Sri Lakshmi Narayana Institute of Medical Sciences

Date:06.08.2020

From

Dr.Thangapaneerselvam,
Professor and Head,
Department of Biochemistry,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

To

The Dean,
Sri Lakshmi Narayana Institute of Medical College
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Permission to conduct value-added course: Point of care testing

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: Point of care testing in Aug to Sep 2020. We solicit your kind permission for the same.

Kind Regards

Dr.Thangapaneerselvam

FOR THE USE OF DEANS OFFICE

Names of Committee members for evaluating the course:

The Dean: Dr. Rajasekar

The HOD: Dr. Thangapaneerselvam

The Expert: Dr. Santhosa Kumari

The committee has discussed about the course and is approved.

Dean	Subject Expert	HOD
(Sign & Seal)	(Sign & Seal)	(Sign & Seal)

DEAN
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
OSUDU, AGARAM VILLAGE
KOODAPAKKAM POST
PUDUCHERRY - 605 502

DEPARTMENT OF BIOCHEMISTRY
Sri Lakshmi Narayana Institute Of Medical Sciences
PONDICHERRY - 605 502.

PROFESSOR & HOD
DEPARTMENT OF BIOCHEMISTRY
Sri Lakshmi Narayana Institute Of Medical Sciences
PONDICHERRY 605 502

OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.
[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affliated to Bharath University, Chennai - TN]

Circular

07.08.2020

Sub: Organising Value-added Course: Point of care testing . reg

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, **Bharath Institute of Higher Education and Research** is organizing **"Point of care testing"**. The course content form is enclosed below.

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution on or before Aug to Sep 2020. Applications received after the mentioned date shall not be entertained under any circumstances.

Dean

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KOODAPAKKAM POST,
PUDUCHERRY - 605 502.

Encl: Copy of Course content

VALUE ADDED COURSE

1. Name of the programme & Code

Point of care testing

2. Duration & Period

30 hrs & Aug to Sep 2020

3. Information Brochure and Course Content of Value Added Courses

Enclosed as Annexure- I

4. List of students enrolled

Enclosed as Annexure- II

5. Assessment procedures:

Assessment - *Enclosed as Annexure- III*

6. Certificate model

Enclosed as Annexure- IV

7. No. of times offered during the same year:

1, Aug to Sep 2020

8. Summary report of each program year-wise

Value Added Course					
Sl. No	**Course Code**	**Course Name**	**Resource Persons**	**Target Students**	**Strength & Year**
1	BIO-01	Point of care testing	Dr. Thangapaneerselvam Dr.Santhosakumari	MBBS	20 students (Aug to Sep 2020)

9. Course Feed Back

Enclosed as Annexure- V

RESOURCE PERSON

1. **Dr.Thangapaneerselvam**
2. **Dr.Santhosakumari**

COORDINATOR
Dr.Thangapaneerselvam

PROFESSOR & HOD
DEPARTMENT OF BIOCHEMISTRY
Sri Lakshmi Narayana Institute Of Medical Sciences
PONDICHERRY 605 502

Course Proposal

Course Title: **Point of care testing**

Course Objective:

1. Overview of what is a point of care testing
2. Errors in point of care testing
3. Methods to overcome the errors for better patient care
4. Advantages of point of care testing

To sensitise the medical students about the importance and manual mishandling and ignorance of point of care testing for screening and diagnosis of patients sample and improvement of patient care.

Course Outcome: Gained knowledge on point of care testing for the future doctors has possibility of better usage of newer technologies for improving patient care in near future.

Course Coordinator: Dr.Thangapaneerselvam
Course Faculties with Qualification and Designation:
1.Dr. Thangapaneerselvam, Professor & HOD
2.Dr.Santhosakumari, Assistant Professor
Course Curriculum/Topics with schedule (Min of 30 hours)

SlNo	Date	Topic	Time	Hours
1	17.8.2020	Introduction, Background, Objectives	4-5 PM	1
2	18.8.2020	Synonyms for POCT	4-5 PM	1
3	19.8.2020	Activities involved in different phases of analytical procedure	4-5 PM	1
4	20.8.2020	Break down the turnaround time (TAT)	4-5 PM	1
5	21.8.2020	basic requirements of poct	4-5 PM	1
6	22.8.2020	The "Program / Policy"	4-5 PM	1
7	23.8.2020	Key element of a training program	4-5 PM	1
8	24.8.2020	Quality Requirements of a Point of Care Testing Service	4-5 PM	1
9	25.8.2020	Main Function of POC tests	4-5 PM	1
	26.8.2020	POCT instruments	4-5 PM	1
10	27.8.2020	POCT examples	4-5 PM	1
11	28.8.2020	POCT: Challenges	4-5 PM	1
12	29.8.2020	Poct management team	4-5 PM	1
13	30.8.2020	Compliance Review	4-5 PM	1

14	31.8.2020	The Procedure Manual	4-5 PM	1
15	1.9.2020	The 3 Stages of a Diagnostic Test	4-5 PM	1
16	2.9.2020	Training Users in POC Testing	4-5 PM	1
17	3.9.2020	Challenges in Training…	4-5 PM	1
18	4.9.2020	Peer to Peer Training	4-5 PM	1
19	5.9.2020	Training Methods	4-5 PM	1
20	6.9.2020	Competency Assessment of a trainee	4-5 PM	1
21	7.9.2020	POCT – Quest for Quality	4-5 PM	1
22	8.9.2020	Sources of Error - Preanalytical ,analytical and post analytical	4-5 PM	1
23	9.9.2020	External Quality Assessment Schemes of POCT	4-6 PM	2
24	10.9.2020	IQC of POCT and QC plan	4-6 PM	2
25	11.9.2020	Conclusion and summary	4-6 PM	2
26	12.9.2020	Manual training of various POCT instrument	2-4 PM	4
		Total		32

REFERENCE BOOKS:

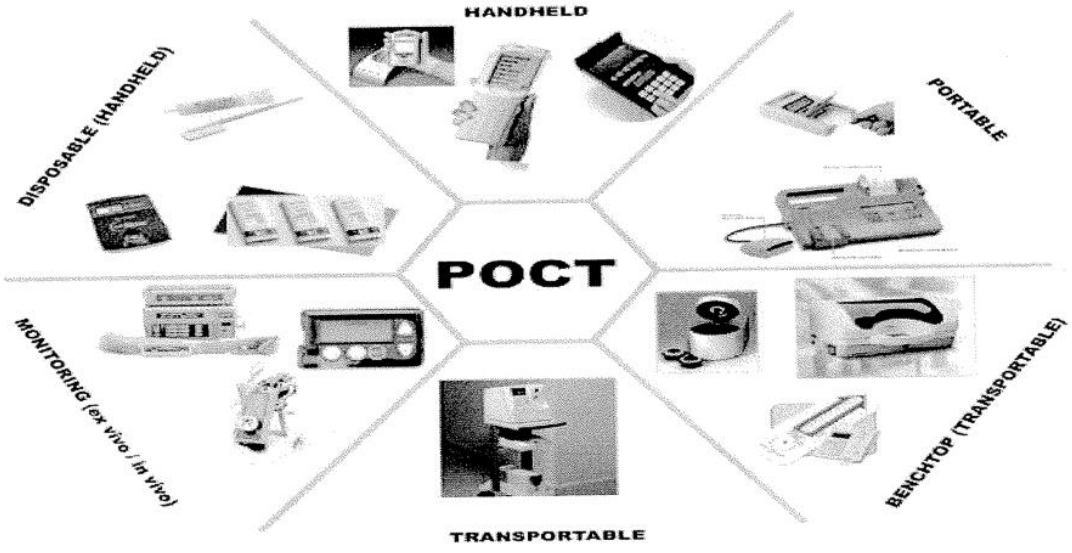
1. Tietz Textbook of Clinical Chemistry and Molecular Diagnostics by Carl A. Burtis, David E Bruns, MD, and Edward R Ashwood, MD

2. Henry's Clinical Diagnosis and Management by Laboratory Methods

Annexure I

POINT OF CARE TESTING

PARTICIPANT'S HANDBOOK



POCT

- POC testing (POCT) is defined as medical diagnostic testing performed outside the clinical laboratory and in close proximity to where the patient is receiving care
- Typically performed by non-laboratory personnel and the results are used for clinical decision making.

Table 1. Synonyms for POCT

POCT	Home testing
Ancillary testing	Self-management
Satellite testing	Patient self-management
Bedside testing	Remote testing
Near patient testing	Physician's office laboratories

Table 2. Activities involved in different phases of analytical procedure

Identifying the correct test
Determining proper conditions (fasting, time of the day, resting, posture, taking of drugs
Request form with clinical data
Taking the sample
Labelling of the tubes
Transport of the sample
Preparation of the sample for instrument
Analysis
QC requirements
Comparing the result against reference ranges
Proceeding the result to the requesting personnel
Interpreting the results (in the case of abnormal results)
Interpretive comments

Break down the turnaround time (TAT)

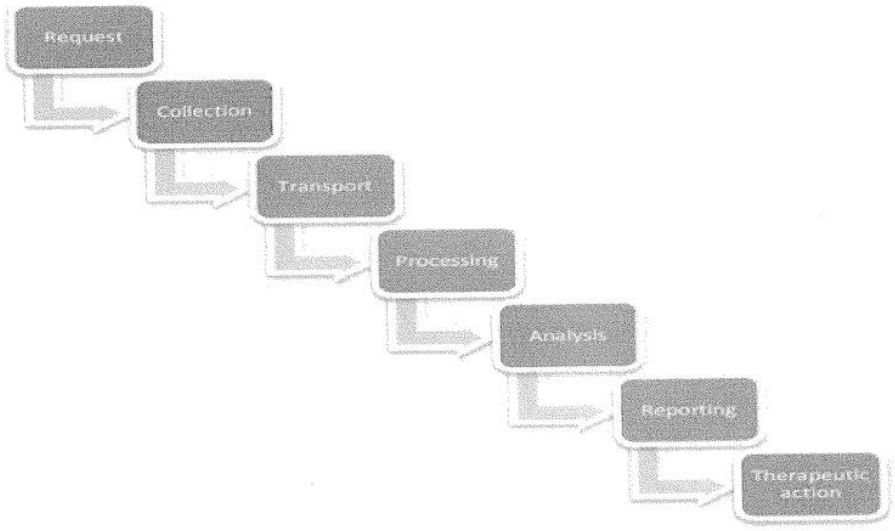


Figure 1. Step involved from doctor order of specific test to result from the laboratory

basic requirements:

- simple to use,
- reagents and consumables are robust in storage and usage,
- results should be concordant with an established laboratory method.

Here are several additional recommendations to manufacturers:

- minimize the number of parts and steps to obtain a result,
- avoid a confusing product design, such as colour-coded swabs, which can affect accuracy,
- eliminate manual specimen application with a metered dose
- make the results easy to interpret,
- make tests that withstand use, like cleaning with bleach or dropping.

Figure5. WHO developed guidelines

A written POC program / policy is important since POCT tends to expand rapidly and can get out of control unless guidelines or policies are in place.

The "Program / Policy" should clearly define:

1. Who is responsible for each part of the program naming the key people? For example:

a. Laboratory POC Coordinator: keep data base of testing personnel,coordinate the training of new personnel, choose testing methods, monitor QC and proficiency programs, provide ongoing coaching to testing personnel in response to daily monitoring, consulting on technical issues, and analysemeter/troubleshooting.

b. Nurse Manager: enforce policies, schedule new employee training, take disciplinary action, if necessary, and schedule annual POC competency evaluation of staff.

c. Education dept. (if it exists): new employee training and annual certification of testing personnel, support committee with agenda and minutes of meetings. Preferably training is done by those reviewing daily results and quality monitoring.

d. Laboratory staff: new employee training, aid in the annual certification of testing personnel, download and/or review QC data,verify equipment function and maintenance.

2. Where the testing will be performed and who will perform it?

3. For what purpose each type of POCT will be used, i.e., screening,diagnosis, treatment?

4. Who will chose the methodologies used, i.e., lab, Point of care Coordinator (POCC)?

5. What method validation procedures will be performed prior to implementation and who will perform the validation?

6. Reporting procedures.

7. Staff training, continued competency programs and feedback/communication with the end users.

8. Quality assurance monitoring protocols including QC protocols.

9. Proficiency testing program.
10. Obtain and maintain the appropriate licensure and compliance with regulations.
11. Protocol for requesting new/additional services.
12. Operational budget

Table 4. Key elements of a training program

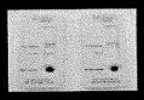
Understanding the concept of text (pathophysiological, clinical requirements, action taken after performing the test, nature of the test)
Patient preparation (biological variability, lifestyle, therapy, diurnal variation)
Sample requirement and specimen collection
Preparation of instrument
Performance of test
QC
Documentation
Reporting the result
Interpretation of the result
Health and safety issues (specimen collection, disposal of sample, cleaning of the instrument)

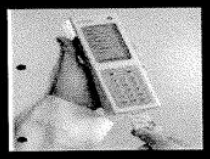
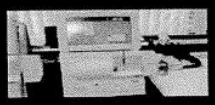
Quality Requirements of a Point of Care Testing Service

Main Function of POC tests

1. To provide rapid results
2. Results should improve immediate patient management

Some POCT instruments.....

