-for-six-sigma.html [24/09/2019].)  

![Design for Six Sigma: DMADV roadmap](image)

**Figure 7: DMADV Methodology**

**Lean Six Sigma**

An extension of DMAIC and DMADV is Lean six sigma (Lean Six Sigma – the definition from Wikipedia, the free encyclopedia. Available from http://en.wikipedia.org/wiki/Lean_Six_Sigma [24/09/2019]) a methodology-framework that aims in minimizing waste and idle time in the service provision, production and supply chain while providing flawless goods and services. The methodology has introduced the “seven wastes” that need to be eliminated in an organization in order to achieve Lean Six Sigma: transportation, inventory, motion, waiting, overproduction, under processing, and defects. The definition of these seven wastes are shown in the picture below:

![The Seven Wastes of Lean Six Sigma](image)

**Figure 8: The Seven Wastes of Lean Six Sigma**

**GQC Category: Quality Standards**

A standard is (ISO - International Organization for Standardization. Available from http://www.iso.org/iso/home.html. [24/09/2019].) “a document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose.” The most well known quality standard is the International Organization for Standardization (ISO). It sets quality standards that a company should meet in order to be certified as compliant with international standards of quality. A company acquires ISO certification after rigorous assessment by ISO assessors. There are a large set of ISO standards, each evaluating companies operating in sectors or markets. (ISO - International Organization for Standardization. Available from http://www.iso.org/iso/home.html. [24/09/2019].)

ISO 9000 outlines the standard that (Hoyle, 2003). ISO 9001 is concerned with processes and managerial systems that should be in place to ensure quality in daily company operations and is the most well known in industry. Quality control and quality conformance points and processes should be in place before certification as well as proper versioning and continuous improvement procedures. ISO 14001 focuses on environmental management systems. Its aim is to enable an organization adhere to environmental legal requirements, processes and systems. This certification applies to organizations that are willing to implement, improve, as well as maintain environmental management systems. An organization has to be self-determined in order to assure conformity with the standards that are outlined in the environmental policy.

The ISO 18001 OHSAC focuses on management systems that ensure health and safety in an organization. It gives guidelines on how an organization should minimize health and safety hazards for its employees. It also follows legal requirements that ensure that workplaces are safe and free of any possible hazard risks.

**GQC Category: Excellence Awards**

Excellence awards are prizes that are awarded to companies that have achieved outstanding performance in quality management as a recognition of achieving excellence in its internal processes and systems and in providing quality products and services. The award may also be awarded to a company for its outstanding role in upholding practices that promote environmental sustainability. Some of the renowned excellence awards across global economic regions are discussed below.

**Malcolm Baldrige National Quality Award**


The award was named after Malcolm Baldrige a “guru” of quality management who worked as the Secretary of the ‘U. S. Department of Commerce’ from 1981 to 1987. The prize was established in 1987 through the Malcolm Baldrige National Quality Improvement Act of 1987. The award is managed by the Baldrige Performance Excellence Program. This is a program that was formulated by the ‘U. S. Department of Commerce’ and is supervised by the ‘National Institute of Standards and Technology’.
Canadian Award for Business Excellence

The award was established in 1992 by the Canadian government. This award was formed as a partnership between organizations in the private sector and government. Canada was in the streak of losing its competitiveness in the international market at the time the award was created. There had to be measures in place to energize the private sector and the nation to regain its competitiveness and the potential for economic improvement. As a consequence, the ‘Canadian Award for Business Excellence’ focused on the major objective of re-instituting quality management and quality performance in both the private and the public sector. The award is awarded to any organization, regardless of the size or the industry in which the organization operates in. (Davidson, E., 2001, ‘Who’s who in Canadian business’, 21st Ed., University of Toronto Press, Canada) The organization achieving the award is reassessed on an annual basis. According to Davidson (Davidson, E., 2001, ‘Who’s who in Canadian business’, 21st Ed., University of Toronto Press, Canada), the criterion for evaluating the companies to be awarded is based on the performance assessment categories that are outlined by the National Quality Institute (NQI). (Canadian Framework for Business Excellence. Available from http://www.nqi.ca/en/knowledge-centre/products-and-tools/canadian-framework-for-business-excellence2 [24/09/2019])

