Practical Tips for POCT

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Objectives

- Define POCT
- Examine quality concerns with POCT
- Offer tips for managing POCT


1211


Children's Hospital

POCT Definition

- Clinical laboratory testing conducted close to the site of patient care, typically by clinical personnel whose primary training is not in the clinical laboratory sciences or by patients (self-testing).
- POCT refers to any testing performed outside of the traditional, core or central laboratory.
- Nichols JH (editor) National Academy of Clinical Biochemistry Laboratory Medicine Practice Guidelines: Evidence Based Practice for Point of Care Testing. AACC Press: 2007.

POCT is a Complex System

- Laboratory
  - One site
  - Limited instrumentation to perform bulk of testing
  - Limited staff, focused on same equipment daily
  - Staff trained in laboratory skills
- POCT
  - Dozens of sites, hundreds of devices and thousands of operators
  - Staff are clinically focused on patient not on equipment
  - Staff do not have laboratory training background
  - Testing delegated to lower level staff (TAs, MAs)

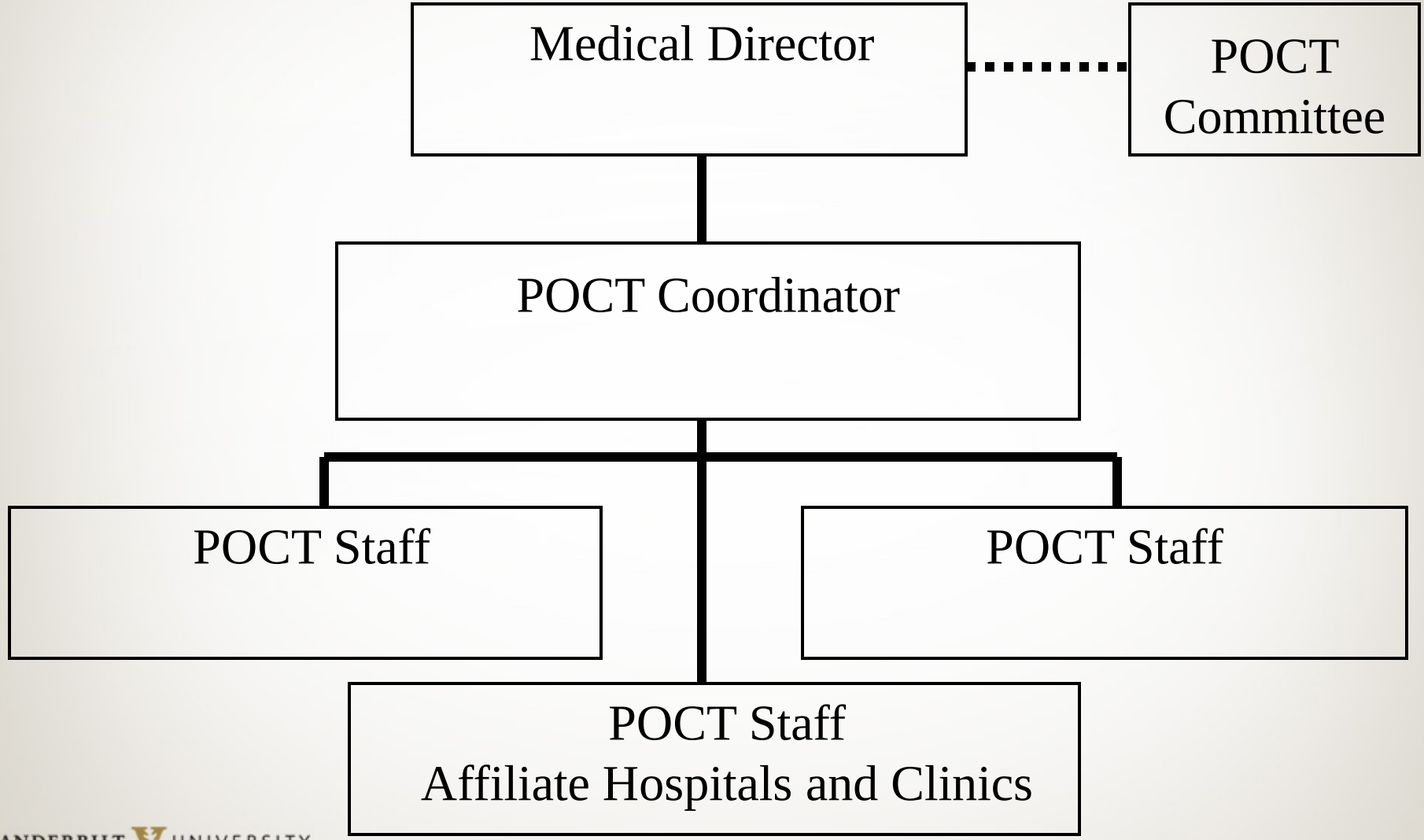
Tip: Develop a POC Structure

- The number of devices people and testing performed POCT in an institution requires an organization and management structure
- Many institutions have a POC Coordinator (often a lab staff) and POCT Committee to oversee practice
- POCT Committee can depersonalize the review process for test approval, inspection preparation and actions to deficiencies.

Why Do We Need a POCT Program?

- Organize the activities involving POCT
- Meet federal and accreditation regulations
- Identify what tests are conducted outside the formal core laboratory
- Approve/disapprove new test requests
- Determine who is performing POCT
- Document staff competency
- Manage POCT test results