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Examples of Point of Care Tests

- pH
- Blood gases: pCO2, pO2
- Lactate
- Glucose
- HbA1c
- Urea, creatinine
- Cholesterol, TGs
- BNP,Troponin, CK-MB,
- Myoglobin
- Bilirubin
- PTH
- Drugs of abuse
- Occult blood (fecal or gastric)
- Urinalysis
- hCG, ketones, glucose,
- Leukocytes, pH, nitrite,
- Bacterial/viral Infections
- Coagulation
- Hemoglobin/ hematocrit

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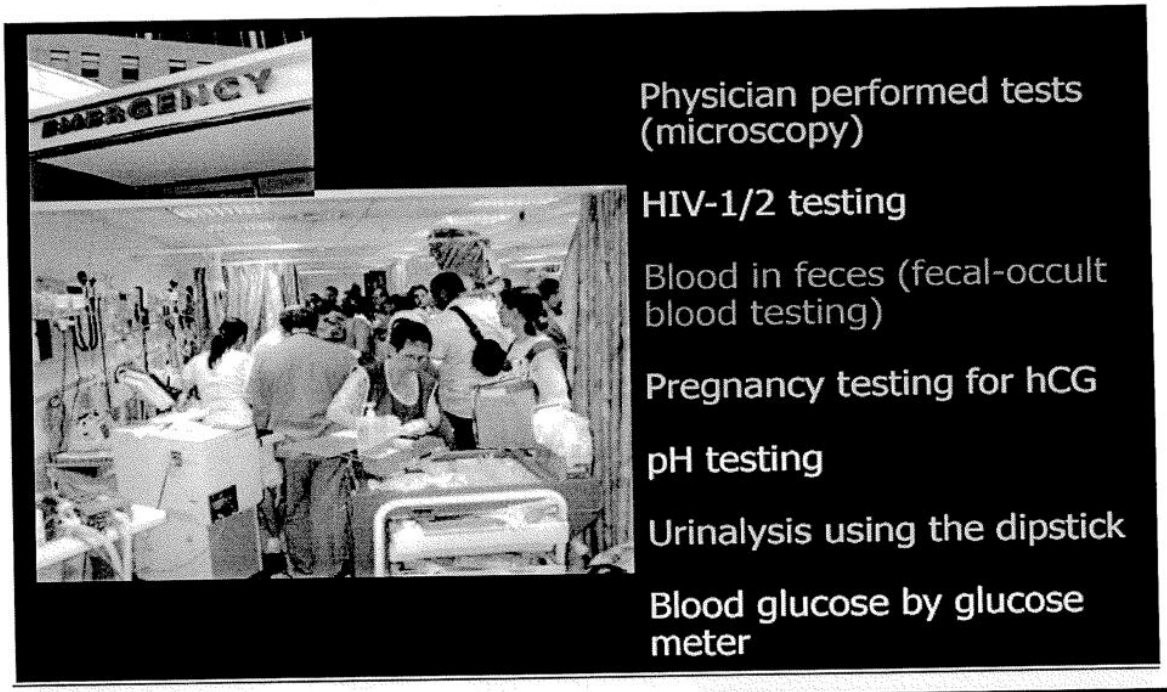
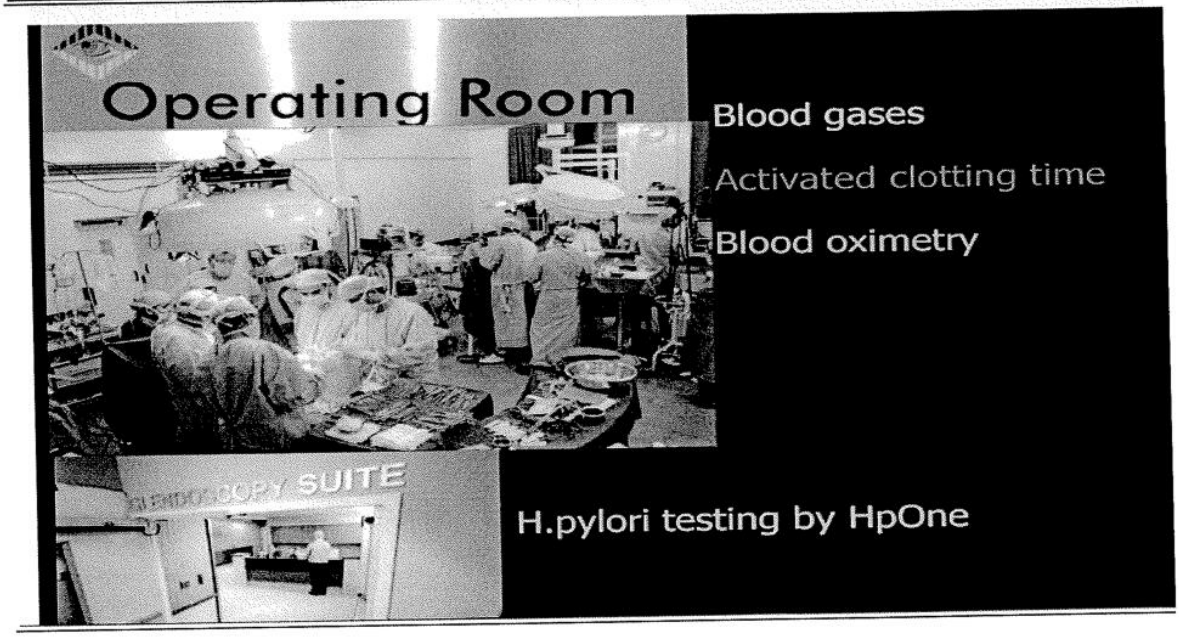