Figure 11: Canadian Excellence Award

The award has been very effective in reviving the economy of Canada with the introduction of the ‘Progressive Excellence Programs (PEP)’ initiative. It has also created, the “Healthy Workplace Program” aiming at improving working conditions in companies as better working conditions in an organization increase employee motivation and their productivity. Canadian organizations have been able to access benchmarking case studies as well as excellence programs and has a positive implication and has led to the revival of the Canadian economy.

Australian Business Excellence Award

This is an award for Australian companies (Australian Business Excellence Awards. Available from http://www.saiaglobal.com/Improve/Awards/BEA_Overview.htm [24/09/2019]) was established twenty years after the Malcolm Baldrige National Quality Award. The award was established in 1992 by the Australian government. The award is a partnership between organizations in the private sector and government. The award is awarded to any organization, regardless of the size or the industry in which the organization operates in. (Kanji, G & Asher, M., 1996, ‘100 methods for quality management’, Sage Publications, London) The award has been very influential to Australian organizations.

Figure 10: The EFQM Excellence Award

Organizations are required to establish managerial systems that measure, analyze and continuously improve employees, processes and quality systems in a continuous manner regardless of the size of the organization, its structure or even the industry in which it operates. (Kanji, G & Asher, M., 1996, ‘100 methods for quality management’, Sage Publications, London) The award has been very influential to European organizations.

European Quality Award (EFQM)

This is an award that was established in 1992 in Europe at the ‘European Foundation for Quality Management’. There was a change of its name from ‘European Quality Award’ to ‘EFQM Excellence Award’ in 2010.

The Deming prize

It was established in 1950 as a tribute to the work of W. Edwards Deming and is awarded to both companies and individuals who have been influential and/or contributed to the advancement of quality management and encourages organizations and individuals to undertake any efforts necessary in achieving exceptional performance.

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Innovation facilitates customer satisfaction and increases the competitiveness of an organization. For a company to qualify for the award, it has to demonstrate quality in both products and services offered to customers. The firm must be a leading company and usually could be considered as a best practice to others. (Friesen, M & Johnson, J., 1995, ‘The success paradigm: Creating organizational effectiveness through quality and strategy’, Quorum Publishers, Westport, CT) The company should also be result-oriented and show proof of the results it has achieved in the financial year in question. This award has helped in improving the quality of Australian companies and making them competitive in the global market.

**The Quality Award of China**

The China Quality Award (Friesen, M & Johnson, J., 1995, ‘The success paradigm: Creating organizational effectiveness through quality and strategy’, Quorum Publishers, Westport, CT) was established in 2001. The award aimed at stimulating business in China and setting criteria for assessment of their international expansion (Friesen, M & Johnson, J., 1995, ‘The success paradigm: Creating organizational effectiveness through quality and strategy’, Quorum Publishers, Westport, CT). Awarded organizations are amongst today's top companies in China that have a significant effect on the country's economy and in some cases on the international markets.

**The Dubai Quality Award**

This award is related to companies in Dubai (Mortimer, D. & Mortimer, S., 2004, ‘Quality and risk management in the IVF laboratory’, Cambridge University Press, New York, NY). The award was established in 1994 by ‘Dubai’s Department of Economic Development’. Recipients of the award are organization whose performance is influential to other companies within the Dubai. The Dubai Quality Award is an award that gives directions to organizations on how to excel by adopting good practices and embracing approaches that have the ability to improve their performance. The desired direction organizations are expected to follow is that of being competitive within the country and internationally (Mortimer, D. & Mortimer, S., 2004, ‘Quality and risk management in the IVF laboratory’, Cambridge University Press, New York, NY).

