



Acceptability and awareness  
about point of care testing  
(POCT) among health care  
providers in a tertiary hospital  
in Saudi Arabia

Presenter: Omar Malkawi, RN

# Outlines

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# Introduction & background

Point of care testing (POCT) refers to performing laboratory testing outside the laboratory department or at the bed side.

The time of getting a fast laboratory results can be critical for the patient

The idea of POCT is to perform the test rapidly and obtain the result fast

POCT can be cost effective, it also can be more expensive

POCT need the users to be trained

Quality of POCT results still not widely accepted

# Literature review

Dillon and Morris (1996) defined “user acceptance as a demonstrable willingness within a user group to employ technology for the tasks it is designed to support”

The technology use in treatment considered as advantage of technology use (Alakärppä, I. and A. Valtonen, 2011).

advantages of point of care testing like rapid management and response time and facilitate decisions which will help decrease the stay in the hospital and save more resources, in the contrary issues can be significant in regard to maintenance (Boyd, M. and T. Woolley (2016).

# Literature review

very limited health care organizations adopted the need to have a special department to provide support and education in POCT in Saudi Arabia (Al-Ansary, 2011).

many patients in India can't use POCT due to its relative high cost, in the other hand performing the POCT in clinics in urban areas resulted in high waiting time for the test and the result (Engel et al., 2015).

# Literature review

A study recommended to use POCT urine culture and sensitivity to decrease use of antibiotics and then decrease bacterial resistance to antibiotics, since urine infections are the second responsible cause of prescribing antibiotics in Denmark (Holm et al., 2015).

the studies were limited in this field and the results came with different findings, some tests of POCT are more expensive and others are cheaper (C. O. Laurence, Moss, Briggs, Beilby, & Po, 2010)

# Method and Methodology

This cross sectional study was conducted in selected departments in King Faisal Specialist Hospital and Research Center. Using a questionnaire constructed by the researcher that is composed of five dimensions covering the following aspects

Personal information (job, gender, experience, age, and working unit), some variables are continuous, and others are categorical variables.

Time efficiency of POCT.

Accuracy of POCT.

Training need/efficiency for POCT

Patient outcome in case of using POCT.

a pilot study of 35 participants was conducted in the targeted departments to assess the validity and reliability of the tool, management team was involved in the process to facilitate data collection, copies of the questionnaire were given to unit managers and distributed to the staff, participation in the study was totally voluntary.

\*\*Information (cover) page accompanied each questionnaire that provided brief information about

- Title of the study
- Purpose of the study
- Researcher contact information
- How to answer questions by choosing the appropriate answer from the choices
- Voluntarily participation in the study
- The study will be anonymous and all the data will be kept secured.
- study using convenient sample



# Validity and Reliability

The tool used in this study was constructed by the researcher, and was tested for validity by expert staffs:

Prof. "Saad Al-Ghanem" PHD in health administration From King Saud University

Five nursing staff using the POC from different units independently

Two consultants' intensivists, working at King Faisal Specialist Hospital & Research Center critical care division.

A statistician was consulted to find the best pilot study sample to be used to test the questionnaire reliability, he suggested number of 35 participants will be enough to measure the reliability of the tool.

cronbach's alpha reliability test performed and the result was 74%.

# Results

	Frequency	Percent	Valid Percent	Cumulative Percent
cardiovascular	119	44.2	44.2	44.2
oncology	73	27.1	27.1	71.4
icu	77	28.6	28.6	100.0
Total	269	100.0	100.0	

First dimension					
In general POCT result takes less time than laboratory result need to appear					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
Trimmed mean	3.7	4	3.9	3.8	4.3
Standard deviation	1.5	1.4	1.5	1.3	1.4
getting result fast (less than one hour) is important for patient treatment					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
Trimmed mean	3.7	4.1	3.9	3.9	4.4
Standard deviation	1.5	1.5	1.6	1.4	1.3
If no POCT is available in emergency situation do you think patient condition will be affected adversely					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
Trimmed mean	3.9	4	4.1	3.6	4.2
Standard deviation	1.1	1.3	1.1	1.3	1.3
Performing POCT (starting the test) require less time than sending sample to the lab					
	Doctors	Nurses	Cardiovascular	Oncology	ICU

