Quality Improvement Project

Improving the Birth Registration Service Using Kotter’s Change Model: A Quality Improvement Study from Qatar

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Abstract

Introduction: The increased demand for birth registration (BR) services at the Birth Registration Unit (BRU), under the Ministry of Public Health in Qatar, and the negative media criticism called for an urgent quality improvement (QI) plan to be conducted. Methods: A QI project was carried out to improve the process of birth certificate registration in the country. This project depended on Kotter’s eight-stage model as a guide for the aspired transformation. Thus, strengths, weaknesses, opportunities, and threats (SWOT) analysis, “straw-man” process map, root cause analysis, political, economical, social, technological, environmental and legal (PESTLE) factor analysis, and operational analysis of the BR process were attempted through cooperation and one–one interviews with service providers and stakeholders. The baseline measurements involved in the project focused on two main outcomes: client satisfaction and the cycle time of the BR process. Results: The post-change customer satisfaction survey showed higher overall satisfaction (0.66% overall dissatisfaction) with the services compared to the pre-change client satisfaction survey (17.3% overall dissatisfaction). Moreover, the calculated cycle time of the redesigned process (6.30 min) represented a substantial decrease as compared to the pre-change cycle time (almost 7 days). Conclusion: The study of the BR process revealed many facts regarding delays and wasted time. It served as a trigger for the change and made solving this problem much easier by examining the real underlying factors. In addition, the successful use of Kotter’s change model at the BRU serves as a potential source for the diffusion of such model across other health institutions.

Keywords: Birth, Kotter’s change model, Qatar, quality improvement

INTRODUCTION

Birth registration (BR) is a basic human right and represents documented proof of an individual's place of birth and family relationship. The birth certificate (BC) contains important details about the identity of the person, the parents, the place and date of birth, and other information. Furthermore, the BC enables its holder to access essential services in a country, such as social services, health care, and education.¹ Given the fact that BR systems are vital for the aforementioned reasons as well as for surveillance and strategic purposes, their continuous evaluation and improvement are essential.² In Qatar, the Ministry of Public Health (MoPH) has the dual mandate of developing policies and programs to improve the people’s health and laying the foundations of a vibrant country for decades to come. The service of BR is one of the most important functions at the ministry and is carried out under the supervision of the General Directorate of Medical Affairs. The utilization of this service reaches around 20,000 visits per year.

Due to the increasing population size and the shortage of staff, the duration of the BR process has reached several days and sometimes more than a week. Similarly, earlier research has identified the quality of service to be a significant factor in its uptake, including the civil registration service.³

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**Problem**

For every child born, a BC is issued by the government to monitor the number of births and the total number of the population. In Qatar, the Birth Registry Unit (BRU) is the sole authority that is responsible for issuing BCs and is located at the MoPH. Thus, a quality improvement (QI) project was carried out in the BRU and it involved the use of process redesign and change. The management of this project depended on Kotter’s eight-stage model as a guide for the aspired transformation. [4]

A strengths, weaknesses, opportunities, and threats (SWOT) analysis [Table 1] of the current situation triggered an urgent need to improve the BR process. Such need was based on several weaknesses and threats such as the presence of several delays in the BR process, the increased number of new births, the public criticism and negative media coverage of the BRU, and the shortage of staff. On the contrary, multiple strengths and opportunities were identified including the support of high-level stakeholders, such as the Minister of Health, and the strong cooperation between MoPH and Hamad Medical Corporation (HMC). HMC is the largest provider of maternity health services in Qatar and accommodates 90% of deliveries in the country.

In light of the aforementioned and in alignment with Qatar’s National Vision 2030, this project aimed to improve the process of BC registration by removing non-value added activities to reduce the cycle time over two months. This aim will be accomplished by the process mapping of the BC application to identify any constraints, bottlenecks, and unnecessary steps.

**Materials and Methods**

This project was conducted at the BRU, under the MoPH in Doha, Qatar, over a period of six months between December 15 and May 28. The QI team comprised the Medical Advisor to the Assistant Minister of Health, the BRU supervisor, the BRU staff, and the head of the IT department.

**Interventions**

According to Kotter,[4] the change process of any organization involves eight critical stages and mismanaging any one of these step that will be discussed below can undermine an otherwise well-conceived vision.

**Create or increase urgency**

To create the urgency to change, the QI team conducted a pre-change customer satisfaction survey of clients using the BR service at the MoPH. The data of this survey were analyzed and revealed a 17.3% overall dissatisfaction. Similarly, the dissatisfaction rate among clients toward the speed of service delivery was 36%. Also, the overall percentage of clients unsatisfied with the BRU’s employees was 6.6%. In addition to that, SWOT analysis [Table 1], “straw-man” process map, root cause analysis [Figure 1], political, economical, social, technological, environmental and legal (PESTLE) analysis [Figure 2], and operational analysis of the BR process were attempted through cooperation and one-one interviews with the service providers. Moreover, the QI team arranged for all relevant individuals to participate as a team in generating and reviewing the letter. This was done to provide great interaction between the suppliers, performers, and the QI team (the change agent). It also increased the ownership of this group regarding the whole project.