POCT Management



VANDERBILT UNIVERSITY MEDICAL CENTER

POCT Management
Vanderbilt Medical Center

Rehabilitation

Ambulances

Hillsboro Clinic

Helicopters

Vanderbilt Medical Center

Vanderbilt POCT

Williamson County Medical Center

Vanderbilt Psychiatric Hospital

Children's Hospital

Vanderbilt Medical Group Practices

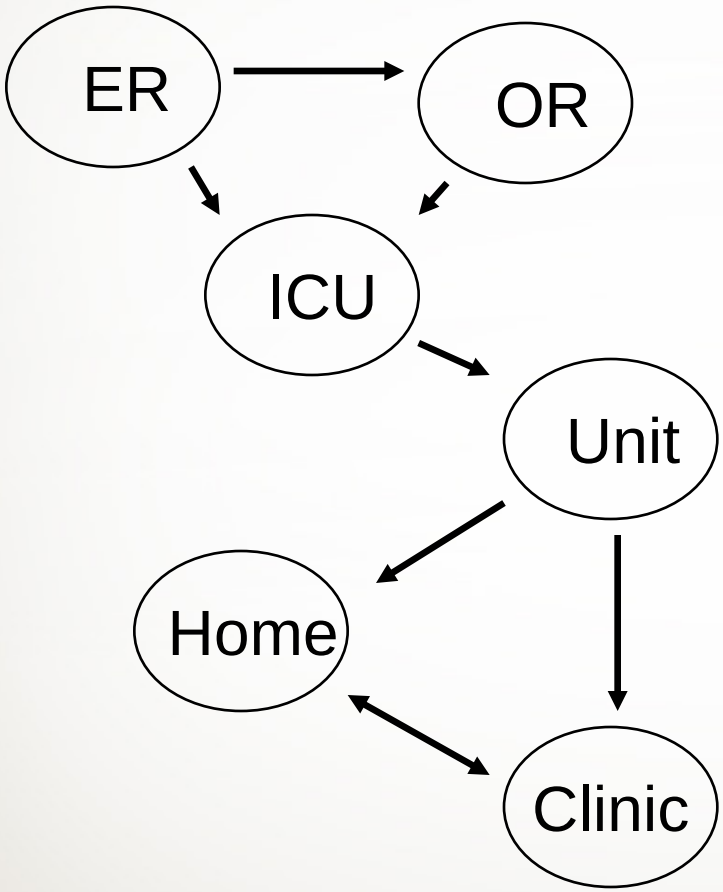
One Hundred Oaks Clinic

Department / Area / Clinic	# [Certificates filed under cost center #]	Name of Accrediting/ Certifying Agency	Medical Director	D. Trainer	PHONE	Address	Test Performed	Manager
			CAP Proficiency Au # (If applicable)					
1. FAMILY PRACTICE (First Floor)	20323XXXX	CLIA 44XXXX Exp.7/11/13	Dr. Warren MD	**Louis PC**	**555-1234**	, TN. 37067	Flu, strep, Clinitek Status, urine pregnancy, Sure Step glucose Hemocue, Hemocult, PPM KOH, wet preps,	Loretta Lynn
2. PEDIATRIC CLINIC (Second Floor)	20311XXXX	CLIA 44XXXX Exp. 2/14/14	Dr. Miller MD	**Kim Jones RN**	555-2121		Clinitek Status Urine, DCA HgBA1C Advantage Sure Step, Glucose, Flu, Strep, Hemocult	Ms. Price
3. INTERNAL MEDICINE (Third Floor)	20322XXXX	CLIA 44XXXX Exp. 7/10/13	Dr. Smith MD	**Ron Night**	**555-0102**	TN 37067	Flu, strep, Clinitek Status, urine pregnancy, Sure Step glucose, Hemocult PPM KOH, wet preps	Jackie Chan
GI CLINIC (third floor)	20326XXXX	GI I IM share lab CLIA	Dr. Jones MD	**POCT**	555-1212	Third Floor Franklin TN 37067	Hemocult	Lori Done

Tip: Standardize Methods

- Standardize instrumentation and methods across the health system
  - Minimizes number of different devices
  - One policy can be shared amongst sites
  - Central management system (ie oversight and data management)
  - Same methodology, clinical limitations
  - Share reference intervals (normal values)
  - Simplifies training and competency, float staff

Continuity of Care



POCT

↕

Critical Care

↕

Core Lab

↕

POL - Clinic

Tip: Define Staff Roles for POCT

- Nursing and Clinical Staff:
  - Ensure staff are trained/competent
  - Perform and document device QC
  - Rotate stock/destroy expired reagents
  - all other aspects of the day-to-day management of the testing process
- Laboratory:
  - Drafts procedures and training checklists
  - Validates new reagent/QC lots
  - Arranges for repair/replacement of devices
  - Provides technical, training, consultative and QI support of clinical staff and testing process

Case Study: Understanding Staff Roles

- Who has heard the similar statements?
  - “I don’t have the staff to take care of this”
  - “POCT is a laboratory function”
  - “I’m being forced to do POCT by the clinicians”
  - “I’ve never hurt anyone doing it this way before, why should I change my practice?”
  - “Quality reports criticize the way I do my job.”

Nursing Roles

- Physical care
- Emotional care
- Spiritual care

Technology and Nursing: A "Love-Hate" Relationship

- Technologic Optimism: Technology seen as linked to the science of nursing

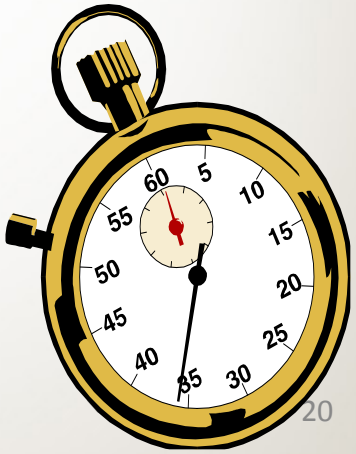
- Technologic Romanticism: Technology seen as detracting from the art of nursing

Technologic Optimism: Bedside Testing

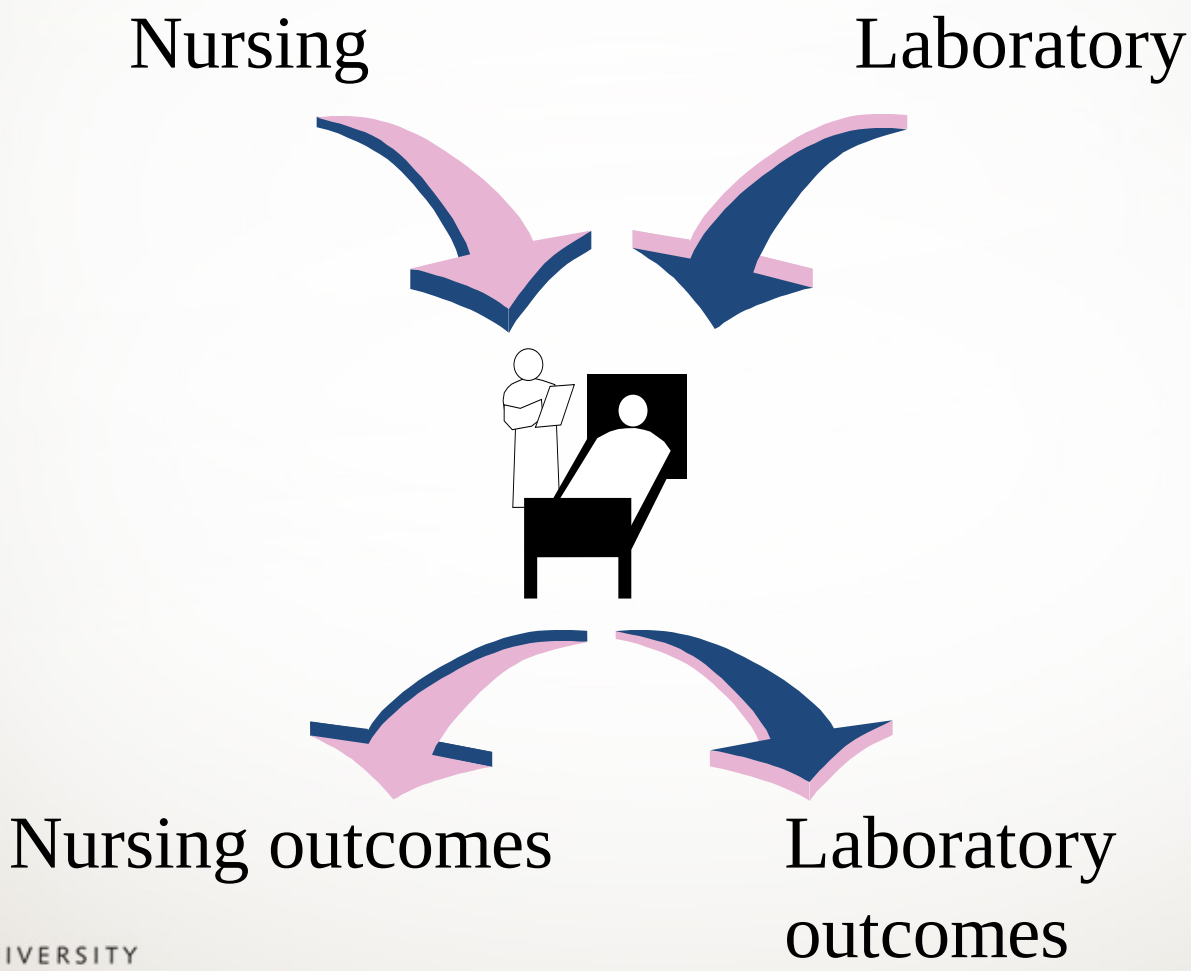
- Easily assimilated into patient care
- More rapid clinical decision-making
- Decreased cost to patient

Technologic Romanticism: Bedside Testing

- Not easily assimilated into patient care
- Time- and labor-intensive for nursing
- Takes nurses away from the bedside