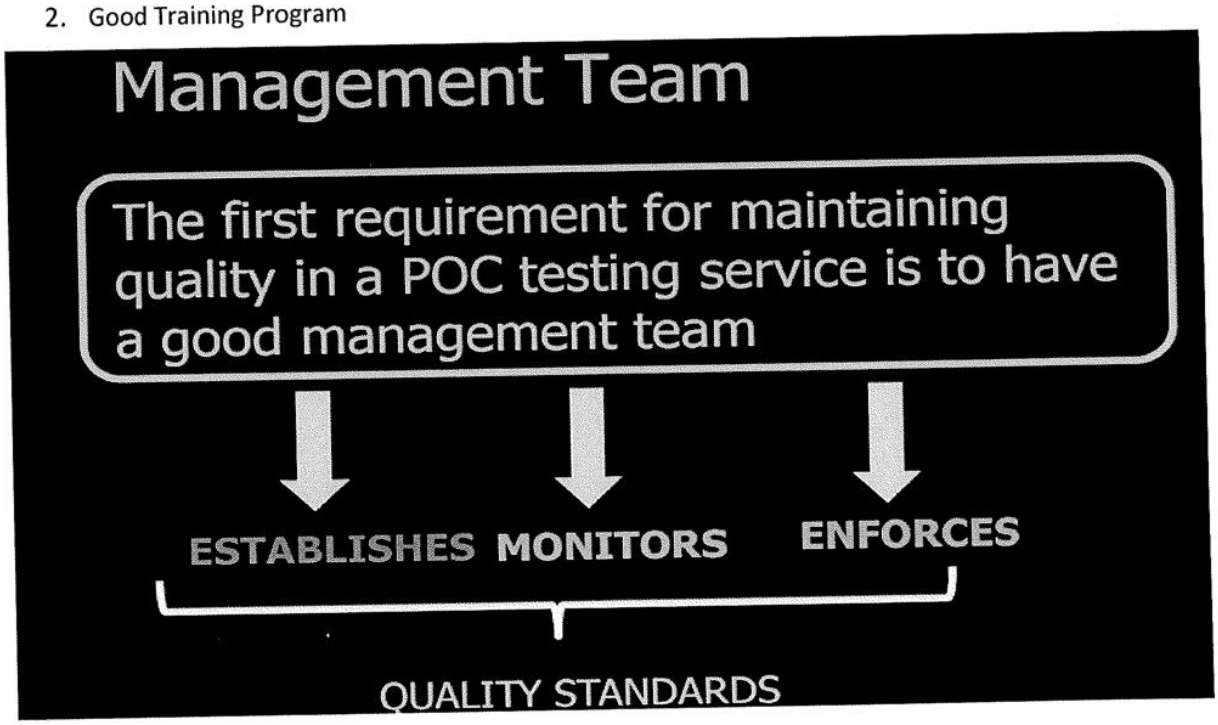


POCT: Challenges

1. Staff training and competency maintenance
2. Testing without institutional review or approval
3. Noncompliance with procedures (specimen labeling, QC, proficiency testing etc.)

So what does a POC Testing s Service need?

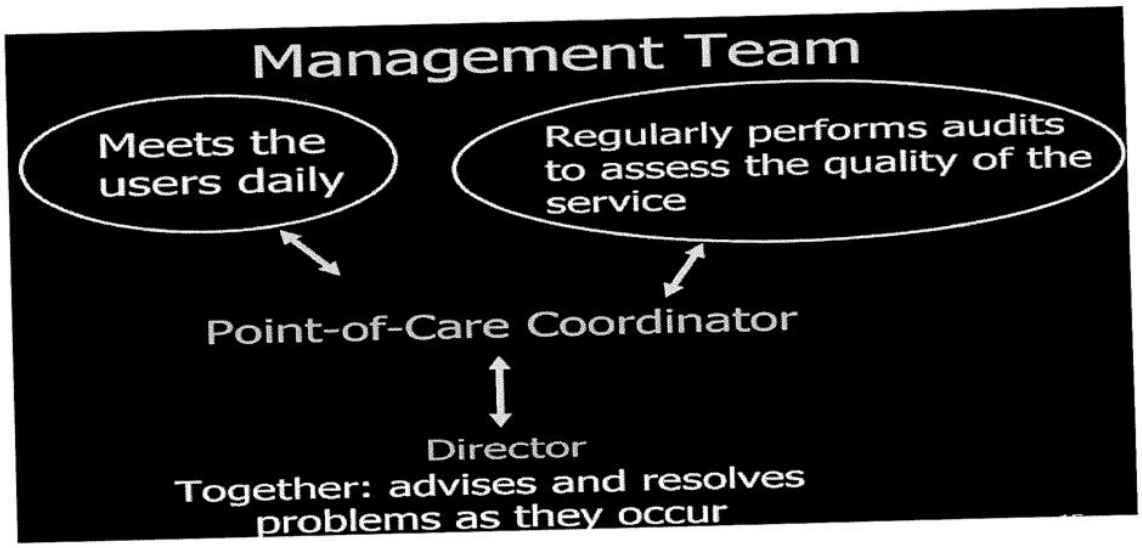
1. Good Management Team
2. Good Training Program



Management Team

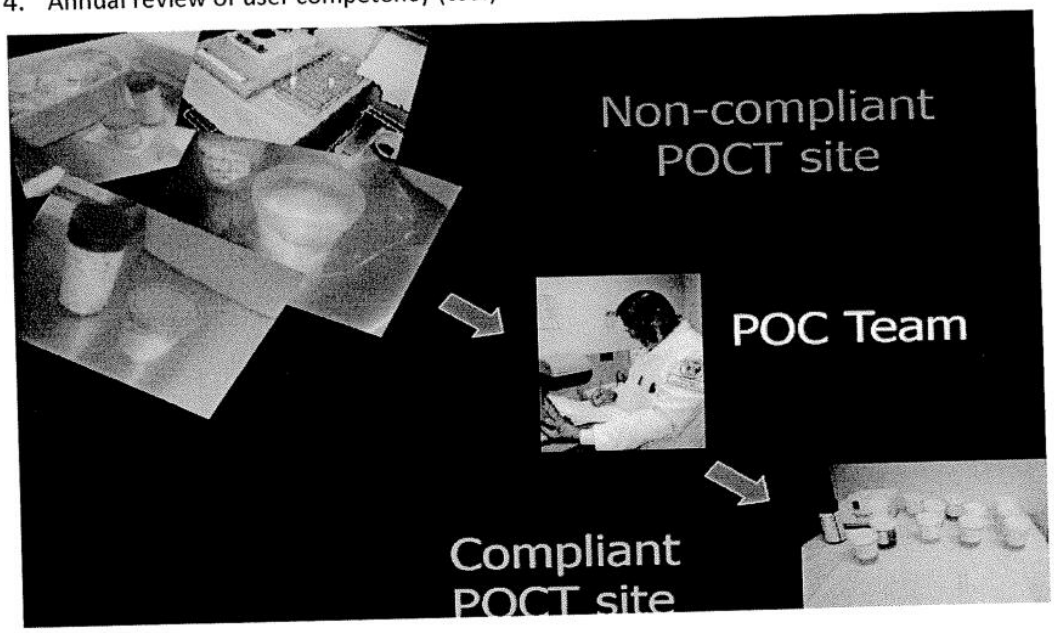
- At the bare minimum this team needs:

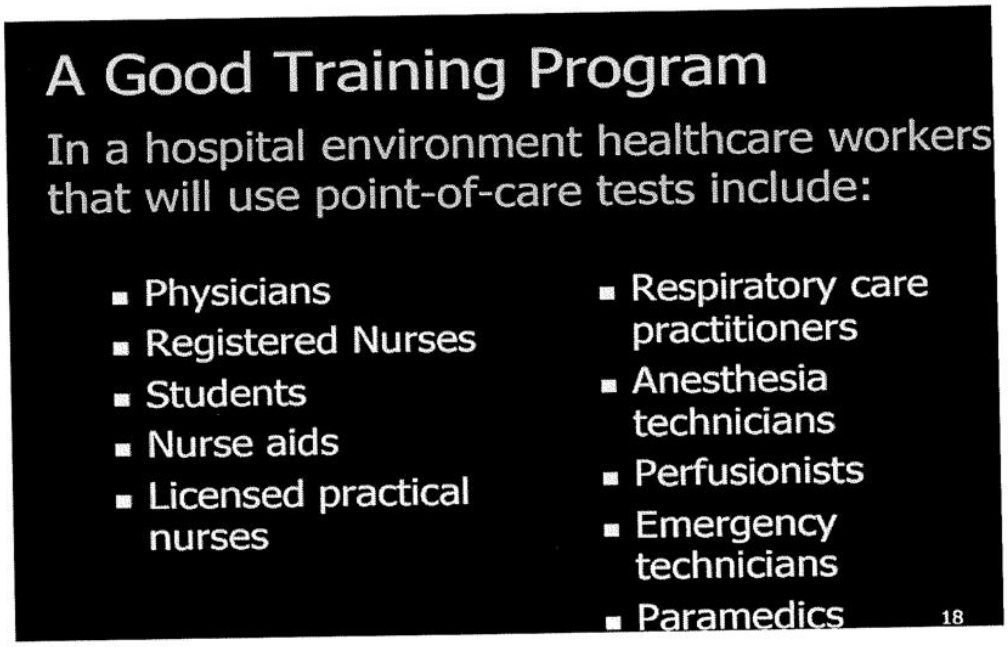
1. DIRECTOR or equivalent that has the authority to cause institutional change
2. POINT-OF-CARE COORDINATOR who is the instrument for implementing that change



Compliance Review

1. Weekly review of POCT test stations
2. Compliance with written protocol?
3. Corrective action for outlier results?
4. Annual review of user competency (test)





The Procedure Manual

- It is important that POCT users receive the same information regarding the test to ensure consistency of practice: This is the function of the: PROCEDURE MANUAL
- Written procedures reduce variability, and its variability in test procedures between operators that leads to errors and discrepant results.

The manual should not only mention the procedure but should be more comprehensive.

- Scope (who can perform the test)
- Principles of the test
- Specimen requirements
- Reagent/Kit storage conditions
- Procedure for performing Quality Control
- Instrument maintenance (if needed)
- Procedure for performing the test
- Safety precautions
- Test result interpretation
- Test limitations / interferences
- Documentation of the test result

The 3 Stages of a Diagnostic Test

A diagnostic test can be divided into three stages:

the pre-anlaytical stage

analytical stage

post analytical stage

Each step is susceptible to errors that can significantly affect the result.

This should be mentioned in the Procedure Manual

Training Users in POC Testing

- Once the procedure manual has been created it is necessary that all users have read it and this process should be documented.
- The salient features for each test need to be understood and demonstrated during training.
- This would be followed by a competency assessment which would be the exit examination before the healthcare worker can test patients.

Challenges in Training...

Management of Training:

1. Number of staff requiring training be in the thousands
2. A high turnover rate
3. Nursing staff can be transferred between different departments
4. Poor communication between nursing administration and POC coordinator.

Peer to Peer Training

1. Nurse trainer may not be aware of all the preanalytical, analytical and post-analytical errors that could occur when using the POC test.
2. They may also be performing the test in a different way that could be prone to a higher error rate.
3. Furthermore, from a regulatory standpoint, the trainer would need to have passed their competencies as well.

The Designated Trainer

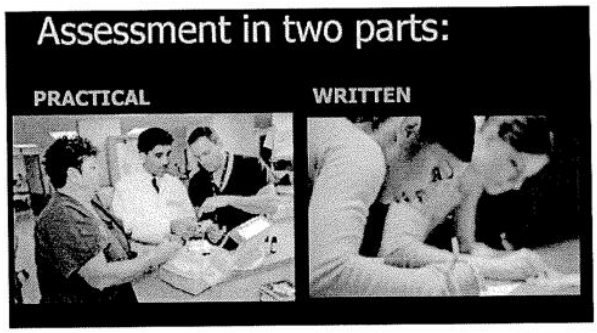
1. Better way to train new hires
2. This designated trainer would aware of all the issues that could occur with the test and would be up-to-date in their competencies.

Training Methods

1. Direct classroom demonstrations and observations
2. Supplemented with self-learning , elearning, lectures via webcam, power point, and a training kit containing manual, laminated posters/aids and CDROM.

Competency Assessment

The aim: To ensure healthcare workers can not only generate quality results consistently from the instrument but can correctly manage them in the decision making process.

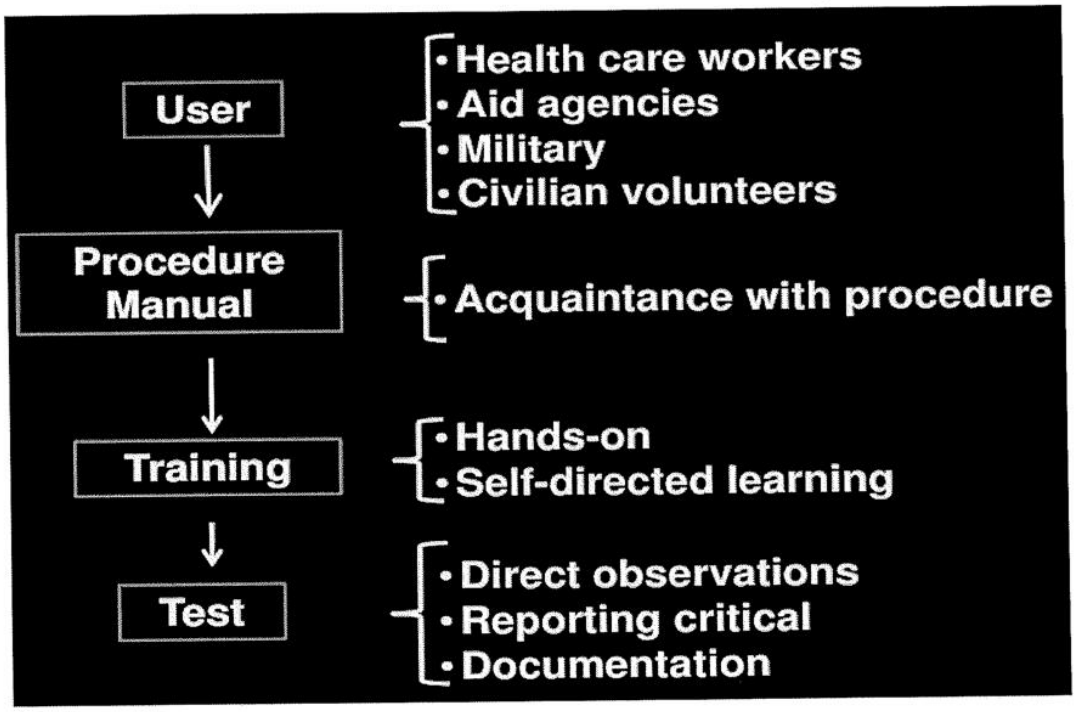


Practical Assessment

1. Direct observations of patient testing:
2. Using a specimen (previously analyzed specimen, external proficiency testing material, quality control material or calibrator)
3. if applicable include any patient preparation
4. if applicable include any specimen handling and processing
5. Recording and reporting test results.
6. If applicable, direct observation of instrument maintenance and function checks.
7. Assessment of problem solving skills (reviewing temperature and QC logs; knowledge of common error messages; knowing who to contact for help).