The process mapping revealed several delays related to data transformation and unnecessary “hand-offs.” The QI team calculated the cycle time using a time sheet, starting from the time at the registration counter until the storage of the BC in the handout counter’s locker.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tr>
<td>• Supportive management, where improving the BR process is a priority</td>
<td>• Delayed BR process till receiving the BC (seven days)</td>
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<td>• Well-funded organization</td>
<td>• Frustrated and poorly trained staff with no clear job description</td>
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<td>• The MoPH is the only authorized place in Qatar to issue the BC</td>
<td>• Disgruntled customers</td>
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<table>
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<tr>
<th>Opportunities</th>
<th>Threats</th>
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<tr>
<td>• Integrated IT network between MoPH and the Ministry of Interior (E-gov)</td>
<td>• Increased demand due to population growth</td>
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<td>• Availability of new technology</td>
<td>• Complaining clients and negative media image</td>
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<tr>
<td>• Good cooperation between HMC and MoPH</td>
<td>• Shortage of staff due to low salary</td>
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BC = birth certificate, BR = birth registration, HMC = Hamad Medical Corporation, MoPH = Ministry of Public Health
The result of calculating the cycle time revealed that the average time taken to process eight applications prior to the implementation of the process redesign was 7 days and 26 min. Therefore, the clients were subjected to a long waiting time, which made them dissatisfied with the service. Another main problem was the delay from the Ministry of Interior (MOI) to obtain the ID number for the newly born baby.

The main issue determined by the PESTLE analysis was the political pressure from the media to improve the BR service at MoPH and to match it with the rapid population growth. Subsequently, the findings of the analyses were presented during a friendly gathering with the BRU staff. The presentation was initiated by a session of introducing one another to create a friendly environment. After which, the discussion started by asking the employees this question.
Why do you think we need to improve the process of BR? By asking this question, the employees were engaged and some stated that “this is being done because of the customers’ complaints,” whereas others said “we are frustrated and we need more manpower to carry out the work and please the clients.” After presenting the result of the previously mentioned analysis, the concerned employees were surprised by a huge number of complaints and errors in data entry. Thus, they realized that the issue was a matter of staff productivity rather than staff shortage.

After the presentation, the staff members were asked for ideas to improve and address the identified gaps. At the end of the meeting, an action plan was developed, in cooperation with the staff, to implement the improvement ideas and to overcome any barriers. A need for change was proposed by the QI team hoping it will “defrost” the current situation and result in an organizational transformation. The current step created a sense of urgency that if carried out appropriately will send a compelling business case of the need for change. The aim of the first step was not only to introduce change but also to integrate it into the organization by motivating managers and staff to see the immediate need for change and embrace it.

Form a powerful coalition or building the guiding team
The need to improve the process of the birth certificate registration (BCR) system was a priority for the top management (HE, the Minister of Health). A stakeholder analysis was carried out to locate people who will support and buy into the project of change. The analysis identified the individuals who are “powerful” whether with high interest or with low interest and sought to get them on board with the organizational development project very early. Thus, a team was formed, which comprised effective employees from different departments to assist in making this change happen. The other members of the QI team were chosen because of their influence in the organization. In addition to that, some team members were chosen because they represent informal leaders from all levels of the organization or because they possess strong technical skills and knowledge in the process of BCR.

Getting the vision right or creating a vision for change
Any effective change vision must include new strategies and structures aligned with a new behavior on the part of senior executives. People monitor their bosses, particularly their immediate ones very clearly. A clear vision means everyone understands why they are asked to do something. On the basis of the earlier findings from the SWOT analysis and the process map, the ideal future for the BC process was visualized [Figure 3]. The vision of the project was as follows: “To improve the process of BCR, so that non-value added activities and waste time will be minimized and eliminated if possible.” This represents the

![Figure 3: Future process (redesigned) mapping of the birth registration service. BC = birth certificate, BR = birth registration, ID = identity document, IT = information technology, MoPH = Ministry of Public Health, NRA = National Registration Application](http://www.jqsh.org)
direction of the service to be achieved, otherwise known as the “WHERE” in the strategy.

The QI team reaffirmed the project’s vision during each follow-up meeting, so that the BRU staff will be focused on a clear objective of what needs to be achieved. Moreover, the employees were engaged in the visioning process to be part of the QI project team and the organization. Subsequently, the QI team prepared a Gantt chart with all the steps needed to accomplish this project to solidify the vision for everyone.