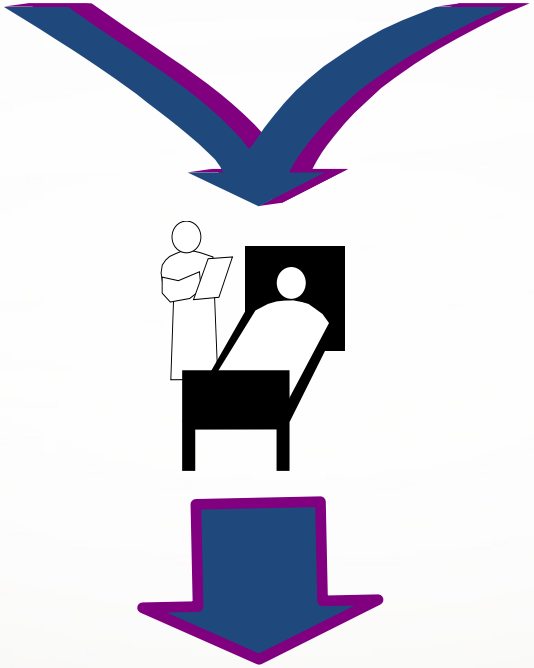
Multidisciplinary Teams and Point-of-Care Testing



Interdisciplinary Teams and Point-of-Care Testing

Nursing

Laboratory



Patient outcomes

POCT: Nursing Perspectives

Laboratory

- Restricted tasks
- Large test runs: “factory environment”

Nursing

- Broader responsibilities
- Limited test runs: “boutique environment”

POCT: Nursing Perspectives

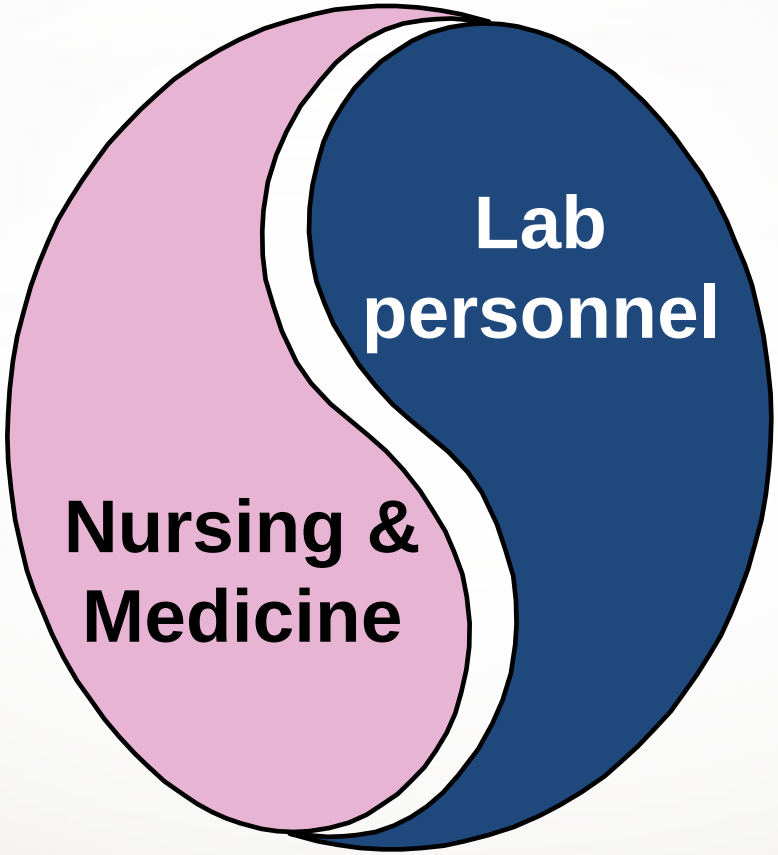
Laboratory

- Process oriented
  - Calibration
  - Accuracy
  - Precision

Nursing

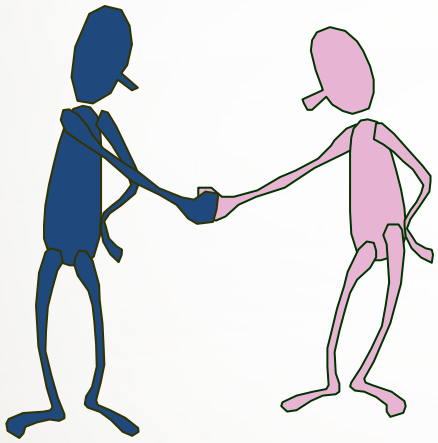
- Outcome oriented
  - Time spent with patient
  - Patient goal achievement

Building an Interdisciplinary Team



Service Standards

Customer Relations



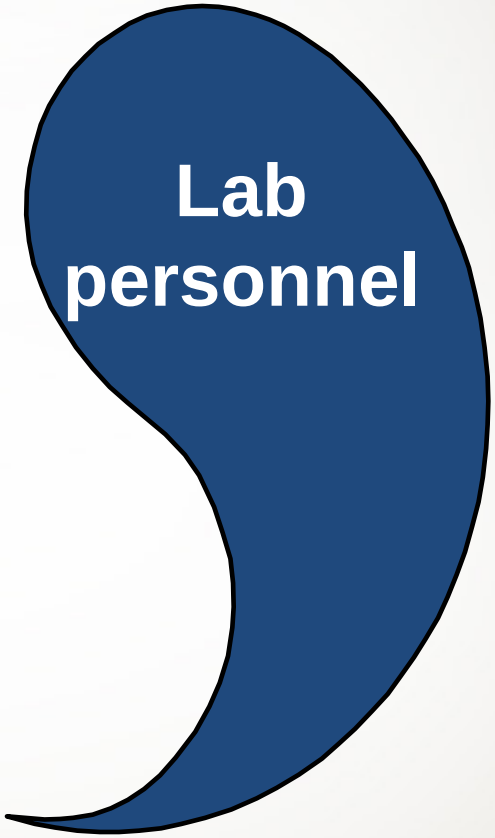
- Respect
- Courtesy
- Acknowledge different perspectives

Acknowledging Differences

- Define quality in "subjective" terms
- Value clinical utility of results, convenience, "real-time" evaluation

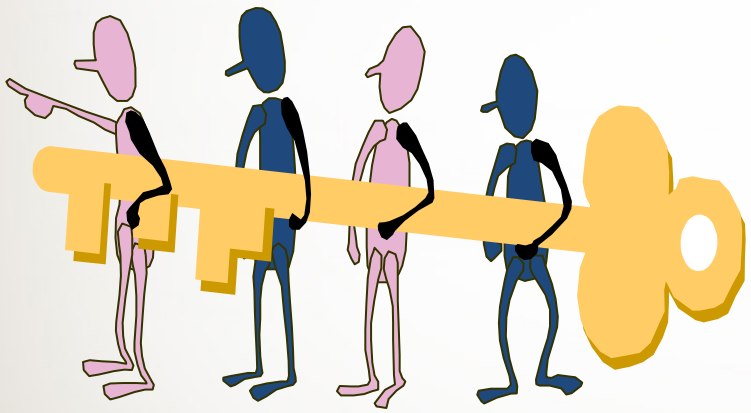
Acknowledging Differences

- Define quality in "objective" terms
- Value that which is constant, measurable, technically-based