Written Assessment

1. Multiple Choice type questions
2. True / False
3. Determine what is the "pass" grade
4. Users must reach this satisfactory level in the written examination.



POCT – Quest for Quality

1. Results from POCT dictate the next step in a diagnostic algorithm
2. Errors in laboratory testing occur in preanalytical and postanalytical stages → also true for POCT
3. The same rigorous quality assurance procedures apply as if testing were performed in the main laboratory

Sources of Error - Preanalytical

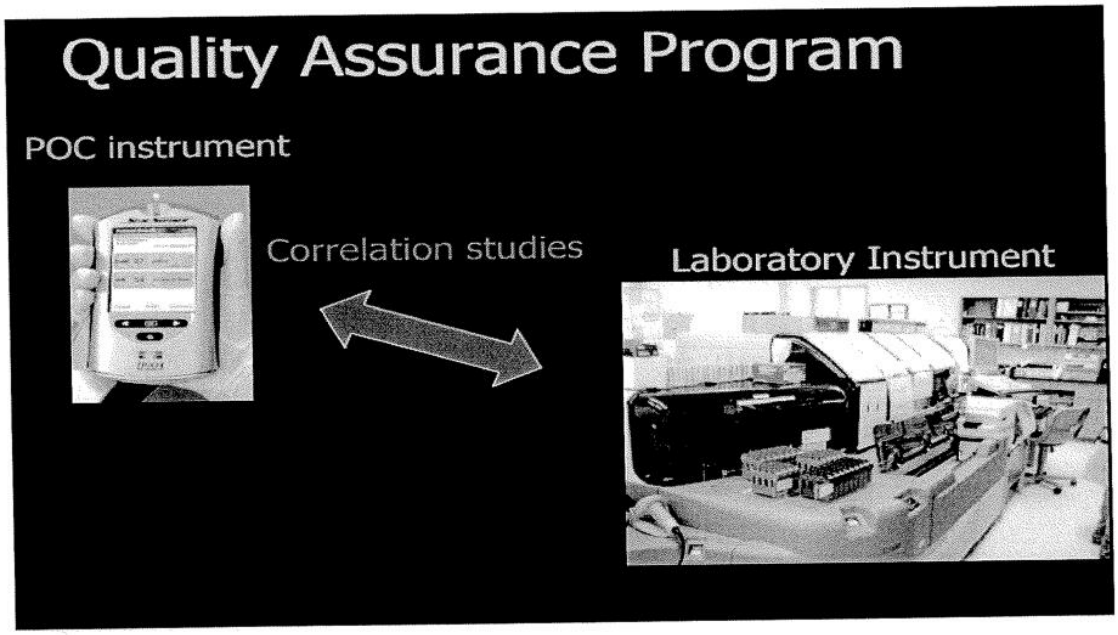
a. Test ordering
b. Patient identification
c. Specimen collection
    i. Arterial vs venous vs capillary
d. Specimen identification
e. Fasting vs non-fasting
f. Wrong anticoagulant
g. Contamination with IV fluid
h. Hemolysis
i. Inadequate sample

Sources of Error - Analytical

1. Inadequate mixing of sample
2. Air bubbles
3. Environmental conditions
4. Outdated reagents (deterioration)
5. Instrument failure
6. QC out of limits
7. Inadequate maintenance/calibration

Sources of Error - Postanalytical

1. Incorrect reading of results
2. Result outside the linear limit
3. Non-recognition of interferences
4. No result recorded
5. Result recorded on wrong patient chart



External Quality Assessment Schemes

EQA schemes are very useful in helping to:

- Identify if healthcare workers are adequately trained.
- Identify if there are procedural deficiencies mentioned in the product insert but omitted in the final procedure.
- Identify procedural deficiencies not mentioned in the product insert.

More on EQA Program

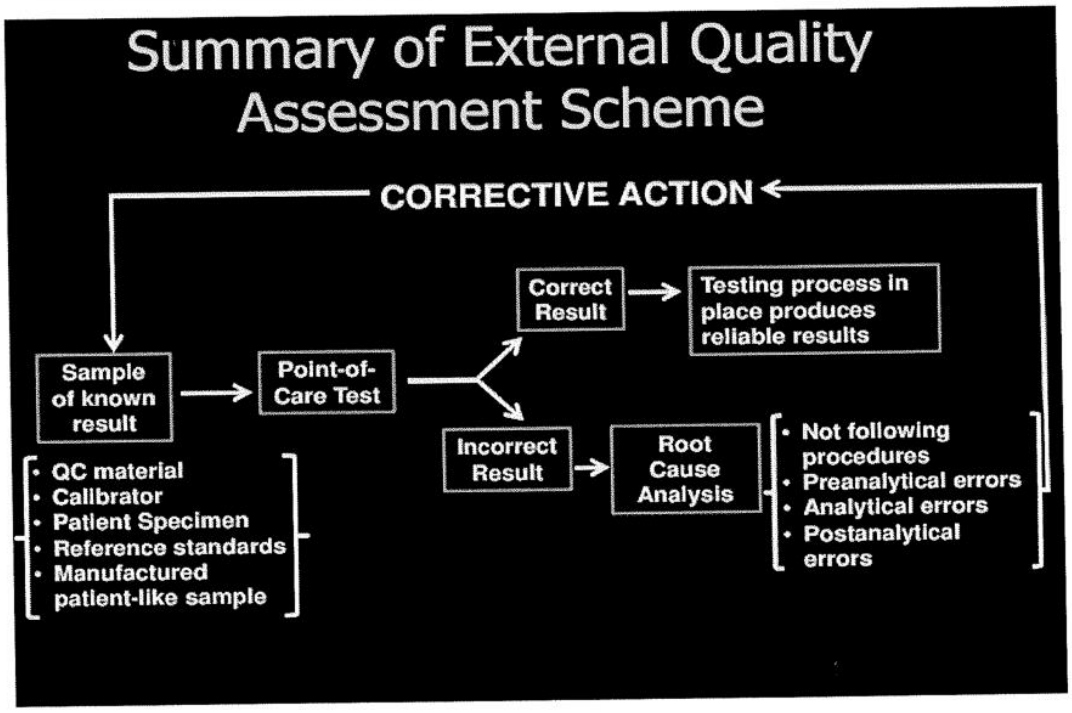
- Sample provided by e.g. College of American Pathologists (CAP)
- Sample is treated like a patient sample
- Results are sent to CAP
- Your result is compared to others using the same instrument

When External Samples are Not Available

- Patient samples can be split and either sent to another instrument or be used by another operator.
- The advantage of using patient samples is that matrix effects are eliminated as real patient samples are being used.