**Sheikh Khalifa Quality Award**

This is an award that was formed to assess and award exceptional performance of companies in the Abu Dhabi region by the government of the United Arab Emirates (UAE) (Sheikha Khalifa Excellence Award. Available from http://www.teraquality.com/awards/regional/903-sheikh-khalifa-excellence-award.html [24/09/2019]). Organizations in the UAE have recognized the need for quality management in order to become competitive. Any organization that demonstrates a high level of performance in Abu Dhabi and shows consistency in improvement is rewarded with this award. The award is known for providing a roadmap through which an organization can achieve success. It also offers a benchmark on which organizations can assess their performance against companies that have excelled in Europe and the rest of the world. Organizations in Abu Dhabi have improved in terms of domestic and international competition since the award was established.
III. GQC in Health Care

Health care services are vital for any society that aims to deliver proper patient care. Proper care is achieved by minimizing the occurrence of malpractice via continuous monitoring, assessment and improvement. Legislative frameworks and standards concerning all aspects of health care services are in place that cater for the safety and the well being of the patient, and put in place a comprehensive system that covers all aspects related to medical care and professional ethics. The standards require a complete assessment to health institutions and assess which ones are following the best quality care methods. Furthermore, medical practice codes have been implemented in various countries such as Denmark, United States, Australia and other countries such as the Gulf States. Moreover, the overgrowing medical service concerns led to the creation of several institutions dedicated to medical standards, a very good example is the joint commission international also known as the JCI to assure the implementation of medical standards in the institutions that are being assessed. Via JCI standards medical institutions are assessed in indicators in which the patients determine whether they are satisfied or dissatisfied about the medical services offered, in which areas the medical institution did the best and in which areas the medical institution failed to deliver the best possible care.

Patient satisfaction levels provide measures of a medical institution’s success to meet customer needs and expectations and a good feedback about its ability to fulfill the role as a proper medical care provider in the community. There are many reasons that make medical institutions to access their services. The most important reason is that care is related to tax payers money and governments are concerned in providing decent medical services. In a similar way care is related to private insurance companies as they pay the medical care provided to their customers. In addition, the high cost of compensation in cases of malpractice / mistreatment of a patient led in JCI focusing on improving health care outcomes and procedures.

Patient satisfaction is related to patient expectations and patient conditions in about health care services; age, which implies that adult patients give a better feedback of the level of medical care; nature of the disease, where patients with complicated diseases often give dissatisfied feedbacks because they require much attention; past experience of the patient, where the patient will compare the level of the service in the past vs. the present; and sex or race where patients from different genders or races give mixed views about the medical care given to them.

Quality Management in Health care: A review of Health Care standards

Health care services affect directly human lives and thus health care providers need standardization of their processes in order to achieve quality service provision to their patients in a consistent manner.

The American College of Surgeons (ACS) was the first hospital that established standards (Roberts, J. Coale, J. and Redman, R., 1987, ‘A history of the Joint Commission on Accreditation of Hospitals’,...
The overall expenditure on health care in the UAE haw exceeded 45 billion dirham's in 2018. The numbers of hospitals in the country dramatically increased from only 7 hospitals back in 1971 to 92 public hospitals and more than 246 health care centers.

The UAE applies a compulsory health insurance to provide comprehensive health care to the citizens and residents of the state with the cost generally imposed on their employers. Regardless of their employer being in the government or the private sector, employers are responsible for ensuring the provision of health insurance cards for expatriate employees as a mandatory condition to provide them with residence visas in the country.

Health strategies in the UAE

The Abu Dhabi Ambulatory Health Services (AHS) aims at developing comprehensive national programs to combat infectious diseases and other emerging diseases (Ambulatory health services-http://www.AHS/homepage [24/09/ 2019].) The AHS has set four main objectives in its 2013 to 2025 strategy: achieving prevention and awareness, providing comprehensive service, efficiency and investment in competitiveness, and assuring maximum quality standards applied throughout in the emirate of Abu Dhabi. AHS identified 17 operational goals and 43 initiatives to implement these objectives backed by a plan to monitor the performance indicators.