Service Standards

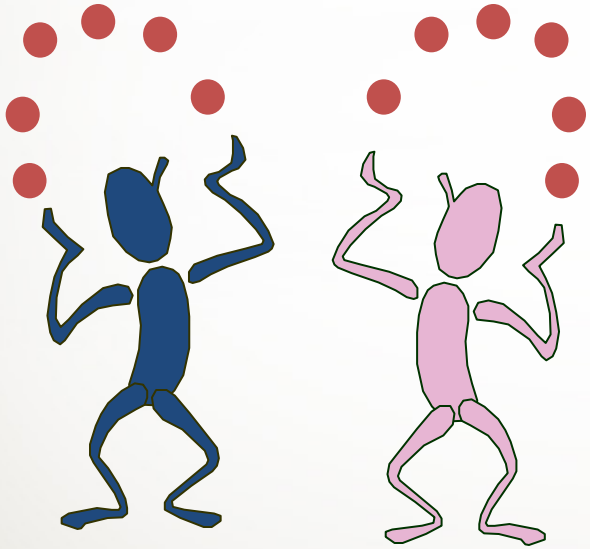
Teamwork & Communication



- Teamwork is "work"
- Acknowledgment of expertise
- Collegiality
- Information exchange

Service Standards

Self-Management & Ownership/Accountability



- Ownership of discipline-specific responsibilities
- Involvement of all stakeholders

Tip: Understand the Nursing Perspective

- Think like a nurse not a laboratorian!
- Training, policies, everything must be written to a nursing perspective
- Focus on patient care
- Emphasize the “Why”, let staff figure out the “How”
  - Why QC is important
  - Why positive patient ID is necessary
  - Emphasize POCT a routine patient care

Tip: Understand Your POCT

- Research testing – results of laboratory test will not be used for patient care, none of the clinicians managing patient have access to test results (CLIA'88 does not apply)
- Clinical testing – test results will be used for diagnosis or change in management of the patient (CLIA'88 rules apply)
  - Pregnancy test to screen patient for drug trial
  - Creatinine, liver enzymes to monitor patients on trial

Case Study: Cardiology Research

- Waived coagulation device to be used to manage dosage of coumadin
- Cardiologist claims it is research, so don't need any additional QA/QC documentation.
- Device is waived, so test is "waived" of all regulations
- The hospital is CAP inspected, so there are additional concerns beyond CLIA license and following manufacturer's instructions

Case Study: Cardiology Research

- Waived device generates a coded comment that researcher calls to sponsor for treatment instructions (only way to blind clinicians to coumadin vs placebo)
- Offer to get research a “waived” CLIA to conduct testing
- Cardiologist very heated, unwilling to listen to regulations, claims lab is overinterpreting regulations and leaves meeting
- Lab follow-up with CMS – test is indeed clinical not research, and because the sponsor has modified the device it is no longer waived (ie high complexity testing). This prohibits the physician from applying test to a “waived” research CLIA certificate.
- Turned issue over to research administration/Academic Affairs in conjunction with POCT committee limited testing in this setting and required separate CLIC license

Tip: Utilize POCT Data Management

- Limit MANUAL Testing!
- Computerized POCT devices automate the QA documentation (and billing) process by storing patient and operator identification with patient result, time and date.
- Electronic POCT data can be transmitted to the medical record, hospital information systems or other databases.
- Computerized POCT devices mandate performance of QC and lockout if not performed successfully. Operator lockout ensures only trained and competent staff perform testing
- Electronic data streamlines the quality review of large amounts of data
- Possibility of automating data reduction and alert algorithms to highlight problems and trends

QCM - Microsoft Internet Explorer

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Address http://bhspoccs/qcm3/QCM3.asp Go Links

Search Sign In News Games Personals Mail My Yahoo! Yahoo! Finance Shopping

mywebsearch Search Smiley Central My Info Mail Stamp My Signature Fun Tools Games Customize More

Search for Type search term(s) here Web Search Highlight Directory

ABBOTT QCM 3.0

Review
Reports
Operators
Instruments
Lots
Administrative
Log Off

Baystate Health System
Baystate Medical Center
Franklin Medical Center
Mary Lane Hospital

OPERATOR CERTIFICATION: Baystate Medical Center » All Departments » All Locations

Alarm Status

Search Criteria

Instrument PCx

Last Name

Operator ID

Expiration Date 31

Display Records

Use this screen to view and edit operator certification information. Use the filter options to find a specific operator or to find all operators with instrument certification set to expire on a specific date. To edit or e-mail operator certification record(s) check the box (es) in the Operator Name column and click the Edit or E-Mail button.

2420 Records Found Displaying Page 1 of 25 «Previous Page Next Page»

E-Mail

Operator Name All	Operator ID	Original Cert. Date	Cert. Date	Recert Interval	Exp. Date	Auto Recert	Last Good QC	Last Pat Test
--	40238	--	--	--	--	--	05/12/2002	04/29/2002
--	00341	--	--	--	--	--	--	02/11/2002
--	02634	--	--	--	--	--	--	12/17/2001
--	03584	--	--	--	--	--	--	11/28/2001
--	03888	--	--	--	--	--	--	03/07/2002
--	04901	--	--	--	--	--	01/24/2002	03/08/2002
--	05518	--	--	--	--	--	02/13/2002	03/14/2002
--	08117	--	--	--	--	--	03/15/2002	02/14/2002
--	09500	--	--	--	--	--	--	02/11/2002
--	40917	--	--	--	--	--	--	11/16/2001
--	41897	--	--	--	--	--	--	01/09/2002
--	08025	--	--	--	--	--	--	03/03/2002
--	41253	--	--	--	--	--	--	03/04/2002

Done Local intranet

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Crystal Report Viewer - Microsoft Internet Explorer

100% 1 of 1

Preview

ICU Workload

Location Choice: Baystate Medical Center - ICU/NEURO - ICU
Instrument: PCx
Sort By: Instrument Serial No.

Date Range: 08/01/2003 to 08/31/2003

Facility: Baystate Medical Center **Department:** ICU/NEURO **Location:** ICU

Instrument	Instrument Serial No.	Instrument Name	Patient Tests	Control Tests	Proficiency Tests	Linearity Tests	Electronic QC Tests	Test Errors	Total Reagent
PCx	M10370048		32	61	0	0	0	1	93
PCx	M11260030		36	55	0	0	0	1	91
PCx	M12080023	M12080023	34	59	0	0	0	2	93
		ICU Totals	**102**	**175**	**0**	**0**	**0**	**4**	**277**
		ICU/NEURO Totals	**102**	**175**	**0**	**0**	**0**	**4**	**277**
		Baystate Medical Center Totals	**102**	**175**	**0**	**0**	**0**	**4**	**277**

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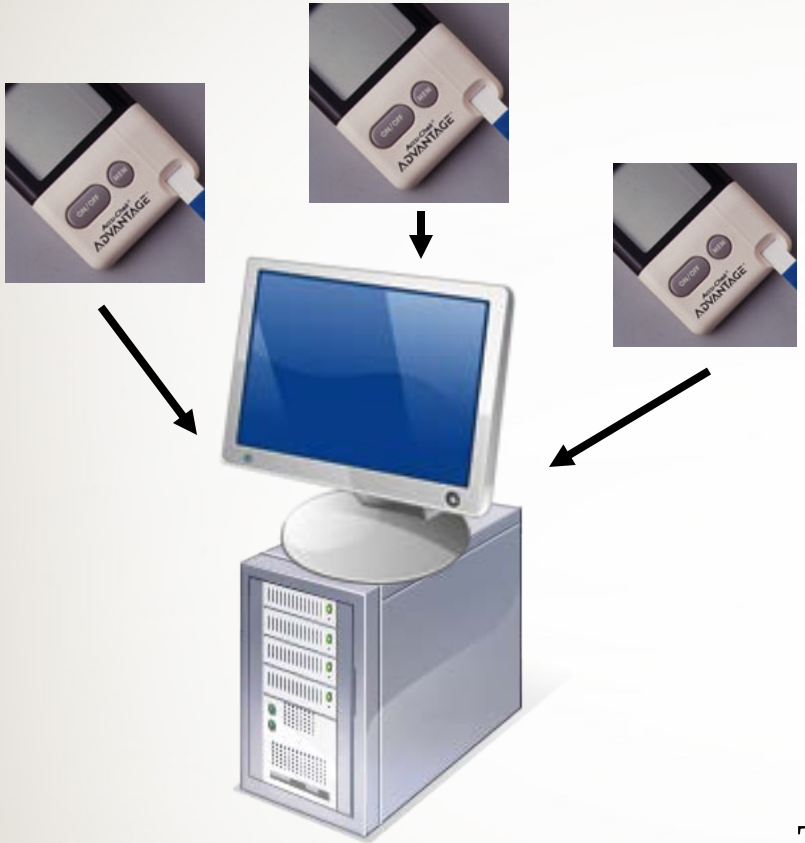
Tip: Use Electronic Databases, Distribute Responsibilities, Reduce Paperwork