Criteria for Split Sample Studies

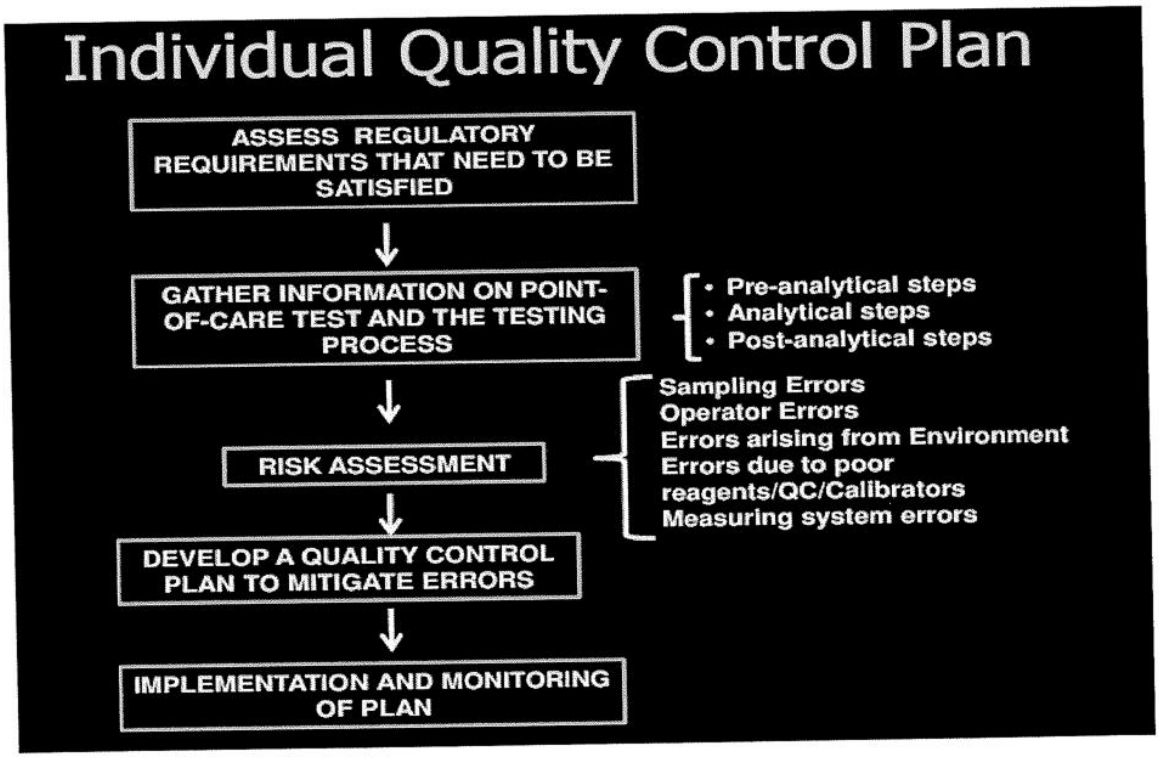
- It is important to define criteria for acceptability of the sample correlation. This can be obtained from published guidelines or using ± 2 or 3 standard deviations from the mean from quality control data for quantitative assays.



Quality Control

1. Running quality controls (QC) is a mandatory requirement for any point-of-care test because they are designed to detect problems in the test system.

2. They are tested before or alongside a patient test and should always be run according to the manufacturer's instructions in the product insert.
3. Their use monitors test kit and reagent integrity.
4. For example a QC failure could arise
    a. from incorrect storage of kits and/or also
    b. be due to poor techniques or procedures.
5. Thus QC gives assurance that the device is working and the testing is being performed correctly.
6. Non-instrumented qualitative point-of-care tests such as pregnancy tests, HIV tests, rapid strep A or flu tests typically have two types of controls:
7. Internal controls - built into the test system and are run whenever a patient sample is tested.
8. Confirm that the test system is working, and for lateral flow methods, sufficient specimen has been added to the well to allow the sample to migrate correctly through the strip.
9. External controls are run just like a patient sample
10. They test the entire testing process including:
    a. Specimen collection
    b. Specimen application
    c. Result documentation



Developing an IQC Plan

- Assessing any regulatory or accreditation requirements that need to be satisfied.
- Gathering information about the instrument and the testing process for the analyte (s) from the manufacturer.
- Risk Assessment - mapping the process to identifying procedural weaknesses.
- Developing a Quality Control Plan to mitigate errors identified in the risk assessment.
- Implementation and monitoring the Quality Control Plan to ensure that it is always appropriate, making adjustments as necessary

Stage in which Failure Occurs	Problem	Effect	Remedy	Prevention	Monitor
Pre analytical	Wrong reagent lot used	Incorrect result	Repeat using the correct lot	Operator training	Audit frequency to target operator for training
Analytical	Reagents expired	Incorrect result or no reaction	Verify expiration date/storage conditions; rerun with non-expired reagents	Train operator to check dates and label any new expiration date as required by manufacturer	Audit reagents to ensure not being used beyond expiration date. Audit operators training
Post analytical	No indication on patient chart that physician was notified of critical or abnormal result	Delayed treatment	Give treatment or retest	Operator training on handling critical and abnormal results	Audit frequency of critical and corresponding notification

ANNEXURES II

STUDENT LIST

DEPARTMENT OF BIOCHEMISTRY

S.No	Reg No	Name	Signature
1	U15MB351	SAKTHI RENGARAJAN. S	
2	U15MB352	SAKTHIYANATHAN .S	
3	U15MB353	SANDIYA. T	Sandiya
4	U15MB354	SARANKUMAR. B	
5	U15MB355	SARANYA R.E	Saranya
6	U15MB336	PADMA SUNDARI.P	P
7	U15MB337	PIRAI NILA. M	Pirai Nila
8	U15MB338	PRAJEETH BALAGE. B	Prajeeth.B
9	U15MB339	PRAKASH .M	M. Prakash
10	U15MB340	PRATIBA SHRUTHY. M	
11	U15MB344	RAGHAVI .B.R	Raghavi
12	U15MB345	RAJESH .K	Rajesh. K
13	U15MB346	RAKESH.R	
14	U15MB331	NAVEEN ANUSH .R	N Anush
15	U15MB332	NAYANA.G.CHANDRAN	N. G. Chandran
16	U15MB333	NIVEDHITHA .A.N	Nivedhitha
17	U15MB334	NIVETHA. S	Nivetha
18	U15MB368	SHIYAM. M	Shiyam. M
19	U15MB369	SHRIRAAM .K	
20	U15MB370	SIVA SAKTHI VELAN .A.V	S.S. Velan

