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**" Assessment of laboratory quality standers to  
ensure accuracy of performed tests and  
patient's satisfaction"**

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## **Abstract:**

In this study there is a comparison between performance of two labs in primary health care to detect common problems and how to overcome these problems

Discovering early signs of systemic problems which related to labs performance

How to be guarantee from any lab result, increase trust of diseased, doctor, and society in worth of lab tests

The study showed the most problems occur among laboratories in hospitals, especially related to patient safety occur due to poor management and lack awareness of the importance of continuous training within the health facility.

This gives evidence that management and organization of work is more important than previously thought, and applying of quality standards, training and continuous development is best in delivering health care.

Although of these problems and defect which Facing in our labs, we can overcome these problems by Focus on good management (organization)that helps identifying the training needs of staffing (employees) according to WHO in laboratory quality management and monitoring quality management policies.

## **key wards**

Quality      Laboratories      Health Care      Patient Satisfaction  
Lab accuracy

## **Introduction**

Accomplishment, maintaining and increasing accuracy, deadlines and reliability are major confrontations for labs in health care units. All nations all over the world must build national abilities for discovering, and responding to public health events of international programs when they decided to be part of the International Health Regulations fulfilment process. So, ensuring of quality in health labs will enable nations to build test results that the international societies will trust in emergency. Which supply a comprehensive reference on Lab Quality Management System for all beneficiaries in health care laboratory processes, from administration, to operations, to bench-work laboratories.

Each subject is debated “12 Quality System Essentials”. A diagram showing these 12 essentials is represented below.

- Laboratory tests accuracy are important part in quality health care delivery.
- Quality labor results are required to define accurate clinical diagnosis and making treatment plane for epidemiological goals, for the monitor and control of diseases of public health importance, and to prevent disease outbreaks.

- So, the El-hay Emaraty medical center and Mostafa Kamel medical center labs were chosen as a pilot study for our labs in port said to discover early warning signs of problems and suggesting best solutions for these problems

## **Aim of the work**

- Comparison between performance of these two labs and the performance according to WHO to discover the most common problems
- Discovering early warning signs of systematic problems associated with these labs to overcome these problems
- To ensure the accuracy of test results, increase confidence of patient, clinicians and communities in the value of laboratory testing

## **Methodology**

### **Literature Analysis:**

Most of this research depended on Publications of the World Health Organization (WHO) and articles from the book (Laboratory Quality Management System).

### **The Research Design and Instrument:**

Different methodologies and analytic tools were used to assess quality standard in labs comparative check list between El-Hay Elemaraty medical center and Mostafa Kamel medical center fish bone for listing the problems found

## **Lab check list for quality model**

A comparative study between the in El-Hay Emaraty medical center and Mostafa Kamel medical center laboratories in port said

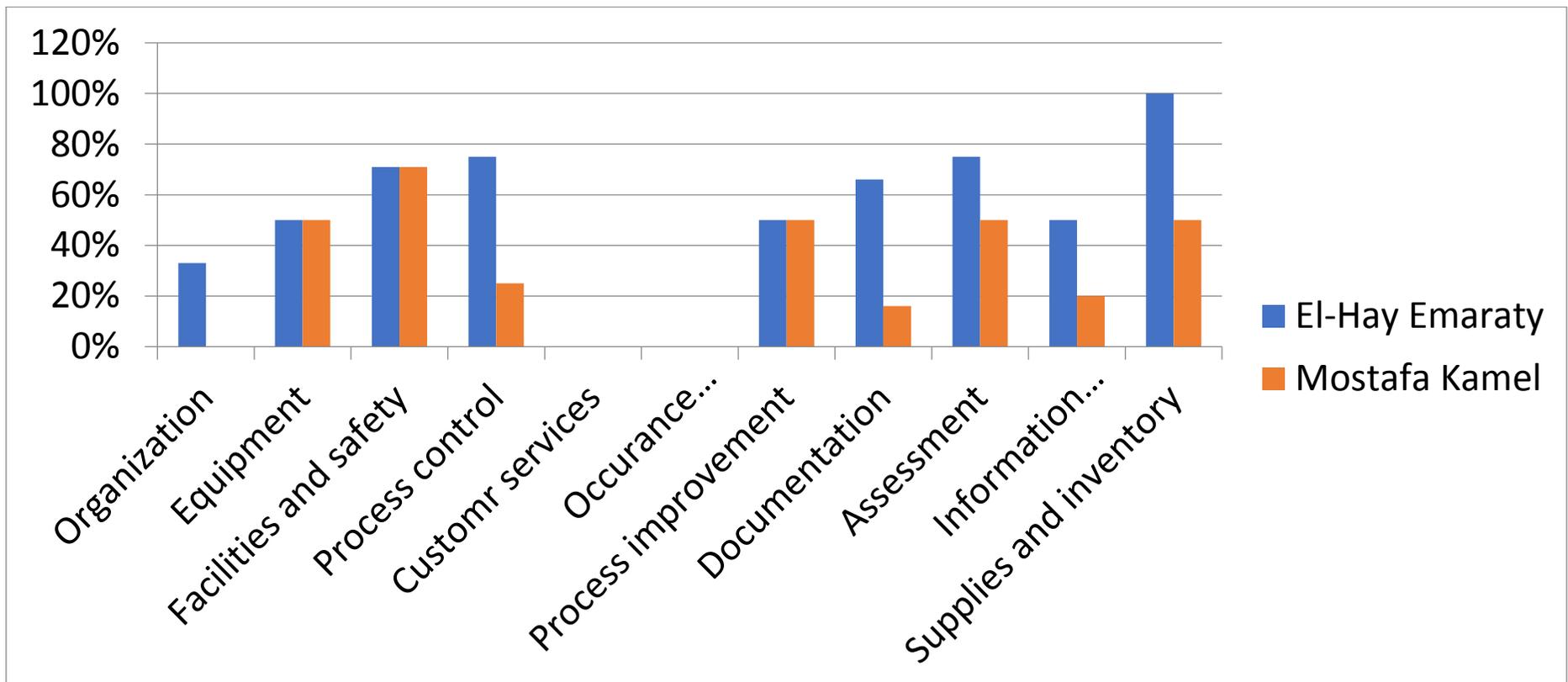
Items	El-Emaraty		Mostfa kamel	
	Done	Not	done	Not
<b>Organization</b>				
organizational structure	√			×
job description		×		×
organizational structure visual		×		×
<b>2- Facilities and safety</b>				
<b>a-Safety management program</b>				
pipe		×		×
fire exiting	√		√	
eye washers	√		√	
first aid equipment	√		√	
chemical spills kit	√		√	
biological spills kit		×	√	
<b>b-standard safety</b>				
hand washing	√		√	