POCT Database

Quality Control Records

Operator Competency Dates

Nursing Unit

Employee Records

POCT Policies

POCT Coordinator

Device Validations

Lot checks and management

Training/Competency records

Nursing Unit Compliance Trends

Self-Management

- While POCT is a partnership between lab and clinical services, inspectors hold the site performing the test and CLIA director responsible
- The lab can't hold an operator's hand 24- hrs a day, sites must take charge
- Self-management establishes staff roles, defines responsibilities and sets expectations for performance in a collegial manner
- Issues handled through the staff's manager, not the lab, promotes mutual respect while emphasizing patient care

Tip: Promote Self-Inspection

- Key to self-management is site self-inspection
- Sites utilize same checklist that accreditation inspectors would use to grade compliance
- So, compliance tied directly to regulations, not something lab is requiring of staff
- Emphasizes staff awareness of regulations
- Sites that regularly self-inspect demonstrate the most QA improvement

Point of Care Testing - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Search Favorites

Address http://bhsiisvap01/PointOfCare/Website/Point%20of%20Care%20Testing/default.htm Go Links

Point of Care Testing

- POCT Home
- Policies and Procedures
- Training
- Quality Improvement
- POCT Committee
- CAP Checklist
- POCT Contacts
- Back to BHS Intranet

Final Showing Markup Show

Baystate Health System/Self Inspection Worksheet

Site _____ **Date of Review** _____

Signature _____

GLUCOSE	REVIEW	COMMENTS
QC Dated and In Date		
Strip Lot #:		
QC Lot #:		
Patient Volume		
# Clerical _____/ %Errors _____		

HEMOCCULT	REVIEW	COMMENTS
Slides Stored Properly and Not Exp.		
Patient Result/Pos&Neg QC Charted		

pH / NITRAZINE PAPER	REVIEW	COMMENTS
Paper and Buffers dated & in date		
QC Performed as Required		

i-STAT	REVIEW	COMMENTS
i-STAT Cartridges Dated / Not Exp		

Local intranet

Tip: Identify Challenging Sites Case Study: The ED

- POCT staff conducts site inspections monthly
- ED low compliance with key benchmarks
  - Frequent POCT identification errors
  - Missed days for temperature monitoring
  - Outdated reagents/controls
  - Failure to comment failed QC, out of range result communication, etc.
  - Poor follow-up and action plans
  - Leadership claims to be different than other units
- POCT not unique – similar nursing round results

The ED Environment

- Acute care – need for rapid response
- Level 1 trauma center
- High staff turnover and outside coverage
  - Lose administrative continuity
  - Frequent staff reeducation of basics
  - Less ownership than other hospital sites

ED Design Changes

- Two champions of POCT on unit helped motivate staff re: POCT challenges
- Tired of same issues reoccurring month after month
- Collected a team of TA operators
- Redesigned the self-inspection form
  - Delegated tasks
  - Assigned POCT responsibilities to all shifts
  - 4 team leads all responsible wkly compliance

Emergency Department
POCT Site Inspection Report

Signature: **Date:**

Glucose	Review OK	Comments or Actions
QC marked with Exp. Date		

The QC bottles are good until manufacturers outdate or for 90 days once opened.
There should be one set opened and in the plastic box in the lab room.

Urinalysis	Review OK	Comments or Actions
Reagents dated and not expired?		
Caps tight on the multistix bottles?		
Correct QC on log?		
Correct QC ranges noted on log?		
QC performed each day on all open bottles?		
QC performed when a new bottle is opened?		
QC failures repeated with remedial action plan?		
Daily and weekly maintenance performed on Clinitek 50?		
Temperature chart complete with action taken when out of range?		
Patient results logged? MR # and initials on tape?		
Patient results charted with reference ranges?		

Urine controls are to be kept in the refrigerator. They are good until manufacturers outdate. They are good at room temperature for 30 days.
Each open bottle must have QC done.
Multistix bottles are to be dated and initialed when opened. They are good until manufacturers outdate unless the cap is left too loose or off.

ED Outcomes

- Dramatic shift in compliance observed
- TA ownership of all staff
  - New self-inspection delineated responsibility
  - Defined ownership and job descriptions
  - Enhanced awareness of QC/exp dates/temp
- Staff turnover – planned for continuity
- Enhanced follow-up with action plans
- POCT ID errors down –
  - Staff weren't waiting for pt registration prior to POCT
  - Using downtime 999 codes w/o follow-up in 24hr
  - TA team worked with the ED reg staff to get pts registered and banded faster upon admission
  - Key – a process change led to enhanced outcomes

Tip: Integrate POCT with Order Entry

- How do physicians know which test to order? POCT versus central lab?
- Educational pamphlet minimally effective
- More than a 10 fold difference in cost between a glucose by central lab, glucose meter, or BG POC
- Economic downturn forced us to reexamine clinical need for stat testing given cost differences
- Two initiatives to decrease inappropriate utilization
  - Change the name from i-Stat to POC cartridge
  - Prevent routine ordering of test
  - Pop-up window reminder
- Initiatives reduced POC cartridge usage by 50 - 60%

Folder: Search within: All At location: BMC

- ABG POC Cartridge
- ABG w/Lactate POC Cartridge
- BUN POC Cartridge
- Calcium Ionized POC Cartridge
- Chloride POC Cartridge
- CO2 Est Arterial POC Cartridge
- CO2 Est Venous POC Cartridge
- Creatinine POC Cartridge
- Glucose POC Cartridge
- Hematocrit POC Cartridge
- Hemoglobin POC Cartridge
- Lytes (Na+K) POC Cartridge
- O2 Sat Arterial POC Cartridge
- O2 Sat Venous POC Cartridge
- Panel POC Cartridge
- pCO2 Arterial POC Cartridge
- pCO2 Venous POC Cartridge
- pH Arterial POC Cartridge
- pH Venous POC Cartridge
- pO2 Arterial POC Cartridge
- pO2 Venous POC Cartridge
- Potassium POC Cartridge
- Sodium POC Cartridge
- VBG POC Cartridge
- VBG w/Lactate POC Cartridge

KENNEDY, TESTONE - 1841415 Opened by Kennedy, Cathy

Task Edit View Patient Chart Links Notifications Options Current Add Help

Inbox | Patient Lists | PAL | Schedule | Multi-Patient Tasks | Shift Assignment | Apache

AdHoc | Charge Viewer | Encounter Location History Viewer | Explorer Menu | Medication Manager | Exit | Charges | Calculator | Web Paging | eWorkplace