Second dimension					
Do you consider results drawn from POCT as accurate					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
Trimmed mean	3.4	3.6	3.5	3.5	3.8
Standard deviation	1.1	1	1	1.1	.9
Would you rely on POCT results to give high alert medications? (E.g. potassium, calcium, heparin)					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
Trimmed mean	3.3	3.1	3.1	3.3	3
Standard deviation	1.1	1.1	1.2	1	1.1
Would you rely on POCT result (e.g. ROTEM, ACT) on giving blood/blood product to patient					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
Trimmed mean	3.4	3	3.1	3.2	3
Standard deviation	1.1	1.1	1.2	1	1.1
Would you rely on POCT result (e.g. blood gas) to put patient on mechanical ventilator					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
Trimmed mean	3.5	3.2	3.1	3.3	3.5

Third dimension					
<b>Dose POCT need special training to achieve optimal outcome</b>					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
<b>Trimmed mean</b>	3.4	3.6	3.5	3.3	3.9
<b>Standard deviation</b>	1.1	1.1	1.2	1.2	1
<b>POCT training can improve quality of results obtained</b>					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
<b>Trimmed mean</b>	3.4	3.7	3.6	3.5	4
<b>Standard deviation</b>	1.2	1.2	1.3	1.2	1
<b>I feel competent to use POCT devices after receiving special training program</b>					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
<b>Trimmed mean</b>	3.6	3.9	3.8	3.6	4.1
<b>Standard deviation</b>	1.1	1.2	1.3	1.1	1.1
<b>Mandatory POCT training programs are necessary to keep me updated in use/deal with POCT</b>					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
<b>Trimmed mean</b>	3.4	3.9	3.8	3.6	4.1

Fourth dimension					
Patient abnormal results will be corrected faster if POCT is used					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
Trimmed mean	3.5	3.8	3.6	3.6	4.1
Standard deviation	1.2	1.1	1.2	1.1	1
Patient condition diagnosis will be more efficient if POCT is used					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
Trimmed mean	3.5	3.5	3.4	3.4	3.6
Standard deviation	1.1	1	1.1	1	1
Patient suffers less (e.g. hypo/hyperglycemia, bleeding, electrolytes disturbances...) when POCT is used					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
Trimmed mean	3.6	3.7	3.6	3.6	3.9
Standard deviation	1.2	1.1	1.3	1	1
Patient's life saved faster when POCT used in emergency situations					
	Doctors	Nurses	Cardiovascular	Oncology	ICU
Trimmed mean	3.7	3.7	3.7	3.6	4.3

	Mean	Std. Deviation
time needed for result to appear	3.87	1.427
importance of getting results fast	3.93	1.488
adverse effect on patient if no POCT	3.88	1.238
POCT need less time to start the test than time needed in lab	3.80	1.391
do you consider POCT results accurate	3.52	1.017
rely on POCT for giving high alert medications	3.12	1.108
blood and blood product use depending on POCT result	3.07	1.118
mechanical ventilator use relying on POCT result	3.24	1.277
special training needed for performing POCT test	3.53	1.141
training can improve quality of results	3.61	1.203
I feel competent with training program	3.75	1.188
necessity of mandatory training	3.73	1.274
fast abnormal results correction	3.68	1.150
diagnosis efficiency with POCT	3.45	1.045
less suffering of patients if POCT is used	3.62	1.142
saving life in emergency situations if POCT is used	3.75	1.172

## Conclusion

It was expected that the majority of participants will strongly agree in using POCT for all purposes, but results show less motivations in accepting POCT results in taking critical decisions such as giving blood and blood products, which indicates that the level of trusting the results of POCT is not high when comparing to the major impact of the decisions taken on patient health.

Further researches are recommended to deeper investigate the importance of POCT use and its impact in health care



Thank you !!