Health care related standards - JCI

The most well known International Health Care Standards were developed by the Joint Commission International (JCI) (Joint Commission – A definition from Wikipedia, the free dictionary. Available from http://en.wikipedia.org/wiki/Joinmt_Commission [24/09/ 2019]). They were formerly known as Joint Commission on Accreditation of Health care Organizations (JCAHO) standards. JCI has developed a network of Regional Advisory Councils that are based in various parts of the world including the Middle East, most regions in Asia Pacific, Africa, Europe and the Americas.

Accreditation is defined as a (Joint Commission International. Available from http://www.jointcommissioninternational.org [24/09/ 2019]) “process in which an entity, separate and distinct from the health care organization, usually non-governmental, assesses the health care organization to determine if it meets a set of requirements (standards) designed to improve the safety and quality of care”. The aim of JC standards is to continuously enhance the safety and quality of patient care, to consistently guarantee a safe care environment, and
to continually eliminate the level of risks to all patients and personnel (JCI Accreditation. Available from http://www.wooridul.com/About/jci.jsp [24/09/ 2019]).

JCI has created a series of standards and accreditation programs specifically for health care services such as: “Hospitals" Ambulatory health institutions", “Clinical Laboratory", “Primary Care Centers” and “Medical Transport”. It has also created programs for clinical care certification like stroke treatment and care, cardiac care, joint replacement care etc. (JCI Accreditation. Available from http://www.wooridul.com/About/jci.jsp [24/09/ 2019]).


User experience for JCI benefits include: “providing competitive advantage”; “strengthening community confidence”; “assistant
recognition from insurers”; “validating quality care to
individuals”; “helping the organization to organize and
strengthen their improvement efforts”; “enhancing staff
education”; “improving risk management”; “facilitating
staff recruitment”; and “promoting team building skills
for staff”.

Ambulatory Health Services Awards and Accreditation.

Ambulatory health services (Ambulatory health services- http://www.AHS/homepage [24/09/ 2019])
is considered by the Abu Dhabi health Services
Company (SEHA) to be the most important
establishment in preventing, diagnosing and curing
the society. It started operating in 2008 providing
facilities and care centers in Abu Dhabi with clinics
incorporating family medicine, obstetrics, pediatrics,
and health screening services.

Staffed with the best health specialists and
physicians, Ambulatory Health Services have
launched a series of programs. A notable example is
the ambulatory health service Kafu program called as
– “We Care” that has appointed a large number
of employees as “Customer Service Ambassadors”
showing the program dedication to client
service excellence -a devotion that has been
compensated with widespread industry recognition.

In 2012, the Ambulatory Health Service (AHS)
became the first medical services establishment in the
UAE to be awarded with the Diamond Sheikh
Khalifa Excellence Award (SKEA). The same year it
was also distinguished by SEHA as the best
organization in organizational transformation in the
implementation of the EFQM Excellence model. AHS
hospitals also earned JCI accreditation in the
medicinal services industry (Sheikha Khalifa
Excellence Award. Available from
http://www.teraquality.com/awards/regional/903-
sheikh-khalifa-excellence-award.html [24/09/ 2019])

Ambulatory Health Services path into accreditation

Two years prior to JCI accreditation AHS started
preparing their organization for their assessment. The
JCI Survey Process Guide and the JCI accreditation
manual for Hospitals were studied and their directions
and recommendations were followed. Selected
employees were designated to go to the Annual JCI
Practicum where they got trained in program
management, benchmarking and the JCI “tracer”
approach. All health professional staff were trained
and assessed in JCI standards via the use of tests,
lead training days with instructive stalls and
incorporating informative content about JCI
arrangements, gauges and necessities. For each JCI
accreditation category a lead employee was assigned
as well as a manager. In top management a board of
JCI guiding trustees was created with support from
executives, managers and key employees.

After the first year a team of three JCI surveyors
comprising of a doctor, nursing officer and overseer
performed an initial JCI assessment of the alignment
of the work performed to JCI principles and
requirements. They questioned key work force and
examined JCI required reports and investigated the
health facility premises and offices. The surveyors met
top management and presented their findings and
recommendations for improvement in the effort of
achieving JCI accreditation. Following these recommendations AHS achieved JCI
accreditation in April 2012.