Menu

Orders

Print | 1 minutes ago

Add | Document Medication by Hx | Reconciliation

Orders | Medication List

Orders for Signature

Order Name	Status	Start	Details
S3ONC1; S3505; A Acct #:489275751 Admit: 11/13/2008 8:49			
Laboratory			
Potassium POC Cartridge	Order	6/9/2009 14:41	Stat, 6/9/2009 14:41

Details for **Potassium POC Cartridge**

Details | Order Comments

Order details

Priority [Stat]
Start Date and Time [6/9/2009 14:41]
Active Encounter Order [Yes]

Detail values

06/09/2009 | 1441

For all POC Cartridge Orders
Priority is defaulted to Stat – can not be changed
No free text fields and can not type into Order Comments field

0 Missing Required Details | Sign

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BUILD EN09815 09 June 2009 14:42

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Decision Support

IDENTIFIED ORDER:
Potassium POC Cartridge

Reference

Potassium POC Cartridge | Search

CarePlan information | Chart guide | Nurse preparation | Patient education | Policy and procedures | Scheduling information

POC Cartridge Lab Testing [redacted] Changes

POC Cartridge testing is **10** times as expensive as routine and stat laboratory testing and **5** times as expensive as POC testing for glucose tests. BMC is the largest user of POC cartridges on the East Coast, adding significantly to our cost of care.

Please consider ordering a POC cartridge test only when there is an urgent need and *avoid its use for routine and scheduled lab tests*.

The indications for a POC Cartridge Test are:

- Emergent care of critically ill patient
- Severely anemic patients whom the Hgb is < 8 g/dl
- Patient with excessive blood draws (> 10 tubes drawn in last 24 hours)

'Pop-Up' text that appears automatically upon selecting a POC Cartridge order

OK

VANDER

M

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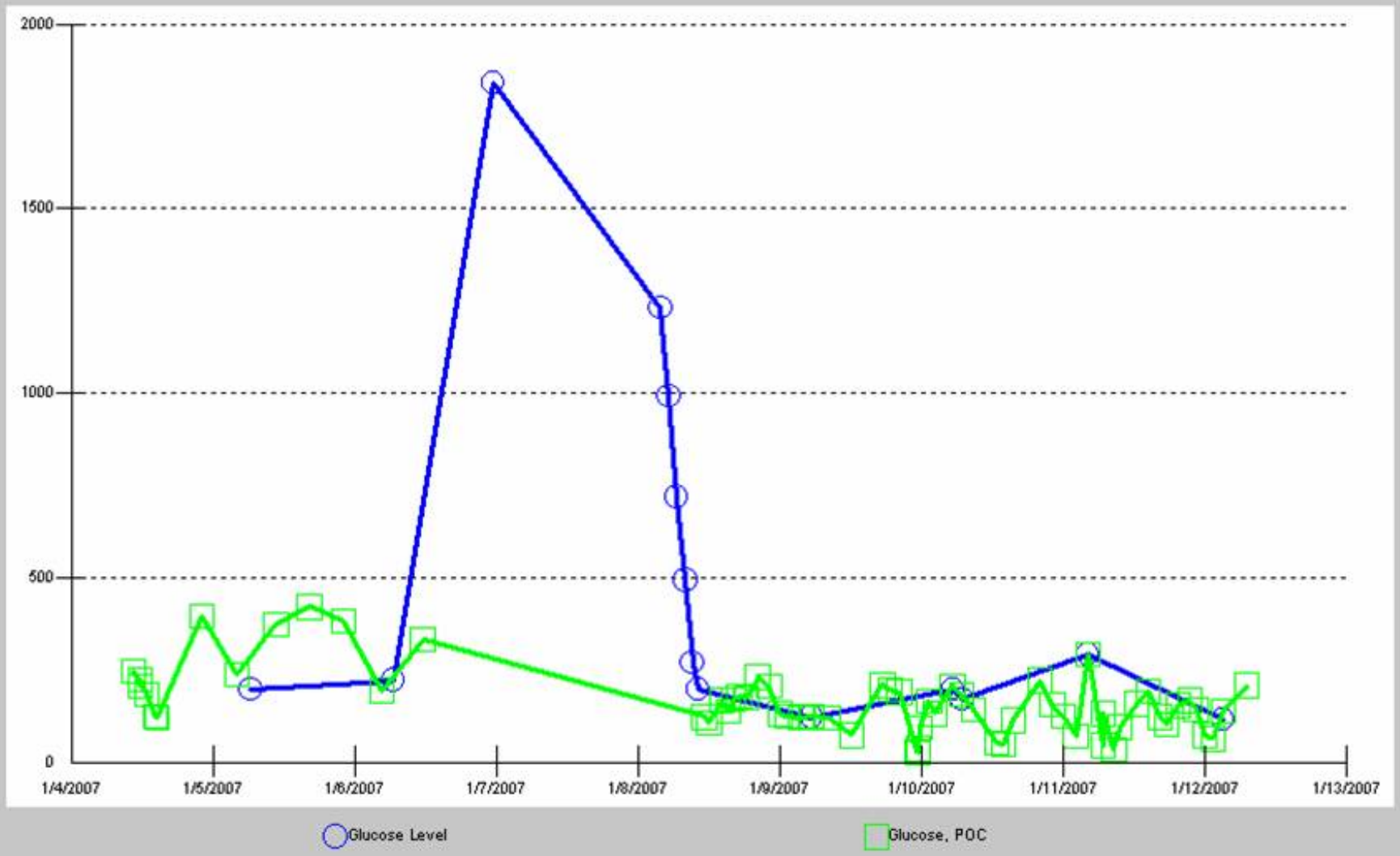
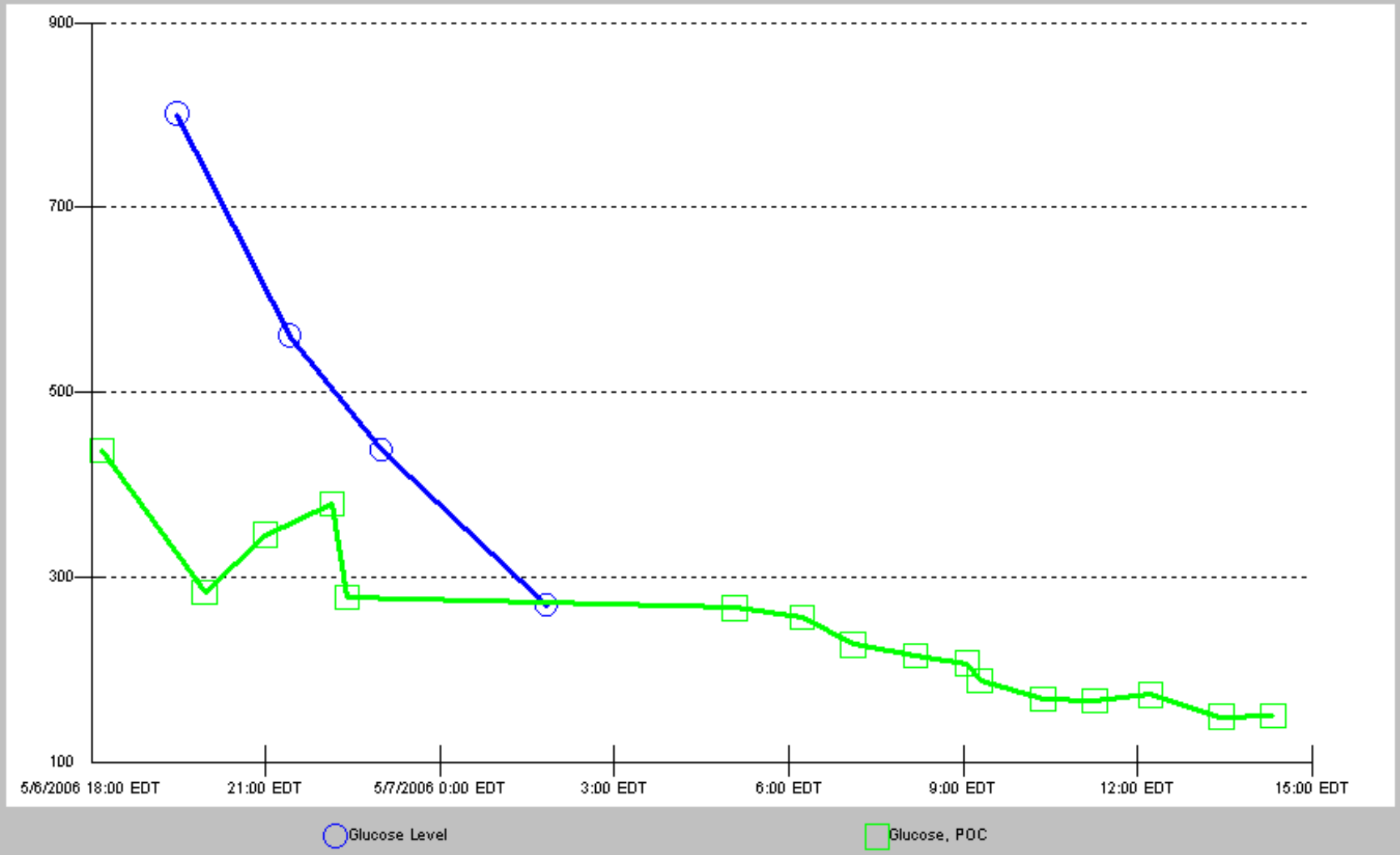
Tip: Assist POCT Result Interpretation