prohibit eating – drinking	√		√	
cleaning work surface daily		×	√	
waste management		×		×
-Used color code for dangerous area material	√			×
-using msds for dangerous material	√		√	
-safety training	√		√	
-manual for providing safety	√			×
<b>Design</b>				
type \ NiSource of ventilation		×		×
sinks at least	√			×
material for bench work	√		√	
<b>Process control</b>				
Sample management	√		√	
Written policies		×		×
Information needed on requisition	√			×
Lab hand book		×		×
Essential information about sample	√		√	
Patient preparation such as spatial time – fasting	√			×
Using control material	√			×
Using calibration of equipment	√		√	

<b>Assessment</b>				
Internal assessment	√		√	
Government External audit	√		√	
Equipment Ppm	√			×
<b>Document</b>				
The policies are written	√		√	
SOPs		×		×
Accessibility	√		√	
Occurrence management		×		×
<b>Customer service</b>				
Check list for customer's opinion	√			×

## Results

A comparative study between the in El-Hay Emaraty medical center and Mostafa Kamel medical center labs according to Quality System Essentials applying



# Discussion

## The value of laboratory quality

Laboratory quality can be represented as reliability, accuracy and timeline of results for any report or test. The laboratory results must be accurate for accurate diagnosis, all proposes for any test lab should be reliable, and results must be having timeline in order to helping in a treatment plans in any health care unit.

## Standard of accuracy recommended

When doing lab tests, there is always part of inaccuracy. The challenge is to decrease this part of inaccuracy as much as we can, for making of our testing systems accurate 100%. An 99% accuracy level may be accepted, but still 1% error form reported results can become huge in a system where many events occur, such as laboratory testing.

## Negative conclusion of lab errors

Labs make test reports that are widely used in health care units, hospitals, private clinics and other health settings. Health feedback depend on the accuracy of the testing and reporting. If inaccurate results are done, the consequences will make:

- unuseful treatment.
- treatment complications
- incorrect treatment plan
- incorrect diagnosis
- additional and unnecessary diagnostic testing.

These consequences increase cost, time and personnel effort for health care units and for patients also.

## Reducing labs errors

For achieving highest level of accuracy and reliability in lab tests, it must do all processes and procedures in the lab with best possible method. The laboratory is a complicated system, including many steps of processes and many technical. The complication of the system asking many operations and procedures be done carefully. So, the quality management system model, that we look for is very valuable for reaching best laboratory performance.

## Conclusion

Laboratories are one of the most important places to provide services to patients within the health institution, which must be ensure the patient safety and care quality.

The study showed the most problems occur among laboratories in hospitals, especially related to patient safety occur due to poor management and lack awareness of the importance of continuous training within the health facility.

This gives evidence that management and organization of work is more important than previously thought, and applying of quality standards, training and continuous development is best in delivering health care.

Therefore, there must be a good management system and an effective mechanism to solve the problems facing the institution and staff and patients

- A pilot study compared to two randomized labs in port said (El-Hay Emaraty medical center and Mostafa Kamel medical center) lab quality management system.
- The statistical analysis shows that El-Hay Emaraty medical center lab is scored 52 % but Mostafa Kamel medical center lab Is scored 27% according to interview and observations checklist which based on WHO standard.

## Recommendation

**From the result and conclusion of this research the following are recommended**

- Should be defined the organizational and administrative structure of the laboratory
- It should define the responsibilities and job description of any person who participates in or can influence the laboratory work
- The laboratory should ascertain its understanding of the needs of its customers and explore its client's performance
- The laboratory should have a system for handling customer complaints effectively
- Quality activities should be monitored and staff training system activated
- Know the appropriateness of policies and procedures and the knowledge of staff and their application
- All laboratory personnel should know all laboratory infection control policies and how to apply them

## Summary

Although of these problems and defect which Facing in our labs, we can overcome these problems by Focus on good management (organization)that helps identifying the training needs of staffing (employees) according to WHO in laboratory quality management and monitoring quality management policies.

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