**Communicating buy-in or communicating the vision**

Communicating the vision is the fourth step in Kotter’s model of change and is viewed as a critical stage in leading change. Many reasons contribute to change failure and one of them is ineffective communication, where there is an effort to transmit the vision but the behavior of highly visible individual’s conflicts with the message, resulting in employee cynicism.[4] In this project, the QI team established a good relationship with the involved stakeholders, especially the staff at the BRU. Furthermore, engineering change relies on a systematic approach to communicating that change. Subsequently, leaders need to develop a communication strategy based on the message, the available communication channel, and the overall timetable for such change. So, there is a need for commitment to and alignment with the organization’s picture of future success. To inspire commitment to a vision, a leader needs to have an effective way of communicating it. So, the QI team arranged for a meeting with all the BRU staff to communicate the vision, during which focus was put on what should be improved, the project’s objectives, and the expected outcomes. In addition, departmental effectiveness was linked to achieving the “work process redesign.” Ultimately, the QI team aimed at “first to understand, then to be understood” as recommended by Saul.[5] Thus, all queries raised by the attendees were listened to, and the QI team provided appropriate clarification using a two-way open communication approach.

**Empowering action or removing obstacles**

The staff members were committed to change, appreciated the urgency to change, and worked in a team that had a good understanding of the vision and the future of this project. However, the success of any change project requires a change-enabling environment. The aim of the fifth stage was to embolden a wide range of individuals to take action by removing as many obstacles to implementing the change vision as possible.[4] As a result, a force field analysis revealed that the driving forces for change included the advocacy of high-level management (e.g., the Minister of Health) and the underlying concept of customer-focused service provision in the planned change. However, the restraining forces against the change encompassed the lack of trained staff, relevant policies and procedures, and supporting structure. Thus, the staff at the BRU perceived their job as a routine and underestimated the value of their work to achieve the ministry’s vision. Yet, accomplishing organizational development objectives relies on identifying and mitigating any major obstacle.

Afterward, the QI team met with the manager of the women hospital (WH-HMC) and discussed the possibility of having a BR office on their premises. The women hospital (WH) management was cooperative, supportive, and represented an enabling factor in this change project. Nevertheless, the change (decentralization of the BR services and having BR office at WH) was not expected to happen soon. Meanwhile, the QI team assessed the training needs of the staff and accordingly developed the necessary training plan. As a result, the employees at the BRU were highly motivated and appreciated that they were being recognized for their contribution to the overall vision of the MoPH.

In addition to that, a clear policy and a detailed procedure were developed for the BCR process. The documents underwent review by the Director of the Planning and Strategy Assessment Department prior to final submission to the Minister of Health. Simultaneously, the logistics were underway to establish a BR office at the Women Hospital, including furniture and computers. With the establishment of this office at the WH, around 70% of clients, previously coming to the BRU at the MoPH, began applying for the BC through the new office at the WH.

**Create quick wins**

Kotter[6] stressed on the importance of short-term wins as enablers of successful transformation efforts. In this regard, the QI team was pleased to celebrate the opening of the new BR office at the WH. This victory was a clear manifestation of the change management process to the management, staff, and clients. Similarly, the launching of the BR office at the Women Hospital was published by different local as well as some regional newspapers. According to Kotter,[6] the main advantages of short-term wins were providing reinforcement for change and enabling the coalition team to test their vision in real life. Similarly, the morale and motivation of the staff were heightened following this short-term win, where more employees bought into the vision and became part of the change team. In addition, this provided the top management with concrete evidence to the vision and its progress.

Thus, the short-term wins were recognized internally at the MoPH and externally as well. Any failure to achieve early short-term wins could have been disadvantageous and threatening to the entire process. The members of the QI project team were acknowledged and recognized for their contribution to this accomplishment.
Consolidating improvements or building on the change

QI, as stated in the beginning, is a continuous process. Furthermore, the credibility offered by short-term wins can be used to tackle additional challenges in the future. Maintaining the clarity of the shared purpose in this project as well as the high level of urgency were the keys to this change project's success. As a result, the structure of the BRU was modified to include the new BR office at the WH. Also, the need for developing relevant policy and procedure has been recognized by the top management and the staff. The involved staff were recognized for their commitment and hard work by receiving a recommendation for incentives and promotion. Their full support and engagement were a key component for the achieved success.