- POCT can be a different technology, intermixing POC and Core lab results leads to confusion.
- Glucose meters, while universally used, have several limitations
  - Extremes of Hgb/Hct (<20 – 25% and >50 - 60%)
  - Maltose/xylose/galactose interference on some glucose dehydrogenase based methods
  - Affects patients receiving dialysis fluids containing Icodextrin, injection or infusion solutions (human immuneglobulin), xylose absorption test
  - Erroneously low results if patient severely dehydrated, hypotensive, in shock or hyperglycemic-hyperosmolar state (with or without ketosis) [limitation of all meters]

Glucose Level & Glucose, POC



Glucose Level & Glucose, POC



Tip: Separate POCT Results in EMR

- POCT is a different technology
- Results are not equivalent to other laboratory methods without considering unique performance characteristics
- Electronic medical records overlay results of the same name, so physicians can trend tests over time.
- POCT results cannot be freely interchangeable with other methodologies and electronic reporting must keep results separate.
- We've developed POCT flowsheets to automate reporting of POCT results.
  - POCT results in nursing notes separate from lab reported results
  - POCT results require selection of site location – linked to licensure
  - Prevents intermixing of lab and POCT results, and misinterpretation

- 0601491 Opened by Nichols Ph.D., James H.

Task Edit View Time Scale Options Help

As Of 8:22

Chart Summary | Ref. Text | Facesheet

Orders | Med Profile | MAR | Vital Signs | I / O | Patient Info | Snapshot | **Lab** | Rad | All Results | Task List | Documents | Nsg/Anc Forms

Flowsheet: LABORATORY ... Level: LABORATORY

Table Group List

03 January 2007 8:15 - 13 January 2007 8:15 (Clinical Range)

Navigator

- BLOOD GAS
- BLOOD COUNT_DIFF
- COAG
- HEME OTHER
- BLOOD BANK
- CHEM GENERAL
- CARDIAC
- ENDOCRINE/TUMOR MAR
- TOXICOLOGY/TDM
- MISC. CHEMISTRY
- BACTERIOLOGY
- UA/URINALYSIS
- URINE OTHER

LABORATORY	1/10/2007 8:40	1/10/2007 6:52	1/10/2007 6:44	1/10/2007 5:15	1/10/20 5:10
Glucose Level		172 H		199 H	
Glucose, Istat					
Glucose, POC	143 H		184 H		207 H
Beta Hydroxybutyrate					
BUN		15		15	
Creatinine-Blood		1.5 H		1.4 H	
Estimated GFR, Non African American		41		45	
Estimated GFR, African American		50 *		54 *	
Calcium		6.3 L			
Calcium, Ionized pH Corrected		1.01 * C		1.02 * C	
Phosphorus		3.7			
Magnesium		0.9 L			
Alkaline Phosphatase					
GGTP					
Amylase					

PROD EN43202 12 January 2007 8:24

POC Urinalysis - TEST, CRASHDUMMY

*Performed on: 06/20/2007 1645 By: Colburn, Caryn

POC Urinalysis

POC Urinalysis

Color

- Colorless
- Straw/Light yellow (Normal)
- Yellow (Normal)
- Amber/Dark yellow (Normal)
- Green
- Pink
- Red
- Brown
- Orange

Appearance

- Clear (Normal)
- Hazy (Normal)
- Cloudy (Normal)

Glucose

- Negative (Normal)
- Trace (100 mg/dl)
- 1+ (250 mg/dl)
- 2+ (500 mg/dl)
- 3+ (> or = 1000 mg/dl)

Bilirubin

- Negative (Normal)
- 1+ small
- 2+ moderate
- 3+ large

Ketones

- Negative (Normal)
- Trace (5 mg/dl)
- 1+ (15 mg/dl)
- 2+ (40mg/dl)
- 3+ (80mg/dl)

Specific Gravity

- < or = 1.005
- 1.010
- 1.015
- 1.020
- 1.025
- > or = 1.030

Blood

- Negative (Normal)
- Trace
- 1+ small
- 2+ moderate
- 3+ large

pH

- 5.0
- 5.5
- 6.0
- 6.5
- 7.0
- 7.5
- 8.0
- 8.5
- > or = 9.0

Protein

- Negative (Normal)
- Trace
- 1+ (30 mg/dl)
- 2+ (100 mg/dl)
- 3+ (300 mg/dl)

Urobilinogen

- 0.2 mg/dl
- 1 mg/dl
- 2 mg/dl
- 4 mg/dl
- >or = 8.0

Nitrite

- Negative (Normal)
- Positive

Leukocytes

- Negative (Normal)
- Trace
- 1+ small
- 2+ moderate
- 3+ large

***Organization/CLIA #**

In Progress

Tip: Utilize Best Practice Guidelines

- POCT is an increasingly popular means of delivering laboratory testing.
- When used appropriately, POCT can improve patient outcome by providing a faster result and therapeutic intervention.
- However, when over-utilized or incorrectly performed, POCT presents a patient risk and potential for increased cost of healthcare.
- LMPGs exist that have systematically reviewed the existing evidence relating POCT to patient outcome, graded the literature, and made recommendations regarding the optimal utilization of POCT devices in patient care.

NACB: Laboratory Medicine Practice Guidelines (LMPG)

Since 1994, NACB has developed consensus-based guidelines for the laboratory evaluation and monitoring of patients with specified disorders. After a series of public presentations and reviews designed to reach consensus among the experts, the guidelines are published online.

Several LMPGs have been translated into other languages, which include French, Italian, Japanese, Polish, and Spanish. NACB welcomes collaboration with colleagues in other countries. For copyright and translation information, please contact Betsy Garman.

NACB's guidelines are available online for free; print versions are available for purchase through AACC Press.