IV. Application of GQC in AHS at Mafraq Hospital

The major part of the AHS case study was carried out
in Mafraq Hospital is located in Abu Dhabi. it is mainly
responsible for the curative activities of the public
hospitals and clinics of the Emirate of Abu Dhabi. It is
a SKEA award-winning Hospital which is dedicated to
high quality medical care services. In the following
sections we will present the analysis of each GQC
conceptin AHS in Mafraq Hospital.

GQC Concept: Leadership and Strategic Focus in SEHA

SEHA requires documentation of vision, goals,
objectives, mission and values. AHS vision was
documented as: “Ambulatory health services will be
distinguished as the social insurance supplier for
patients, representatives, and medical practitioners”.
The vision is implemented by processes. The AHS
quality proclamation is: “AHS furnish Quality health
awareness with Integrity and Service Excellence in
nature’s turf”.

GQC Elements: Structure and Job Descriptions

The AHS organization chart was reviewed and
modified, jobe descriptions were also amended to be
aligned with SEHA, JCI and SKEA requirements
based on the best practices of health care quality
initiatives.(Merry, M. & Crago, M., 2001 'The Past ,
Present And Future of Health care quality: Urgent
initiatives.(Merry, M. & Crago, M., 2001 'The Past
need for innovative , external review process to
protect patients', Patients and Understanding, p. 32.),
(Donabedian, A., 1966, 'Evaluating the quality of
medical care', Milbank Mem Fund.)

GQC Concept: Leadership

For AHS leadership is engaged in program and
project management and in a continuous interaction
with representatives of stakeholders, society,
customers and, partners. The JCI and SKEA
committees continuously interact with
- health management entities: reviewing key
  performance indicators
- Health regulatory entities.
- patients, families and visitors
- JCI and SKEA assigned staff: CEO, Chief
  medical Officer, Chief nursing staff, patient
affairs manager and other executives who participate in taking care of patients’ complaints and concerns.

- JCI and SKEA assigned staff involved in local, regional or international seminars and awareness campaigns.

**GQC Concept: Change Management**

AHS is an organization that has been through change management initiatives in SEHA, JCI and SKEA. These initiatives are required to be performed in a controlled and holistic manner otherwise outcomes and efforts might prove conflicting and contradictory. A Program Management office was set up to control all change management initiatives based on the GQC concepts. All changes were documented and a solid versioning information system was installed that keeps track of all updates of: processes, organizational structures, job descriptions, managerial systems, performance measurement systems, quality and standards etc. Without this type of system there would be a serious problem in change management.

The Executive council Team meets on periodic basis with SEHA to understand the strategic objectives and changes that they need to implement on and then redirect the message it to the Senior Management and Leadership Council in order to reflect it on the annual Ambulatory health services business and action plan. Examples of internal changes include change in management (new CEO), new programs, structures, and JCI implementation.

**GQC Concept: Strategic Focus**

The AHS vision is created by a common team composed of members of the AHS Executive Team and SEHA senior executives. AHS strategy is focusing on its stakeholders and the fulfillment of their needs and demands. In the strategic plan stakeholders are divided into two categories:

- Primary: Patients, Employees, Visitors, Governmental entities
- Secondary: Media, Competitors, Commercial entities, alluding Doctors

The AHS JCI and SKEA executive team in cooperation with the strategic management department creates and monitors the strategic plan. AHS business objectives should be in alignment with SEHA set external priorities and critical success factors are directly linked to implemented-ongoing projects.

SEHA external priorities are analyzed based on the PEST methodology and are classified to:

- **P** – concentrating on **political** initiatives like: the Abu Dhabi 2030 and SEHA Strategic Plan or **economic** factors like well known UAE Insurance private projects.
- **S** – concentrating on **social** factors related to community awareness that make people more knowledgeable on preventative health projects such as obesity, diabetes, breast cancer screening programs etc.
- **T** – for **technological** factors concentrating on UAE wide health related technological projects

The strategic plan has a five year duration with six monthly assessments and revisions based on five Service Level Agreements (SLA) agreed upon between AHS and: 1-SEHA SLA, 2-Steering Committee SLA, 3-Joint Service Review (JSR) SLA, 4-Hospital Management SLA and 5-. Contract Management Unit (CMU) SLA.