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Sri Lakshmi Narayana Institute Of Medical Sciences
PONDICHERRY

Sandija . T

1. **Which of the following examples is considered point-of-care testing?**
   - Drawing blood in the ambulance and sending it to the hospital's lab.
   - Obtaining blood cultures in the emergency department.
   - ✓ Using a glucometer to obtain a whole blood glucose level.
   - Obtaining a rectal temperature during a patient transport.
2. **One of the greatest causes of errors in the accuracy of point-of-care testing is:**
   - improper equipment storage.
   - poor initial training.
   - ✓ inadequate record keeping.
   - failure to follow proper procedures.
3. **CLIA regulations have not been established to regulate:**
   - laboratory data result interpretation.
   - technician training requirements.
   - ✓ record keeping.
   - patient safety.
4. **Michael is using a CLIA-waived glucometer. What must he complete each day prior to using the glucometer for patient care?**
   - A written competency.
   - A temperature control log.
   - ✓ A correlation to another device.
   - High and low quality control testing.
5. **Which of the following lactate levels is considered an indication of serious illness when managing a patient with ongoing infections?**
   - 2.4 mmol/L
   - 1.9 mmol/L
   - 3.5 mmol/L
   - ✓ 4.6 mmol/L
6. **A patient experiencing a GI bleed could be expected to have an abnormal:**
   - potassium
   - serum lactate
   - hematocrit & hemoglobin
   - ✓ arterial blood gas
7. **Patients placed on diuretics as a result of heart failure risk developing an abnormal:**
   - potassium
   - serum lactate
   - arterial blood gas
   - ✓ hematocrit & hemoglobin

8. **During acute blood loss, the hematocrit and hemoglobin can be expected to begin dropping within about:**

- 15 minutes
- 45 minutes
- 1 hour
- 4-6 hours

9. **an elevation in which of the following is indicative of an acute coronary event?**

- Serum lactate
- Troponin-I
- Potassium
- Calcium

Rajesh. K

1. **Which of the following examples is considered point-of-care testing?**
   - Drawing blood in the ambulance and sending it to the hospital's lab.
   - Obtaining blood cultures in the emergency department.
   - Using a glucometer to obtain a whole blood glucose level.
   - Obtaining a rectal temperature during a patient transport.
2. **One of the greatest causes of errors in the accuracy of point-of-care testing is:**
   - improper equipment storage.
   - poor initial training.
   - inadequate record keeping.
   - failure to follow proper procedures.
3. **CLIA regulations have not been established to regulate:**
   - laboratory data result interpretation.
   - technician training requirements.
   - record keeping.
   - patient safety.
4. **Michael is using a CLIA-waived glucometer. What must he complete each day prior to using the glucometer for patient care?**
   - A written competency.
   - A temperature control log.
   - A correlation to another device.
   - High and low quality control testing.
5. **Which of the following lactate levels is considered an indication of serious illness when managing a patient with ongoing infections?**
   - 2.4 mmol/L
   - 1.9 mmol/L
   - 3.5 mmol/L
   - 4.6 mmol/L
6. **A patient experiencing a GI bleed could be expected to have an abnormal:**
   - potassium
   - serum lactate
   - hematocrit & hemoglobin
   - arterial blood gas
7. **Patients placed on diuretics as a result of heart failure risk developing an abnormal:**
   - potassium
   - serum lactate
   - arterial blood gas
   - hematocrit & hemoglobin

8. **During acute blood loss, the hematocrit and hemoglobin can be expected to begin dropping within about:**
   - 15 minutes
   - 45 minutes
   - 1 hour
   - 4-6 hours
9. **an elevation in which of the following is indicative of an acute coronary event?**
   - Serum lactate
   - Troponin-I
   - Potassium
   - Calcium

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CERTIFICATE OF MERIT

This is to certify that **PRAKASH .M** has actively participated in the Value Added Course on **Point of care testing** held during Aug 2020 – Sep 2020 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Dr. Santhosakumari

RESOURCE PERSON

Sri Lakshmi Narayana Institute of Medical Sciences
PONDICHERRY - 605 502.

Dr. Thangapaneerselvam

COORDINATOR

PROFESSOR & HOD
DEPARTMENT OF BIOCHEMISTRY
Sri Lakshmi Narayana Institute of Medical Sciences
PONDICHERRY - 605 502

Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Bharath Institute of Higher Education & Research

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CERTIFICATE OF MERIT

This is to certify that **SAKTHI RENGARAJAN. S** has actively participated in the Value Added Course on **Point of care testing** held during Aug 2020 – Sep 2020 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Dr. Santhosakumari

RESOURCE PERSON

DEPARTMENT OF BIOCHEMISTRY
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PONDICHERRY 605 502.

Dr. Thangapaneerselvam

COORDINATOR

PROFESSOR & HOD
DEPARTMENT OF BIOCHEMISTRY
Sri Lakshmi Narayana Institute Of Medical Sciences
PONDICHERRY 605 502

Course feedback form

Course title:

Date : 31/8/2020

Course code: BIO - 01

Department: Biochemistry

S.no	Design of the course	1	2	3	4	5
1	The objective of the course clear to you			✓		
2	The course contents met with your expectations			✓		
3	The lecture sequence were well planned			✓		
4	The lectures were clear and easy to understand			✓		
5	The audiovisual teaching aids were effectively used					
6	The instructor's encouraged interaction and was it helpful			✓		
7	The contents were illustrated with examples			✓		
8	Overall Rating of the course			✓		

*** Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory**

Suggestions if any:

Signature

Course feedback form

Course title: Date 4 · 8 · 2020

Course code: BIO - 01

Department: Biochemistry

S.no	Design of the course	1	2	3	4	5
1	The objective of the course clear to you					✓
2	The course contents met with your expectations					
3	The lecture sequence were well planned				✓	
4	The lectures were clear and easy to understand					
5	The audiovisual teaching aids were effectively used					✓
6	The instructor's encouraged interaction and was it helpful				✓	
7	The contents were illustrated with examples					
8	Overall Rating of the course					✓

*** Rating: 5 – Outstanding; 4 - Excellent; 3 – Good; 2– Satisfactory; 1 - Not-Satisfactory**

Suggestions if any:

Signature

Date: 30.09.2020

From

Dr.Thangapaneerselvam
Professor and Head,
Department of Biochemistry,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Through Proper Channel

To

The Dean,
Sri Lakshmi Narayana Institute of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Completion of value-added course: Point of care testing- reg.,

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: Point of care testing from Aug to Sep 2020 for 20 students. We solicit your kind action to send certificates for the participants that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards,

Dr.Thangapaneerselvam

Encl: Certificates

Photographs