Published Guidelines

Major Tumor Markers	2009	Online	Purchase
Emerging CV Risk Factors	2009	Online	Purchase
Expanded Newborn Screening	2009	Online	Purchase
Tumor Markers Quality Requirements	2009	Online	Purchase
Biomarkers of ACS	2007	Online	Purchase
Point-of-care Testing	2007	Online	Purchase

Message from Past President of NACB

Click here for a transcript of Roland Valdes' video message.

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Brief Summary

GUIDELINE TITLE

Management. Laboratory medicine practice guidelines: evidence-based practice for point-of-care testing.

BIBLIOGRAPHIC SOURCE(S)

Jacobs E, Goldsmith B, Larrson L, Richardson H, St. Louis P. Management. In: Laboratory medicine practice guidelines: evidence-based practice for point-of-care testing. Washington (DC): National Academy of Clinical Biochemistry (NACB); 2006. p. 1-4. [22 references]

GUIDELINE STATUS

This is the current release of the guideline.

BRIEF SUMMARY CONTENT

Go to the Complete Summary

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions of the levels of evidence (I—III) and grades of the recommendation (A, B, C, I) are presented at the end of the "Major Recommendations" field.

Note from the National Academy of Clinical Biochemistry (NACB) and the National Guideline

The National Academy of Clinical Biochemistry

Presents

LABORATORY MEDICINE PRACTICE GUIDELINES

EVIDENCE-BASED PRACTICE FOR POINT-OF-CARE TESTING

AACCPress

Occult Blood Recommendations

- **Does annual or biennial guaiac-based FOBT, in the average risk asymptomatic outpatient population over 50 years old, reduce mortality from colorectal cancer compared to no FOBT screening?**
- **Recommendation:** *We strongly recommend that clinicians routinely provide guaiac-based FOBT for asymptomatic individuals older than 50 years at least biennially to reduce mortality from colorectal cancer. Three large randomized control trials have illustrated a 15-33% reduction in mortality from annual or biennial FOBT. FOBT is easy, inexpensive and poses no risk to the patient. (Strength/consensus of recommendation A, Level of Evidence: I - randomized control trials and case-control studies)*
- **Should FOBT be performed in the central laboratory or at the point-of-care for asymptomatic patients who require screening for colorectal cancer?**
- **Recommendation:** *We cannot recommend for or against the use of point-of-care testing to screen for colorectal cancer in asymptomatic patients. Experts suggest that home collection of specimens with analysis either in the physician office or laboratory is recommended over traditional point-of-care testing for occult blood by digital rectal examination. In addition, the randomized control trials illustrating colorectal cancer mortality reduction utilized the central laboratory to perform FOBT. However, no trials have compared these methodologies and addressed the benefits of point-of-care testing, which include convenience and an increase in compliance. (Strength/consensus of recommendation I, Level of Evidence: III – retrospective trial, expert opinion)*

Occult Blood Recommendations

- **Can gastroccult testing of gastric fluid from a nasogastric tube be used to detect gastrointestinal bleeding in high-risk intensive care unit patients receiving antacid prophylaxis?**
- **Recommendation:** *We cannot currently recommend for or against the use of gastroccult to detect gastric bleeding in intensive care unit patients receiving antacid prophylaxis. Only one study to our knowledge has indirectly addressed this issue. No randomized controlled trials have been performed. (Strength/consensus of recommendation: I, Level III – small study, clinical evidence)*

Tip: Periodically Reassess Existing POCT Case Study: Bleeding in ICU Patients

- One small study available
- Examined 41 patients and showed that 13/14 patients with positive gastroccult tests had a source of upper GI bleeding as seen by upper endoscopy.
- However, patients with negative gastroccult tests did not undergo upper endoscopy.

Gastroccult Testing?

- Discontinued without incident
- Approached Chief of GI and Division of Healthcare Quality with clinical utility.
- Researched literature and based on LMPG developed recommendation and justification
- Draft letter to medical staff reviewed by select clinicians
- General announcement and test removal

Gastroccult Discontinuation

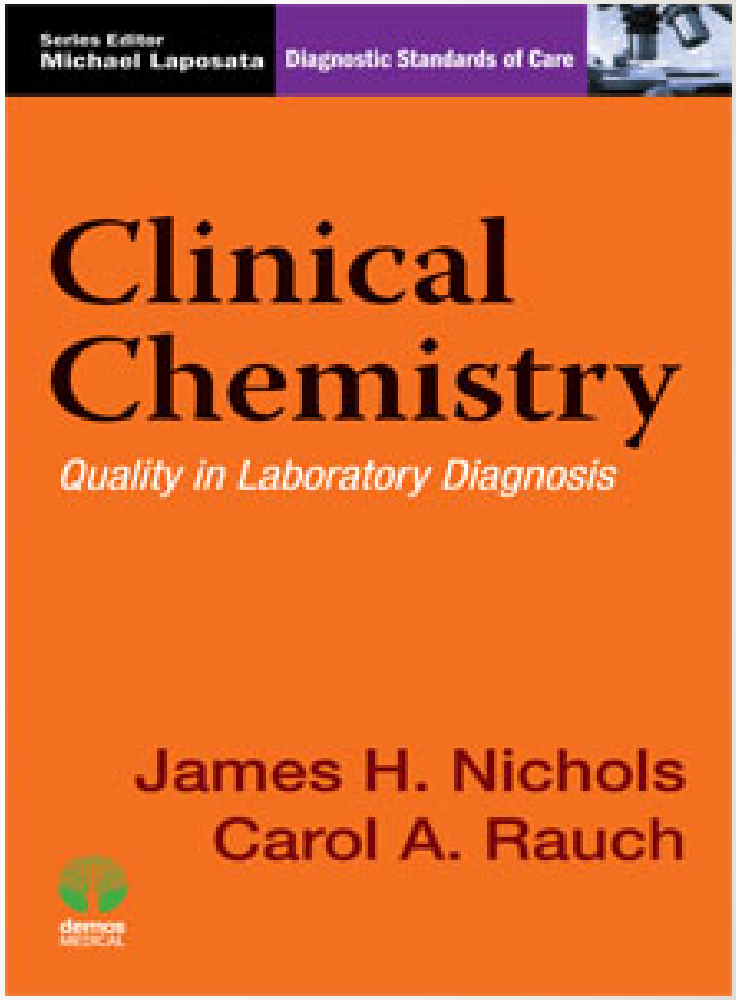
- No peer-reviewed literature indicating improved outcomes based on Gastroccult
- Use of test after NG tube placement leads to positive results solely due to trauma of tube insertion
- Overt bleeding is a medical concern and doesn't require test to detect
- pH is medically useful, pH paper is a better alternative because it's easier to QC, already available on units and lower cost
- Elimination would reduce hospital burden of training and POCT documentation on nursing staff and reduce risk of developer mixup with hemoccult.

Gastroccult Cost Savings

- Reagent: (12,000 tests/year)
  - Cards $21,000
  - Developer $ 5,000
- Labor
  - Nursing (5 min/test, 45K= 125d) $22,000
  - Competency (1100 x 15 min) $ 6,000
  - Lab oversight (4hr x 8 units x 12 mo) $ 8,500
- Total Annual Savings Estimate $62,500
- Total billed previous year 12
- Cost estimate for pH replacement $ 250

Resource for Reducing Errors

- Clinical Chemistry book recently released!
- Focus on errors in the Chemistry Laboratory including POCT
- Discussion of real-world errors and what can be done to detect and prevent errors.



Summary

- POCT is an increasingly popular means of delivering laboratory testing closer to the site of patient care.
- A faster result isn't necessarily a better result
- Quality concerns require laboratory involvement and supervision of testing process
- Integration of POCT into patient care pathways ensures a link of test to patient outcome.
- Periodically reassess the POCT that is being conducted to ensure it continues to meet patient needs