**GQC Concept: People Focus – GQC Organizational Resources: People**

SEHA and AHS follow the requirements of the Abu Dhabi Health Authority (HAAD) which sets the principles and regulations of health care related personnel. The Human Resources Management (HRM) department creates and monitors the HRM plan which includes clear directives with respect to recruitment, employee performance measurement, employee improvements in the forms of education-training, employee incentives, career paths etc. The recruitment process is based on the Personal Qualification Requirement (PQR) set by HAAD for health care services experts in 2006. HADD requirements are included in JCI and SKEA documents, processes, job descriptions etc.

The HRM plan describes all HRM processes for:

- Encouraging and supporting staff and group cooperation during change management: "Enthusiastic colleagues" is one of the center components of change management initiatives in AHS. Aggregation is essential for JCI successful implementation and in many cases requires multidisciplinary collaboration (Roberts, J. Coale, J. and Redman, R., 1987, ‘A history of the Joint Commission on Accreditation of Hospitals’, JAMA.)
- Improvement Recommendation Process: Recommendations could be submitted from employees, clients, departments or groups. The recommendation process describes the way a recommendation could be approved and materialized in a change management program or be rejected.
- Employee Motivation Process: In this process there is a clear step by step description of how benefits, bonuses and
salary increases could be attributed to employees by their supervisors in their individual performance measurement plans.

- The Knowledge Management and Education process: Based on individual performance measurement plans AHS, via this process, invests on employee performance improvement. Investing in people means having a budget in place for employee participation in education and training both internal and external. Special budget is in place for ambulatory health practices benchmarking and practices education in cooperation with international institutions.

- Career Paths process: This process describes the way individual career paths are developed and linked to the improvement and education processes above. Based on the individual performance measurement plan if the employee achieves his/her targets then he/she will advance in the job description ladder and the departmental hierarchy and will receive a salary increase.

Strategy, the aforementioned processes, project plans and HRM policies are communicated via internal intranet, notice boards, inner conveyance frameworks etc. An emiratization program has been launched to ensure development of local employees both internally and externally. AHS has built relations with Fatima Health Sciences College where all the local nurses get their education in the means of scholarship provision and setting up milk-grounds to attract nurses in AHS.

GQC Concept: Partnerships and Societal Results

AHS hospitals are constantly providing health care services that directly depend upon their suppliers-providers and direct outsourcing of even their core health care services. They sign contracts and agreements with a wide spectrum of conglomerations ranging from large-international health care providers to the National Corporation for Tourism & Hotels which that provides services for food and catering, the Tanzifco Emirates LLC., Abu Dhabi that provides services for cleaning and housekeeping, the Abu Dhabi National Hotels that provides laundry services, and New Cleaning EST that specializes on medical waste disposal services to guarantee the wellbeing of the wider community.

These service providers have to be quality certified and the quality of their services have to be assessed continuously by AHS with the use of monthly key performance indicators.

Recent research performed by the PA consulting group in 2012 showed that 48% of UAE nationals travel to Thailand for their health treatment. Another 13% is travelling to Germany and 11% to the UK. This research proved the very low appreciation of patients of 28% towards AHS in the UAE. Recent studies after the accreditation AHS in JCI standards and the achievement of SKEA award showed a drastic increase of this percentage reaching more than 70%. This was achieved via a public educational campaign about AHS and their direct effect over the society. The “Ask the pharmacist” campaign motivated people in being more aggressive towards illnesses and their cure. The “Hand Hygiene” campaign focused on flu reduction especially on epidemic cases. The “Dietician campaign” make the public aware of the benefits of healthy food and dietary routines.

