

## **Managing Risk, Recovery & Project Management**

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### **Abstract**

Healthcare institutions are tasked with improving the quality of service reducing costs. The management of these organizations requires an easy method to gain quick, actionable insights to ensure they are providing quality service in a sustainable business environment. Operation improvements is to put attention on the practices planned to achieve the goals within the business on the organization. The key activities of operation improvements focus on the product development. Quality of the product is the key factor as this involves customer satisfaction. Maria R. Shirey 2009 in Volume 31 of the article The Journal for Healthcare Quality (JHQ) endorses the art and science of healthcare quality preparation to improve the health results and advance the exercise in affecting situations. There are already multiple factors to improve the operations and quality. However, a data analytics solution can be developed to provide insights to clinical laboratory and hospital management about the performance of the healthcare organization via series related metrics and reports which also can provide insights into current industry conditions and emerging trends. The core laboratory operation metrics module can be designed to provide insights related to the operational performance of the core laboratory.

*Keywords:* Operation, Quality, Improvements, data, analytics, hospital

### Operation Improvements & Quality Management in Healthcare

Numerous studies have been conducted to explain how healthcare organizations are tasked with enlightening the quality of provision dropping the expenses. The author Maria R. Shirey 2009 in Volume 31 The Journal for Healthcare Quality (JHQ) described in the journal about the quality of the healthcare industry, the factors that does the improvements in the operation. However, the hospital can build a data analytics software project specifically tailored to provide clinical laboratory and hospital management with performance insights. Management of healthcare institutions is often unable to effectively quantify the value delivered by the current clinical laboratory solution (equipment, people, process). In addition, management often lacks insights into the broader states of the industry and where their organization ranks relatives to others and a benchmark level of performance. This lack of transparency can create challenge in ensuring the organization delivers quality service while also making the best investments to effectively adapt the change. A software can be developed which can be used by the management of clinical laboratory or hospitals to monitor the organization performance. It will receive data from the source, analyze the data and display to the user various dashboard metrics related to key.

### Literature Review or Background

In Maria R. Shirey, et al.'s 2009 summary article *The Journal for Healthcare Quality* (JHQ) explains about the healthcare quality, all the factors which can be followed to get benefited in healthcare industry. In today's market when all companies are interested in digital technology, all the information's are tracked and stores in the company databases. For example, patient information, address, phone number, DOB, departments, samples, Dr. names, test types, appointment date, next appointment date etc. To do the operation improvement and quality, this is advisable to use a tracking tool which shows in a graph how many patients are visited for this week, how many tests are done, productivity of the employees, how many samples have taken etc. A tracking tool can be developed where it will receive data from the laboratory database, then analyze the data and display the user metrics in the dashboard. The report can be generated and share with the lab in charge, the standard level of performance which can measure the performance of the lab, also provides insights into the current state of the industry and emerging trends. The tool can receive the test order and result data from the laboratory information systems which will include analyzing lab's internal procedures. This way a lab can get the information on daily basis if the machines are old and needs to be replaced, which machine is using more to perform the test results.

### **Discussion**

Healthcare is a tremendously diverse industry. It mainly consist of organizations and physicians who provide facilities for the analysis, treatment and anticipation of disease, sickness, and other physical injuries. There is inclusive variation of specialties that concentrate on detailed treatments. Health care refers to main, subordinate and tertiary care, as well as to public fitness. Operation management and quality plays a vital role for well-organized and facility of health

services. Since healthcare industries are experiencing extensive quantity of improvement, the operations improvements are fluctuating as well. Some of the examples are reducing the cost as well as give better service to the patients. The recommendation is if a tool is developed which will analyze the laboratory's data to help optimizing financial performance, achieve sustainability, and become a leading contributor to an institution. This synergistic approach of people, process, and technology uncovers intelligent insights that help put the laboratory and institution on a path of continuous improvement. It will also provide insights into current industry conditions and emerging trends. Management of healthcare industry often unable to proficiently calculate the value distributed by the existing clinical laboratory solutions. In addition, organization often lacks understandings into the larger state of the business and where their association positions relatives to others and standard level of presentation. This absence of transparency can create challenges in certifying the association brings quality service while also making the best investments to efficiently adapt to change. The tools can have various metrics like the demand, cost, Turnaround time, Quality of the machine. It will give a report like how many patients has visited on weekly basis, how many tests are done, what is the cost of the tests and what is productivity against this, how many employees are involved to give a service to the number of patients etc. To accomplish the operational effectiveness using cost reduction while improving the service is continued all the times. This type of analytical tool will provide best calculation to improve the operation as well as to maintain the quality of the service.

Conclusion: As there are already a framework for operation improvement and quality planned in every healthcare industry, the recommendation is to use the Data analytics tool which will provide the report metrics and based on that the team can come up with ideas how to improve the service in efficient way, also improve the quality of the service reducing costs.

### References

- [1] Maria R. Shirey, March-April 2009 - Volume 31, *The Journal for Healthcare Quality (JHQ)*: - Page 2 - 57
- [2] Author Troy Segal Jan 3 2018, *Operation management in healthcare*, retrieved from <https://www.investopedia.com/ask/answers/051515/what-are-some-examples-operations-management-healthcare.asp>
- [3] <https://go.galegroup.com/ps/i.do?p=AONE&sw=w&u=googlescholar&v=2.1&it=r&id=GALE%7CA124187619&sid=googleScholar&asid=2006dc83>
- [4] Sunil Chopra and ManMohan S. Sodhi - 2004, *Managing risk to avoid supply-chain breakdown: by understanding the variety and interconnectedness of supply-chain risks, managers can tailor balanced, effective risk-reduction strategies for their companies*, Page 2 – 4
- [5] Chakraborty, Moonmoon & Excellence, Operations. (2019). Supply Chain & Inventory Management. 10.6084/m9.figshare.7824107.
- [6] Chakraborty, Moonmoon. (2019). Fog Computing Vs. Cloud Computing. 10.6084/m9.figshare.7886126.

- [7] Chakraborty, Moonmoon. (2019). Planning, Control Systems and Lean Operations in Information Technology. 10.6084/m9.figshare.7886138.
- [8] Mukherjee, Sourav. (2019). How IT allows E-Participation in Policy-Making Process. 10.6084/m9.figshare.7796063.v2.
- [9] Mukherjee, Sourav. (2018). Popular SQL Server Database Encryption Choices. 10.14445/22312803/IJCTT-V66P103.
- [10] Mukherjee, Sourav. (2019). Benefits of AWS in Modern Cloud. 10.5281/zenodo.2587217.
- [11] Mukherjee, Sourav. (2019). Indexes in Microsoft SQL Server. 10.6084/m9.figshare.7866176.

### **AUTHOR'S PROFILE**

Moonmoon Chakraborty has more than 10 years of experience in professional services and dynamic consultants on the overall design, configuration, delivery of software, data solutions to meet customer requirements. She is also engaged in Data Management practice with deep focus on Data Architecting, Data Modeling, Data Integration, Data Conversion and DATA Quality. She is instrumental in diverse databases platforms such as Oracle, Teradata, PostgreSQL, DevOps and in AWS Cloud. Her passion is to interact with business teams, oversight and direction to project and technical team members in all stages of the implementation lifecycle and translating client desires into a solution. Moonmoon is based out of Chicago. She holds bachelor's degree in Computer Sc & Engineering and Master of Science in Information Technology. She is certified with many Oracle database certifications, Prince2 foundation and

practitioner, Agile Scrum Master, ITIL foundation and expert. She takes many initiatives at work, establishing strategic objectives, project plans, milestone and make dramatic improvement in business while meeting the project objectives and deadlines.