Fostering a high-performance culture in any organization is essential to achieving its strategy because it aligns the actions of motivated employees with the organizational mission and goals. In addition to that, corporate culture is an important part of the internal organizational environment because it includes the key values, beliefs, understandings, and norms that organization members share. To reach organizational effectiveness, the corporate culture must be aligned with the organization's strategy.\(^6\)

Making change stick or anchoring the changes in corporate culture

On the basis of the final step of Kotter's eight-stage change model, sustaining change necessitates the development of an enabling organizational culture. In addition, a supportive culture provides the basis for the new ways of operating.\(^4\) To “make change stick,” Richard C. Reale\(^6\) introduced 12 principles that place the responsibility of maintaining change on the shoulders of every employee in an organization. Some of these principles are possessing a vision, challenging your thinking, involving others and being involved, aligning actions with the organizational culture, and confronting fears. In addition, Reale\(^6\) stressed that communication is important and that leaders should prepare their staff for success as well as recognize them when they do something right. In this regard, the QI team noticed a behavioral change among the employees who showed increased cooperation and involvement. Also, the staff became more open to sharing new ideas with their managers as well. Such new behavior and attitude among the employees contributed to an overall performance improvement, which is an important step toward organizational development and change.

Measurements

In this project, the baseline measurements were collected at the beginning, and they focused on two main outcomes: client satisfaction (17.3% overall dissatisfaction) and the cycle time (almost seven days) of the BR process. The satisfaction of the BRU’s clients was assessed through the use of a validated, standardized, and self-reporting anonymous questionnaire. Regarding the time length of the BR process, a time sheet was used by the QI team and the sheet included all the tasks performed.

Statistical analysis

Univariate summary statistics were described by calculating proportions and percentages for categorical variables. Data were analyzed using Microsoft Excel software (version 2012).

Results and Discussion

The QI team conducted a post-change customer satisfaction survey and the results showed that the overall satisfaction with the services was higher than that obtained from the pre-change survey. Similarly, the dissatisfaction rate among clients toward the speed of service delivery dropped from 36% to 2%. In addition to that, the overall percentage of clients unsatisfied with the BRU’s employees declined by 90% from 6.6% to 0.66% on implementing the change project. Also, the clients’ satisfaction was clearly reflected across the different media channels, and one local newspaper was prompted to prepare a report on the BR office at the WH.

Moreover, the calculated cycle time of the redesigned process (6.30 min) represented a substantial decrease compared to the pre-change cycle time (7 days and 27 min). In the new process pathway, it took employees 3 min to enter and verify the data (instead of 1 day and 7.25 min), 30 s to retrieve the ID number and print the BC (instead of six days), and 1 min to hand over the document to the client. The main time reduction was that of the data entry and verification (more than one day) task as well as the retrieval of relevant information for the MOI (six days).

Lessons and limitations

While managing this project, the QI team had to widen their knowledge and skills to all areas related to leadership and change management. Moreover, evidence-based management became essential to cope with the changes required in the organization. The communication of the vision and mission behind the project was of great importance. Similarly, engaging the staff early on in the project enabled them to become more familiar with the notion of such work and its importance for their department. Moreover, the mapping of the process was a great tool in identifying and analyzing the delays in the service. In addition to that, creating a sense of urgency and motivation to reach excellence in service provision constituted a great driver to success. The process of building teams and engaging other stakeholders helped speed the accomplishment of target objectives. Importantly, the clear assigning of responsibilities among different team members with a specific time frame proved to be of benefit in following the progress and achievement of the desired goals.
On the contrary, managing people was the most difficult aspect of this project. More time should be devoted to learning how to manage human resources, so that the QI team can better engage different personalities and bring more people to buy in to the vision. Another problem was maintaining the balance between the engagement of the frontline staff at the BRU and the managerial chain of the unit. Ultimately, the QI team wanted to benefit the BRU through improving its service. Regarding the results of this project, the findings cannot be generalized to other health-care facilities in Qatar given the unique nature of the BRU as the sole authority for issuing BCs. Nevertheless, an important aspect of this project is how to sustain the current QI initiative and promote its diffusion among other health-care institutions in Qatar. The QI team believes that this project sparked an interest among the staff at the BRU but more efforts need to be done at the national level and through a comprehensive capacity-building program. Subsequently, such a program must be coupled with a nationwide road map to promote the culture and practice of QI in the country’s health-care sector.

**Conclusion**

The increased demand for BR services at the BRU and the negative media criticism made this QI project an essential one. The study of the BR process revealed a lot of facts regarding delays and wasted time. Also, it served as a trigger for the change and made solving this problem much easier by examining the real underlying factors. Similarly, redesigning the process was a tool that made reaching the aim and achieving the vision easier. The QI team used Kotter’s eight-stage model to manage this project. However, the success achieved from this project represents the beginning rather than the end for the QI team. In addition, the successful use of Kotter’s change model at the BRU serves as a potential source of diffusion of such models across other institutions in Qatar’s health sector.

**Ethical considerations**

The research committee at the Ministry of Public Health has approved and supported this project. No personal identifiers were collected from participants and all data were kept private and confidential throughout the duration of the project.

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**Conflicts of interest**

The authors disclosed no conflicts of interest related to this article.

**References**