GQC Concept: Process Focus

JCI accreditation standards are considered by the Ambulatory health services hospital as the framework to document, manage, improve and monitor processes in a systematic way. Core AHS processes are categorized as “Patient-Centered” and “Health care organization management” (Classification in JCI standards chapters). JCI processes incorporate HAAD and SEHA requirements. They also incorporate quality control checkpoints and some of them are dedicated to the JCI accreditation quality management system like the quality assurance and continuous improvement processes. Performance measurement is based primarily on patient assessment. Process cycle time reduction and activities simplification and elimination are always performance measurement and continuous improvement targets.

GQC Concept: Customer Focus

Customer Surveys on patient satisfaction are usually managed by SEHA and distributed at SEHA corporate level. These are assessed on a monthly basis with patient complaints being of first priority in case of mistreatment. The yearly expected patient JCI satisfaction target is more than 92%.

Apart from health care services facilities play a very important role in patient satisfaction and as consequence there is a constant need for improvement mainly focusing on the renovation of inpatient and outpatient areas, lab and operation rooms, accommodation etc. (Kanji, G & Asher, M., 1996, ‘100 methods for quality management’, Sage Publications, London.).

GQC Concept: Performance Measurement

SKEA and JCI standards require organizational performance measurement in a holistic manner. AHS has developed a performance measurement system
that complies with both SKEA and JCI requirements. SKEA completed its first performance measurement assessment in September 2011 with an overall score of 577.295 out of 1000. Based on this report several areas of improvement were identified and continuous improvement efforts were performed. Several reviews based on self-assessment and SKEA reassessments have dramatically improved the SKEA score in recent years.

V. Conclusions, Recommendations and Future Work

We presented the application of the Glykas Quality Compass (GQC) in health care via a case study in Mafraq Hospital and the wider Ambulatory Health Services (AHS) establishment of Abu Dhabi also known as SEHA. We presented a literature survey of the four GQC categories, namely: Quality Philosophies, Methodologies, Standards, Excellence Awards. We then presented the use of these four categories in the health care sector with focus on the JCI standards and the SKEA excellence award. We then proceeded with the presentation of the application of GQC in AHS by presenting an analysis of each GQC concept in AHS application of JCI standards and SKEA.

AHS has been JCI certified and was awarded the SKEA quality excellence award. Many useful findings have emerged via the application of GQC in AHS. The AHS executives and the employees involved in the JCI certification process and SKEA assessment became aware of the whole picture of quality management systems of GQC. They realized that although they are quite advanced in the two GQC categories of Quality Standards and Excellence Awards they have not progressed in the other two GQC categories of Total Quality Management and Quality Methodologies. The slow progress in GQC Quality Management Philosophies Category and Total Quality Management in particular was also identified in both people enablers and people results of the SKEA EFQM assessment. The GQC analysis has concluded that an extensive effort has to be undertaken for quality management training to all employees. This need has resulted from the fact that JCI standards are concentrating on health care services standardization and they have some serious incompatibilities to standard quality management standards like ISO. The major problems stemming from these incompatibilities that need action are:

- immediate need for TQM training with special focus on quality management and quality control at the level of each individual employee
- non existent quality assurance process as there exists only JCI standards assurance

A recommendation to the above two points could be a decision of the AHS executives committee to commence a project on ISO certification with a lot of substantial work for process modeling and real time monitoring has already been in place in the AHS JCI standards system. Many AHS continuous improvement projects have failed. This was clearly recorded in both JCI improvement recommendations by AHS employees as well as during SKEA analysis and assessment. GQC analysis also revealed the reason of these failures. The lack of continuous improvement success is mainly due to the lack of any initiatives in the second GQC category of quality methodologies. The main focus of these methodologies like six sigma and the EFQM radar methodologies is that of continuous improvement. So there is a need for further initiatives in AHS on the implementation of one of these methodologies with special focus on continuous improvement. GQC analysis recommended the use of Radar EFQM methodology as there is a clear link with the SKEA award principles that are also based on EFQM.

The application of GQC proved to be very successful and for one more case study as its results have been verified and validated and proved similar to previous SKEA assessment performed in AHS. GQC usefulness has been appreciated by the organization it was applied to (AHS) for both its accuracy and ease of implementation.

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