Complete Summary

GUIDELINE TITLE

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

BIBLIOGRAPHIC SOURCE(S)

D'Orazio P, Fogh-Andersen N, Okorodudu A, Shipp G, Shirey T, Toffaletti J. Critical care. In: Laboratory medicine practice guidelines: evidence-based practice for point-of-care testing. Washington (DC): National Academy of Clinical Biochemistry (NACB); 2006. p. 30-43. [178 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

High-acuity disorders/conditions that require life-sustaining care, including:

- Major organ dysfunction
- Severe trauma
- Major surgical wounds
- General anesthesia
- Severe sepsis

GUIDELINE CATEGORY

Assessment of Therapeutic Effectiveness
Evaluation

CLINICAL SPECIALTY

Cardiology
Critical Care
Emergency Medicine
Internal Medicine
Pediatrics
Surgery

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Clinical Laboratory Personnel
Emergency Medical Technicians/Paramedics
Health Care Providers
Hospitals
Nurses
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To examine the application of evidence-based medicine (EBM) to the form of diagnostic testing known as point-of-care testing (POCT)

  Note: For the purpose of this document, POCT is defined as "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."

- To systematically review and synthesize the available evidence on the effectiveness of POCT, with specific focus on outcomes in the areas of:
  1. Patient/health
  2. Operational/management
  3. Economic benefit
- To provide guidelines on the use of point-of-care testing (POCT) of arterial blood gases (PO_2, PCO_2, pH), glucose, lactate, magnesium, cooximetry (O_2 saturation, carboxyhemoglobin [HbCO], methemoglobin [MetHb]), sodium, potassium, chloride, and ionized calcium in critical care

TARGET POPULATION

Patients in critical care

INTERVENTIONS AND PRACTICES CONSIDERED

Point-of-care testing (POCT) of the following analytes:

1. Arterial blood gases (ABG) in the intensive care unit (ICU), emergency department (ED), and during cardiac surgery (adult and neonatal)
2. Glucose
3. Lactate
4. Oxygen saturation by pulse oximetry
5. Carboxyhemoglobin and methemoglobin
6. Potassium in ED
7. Ionized calcium in ED and ICU

Note: The following point-of-care (POC) tests were considered but not recommended: magnesium testing, electrolyte testing in ICU, ionized calcium testing in operating room.

MAJOR OUTCOMES CONSIDERED

- Patient outcomes such as mortality and length of hospital or emergency department stay
- Staff satisfaction
- Therapeutic turnaround time (TTAT)
- Economic benefit

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

For a specific clinical use, pertinent clinical questions were formulated and key search terms were ascertained for the literature search. Searches were conducted through online databases (e.g., PubMed, MEDLINE) and private libraries maintained by members of the focus group. Peer-reviewed articles from private libraries were used in the systemic review only if the citations and abstracts could be found in the online databases. The search strategy started with the general terms (e.g., point-of-care testing, bedside testing) and concluded in specific settings, disease states, and outcomes (e.g., emergency department, blunt trauma, mortality). Method comparison studies that only compared a point-of-care testing (POCT) system to a central laboratory system for analytical performance were excluded from the review.

The 2 clinical questions that the guideline developers sought to address for each analyte and for a given clinical setting, disease state, and outcome measure were:

1. Is there evidence in the peer-reviewed literature that more rapid therapeutic turnaround time (TTAT) of a (*analyte*) result leads to (*outcome*) improvement in the (*setting*) for patients with (*disease*)?

2. Does POCT of (*analyte*) for patients with (*disease*) in the (*setting*) improve (*outcome*) when compared to core laboratory testing?

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

I. Evidence includes consistent results from well-designed, well-conducted studies in representative populations.
II. Evidence is sufficient to determine effects, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies; generalizability to routine practice; or indirect nature of the evidence.
III. Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Abstracts identified by the literature searches were reviewed by 2 individuals to determine initial eligibility or ineligibility for full-text review, using Form 1 (Appendix A - see the "Availability of Companion Documents" field). If there was not consensus, then a third individual reviewed the abstract(s). To be included in the full systematic review of the clinical question, articles selected for full text review were examined for at least 1 relevant outcomes measurement. The systematic review consisted of creating evidence tables using Form 2 (Appendix A - see the "Availability of Companion Documents" field) that incorporated the following characteristics:

1. Study design—Prospective or retrospective, randomized, and controlled, patient inclusion/exclusion criteria, blinding, number of subjects, etc.
2. Appropriateness of controls
3. Potential for bias (consecutive or nonconsecutive enrollment)
4. Depth of method description—full-length report or technical brief
5. Clinical application—screening, diagnosis, management
6. Specific key outcomes and how they were measured
7. Conclusions are logically supported

For the assessment of study quality, the general approach to grading evidence developed by the US Preventive Services Task Force was applied (see the "Rating Scheme for the Strength of the Evidence" field). Once that was done, an assessment of study quality was performed, looking at the individual and aggregate data at 3 different levels using Forms 3 and 4 (Appendix A - see the "Availability of Companion Documents" field). At the first level, the individual study design was evaluated, as well as internal and external validity. Internal validity is the degree to which the study provides valid evidence for the populations and setting in which it was conducted. External validity is the extent to which the evidence is relevant and can be generalized to populations and conditions of other patient populations and point-of-care testing (POCT) settings.

The synthesis of the volume of literature constitutes the second level, Form 5 (Appendix A - see the "Availability of Companion Documents" field). Aggregate internal and external validity was evaluated, as well as the coherence/consistency of the body of data. How well does the evidence fit together in an understandable model of how POCT leads to improved clinical outcome? Ultimately, the weight of the evidence about the linkage of POCT to outcomes is determined by assessing the degree to which the various bodies of evidence (linkages) "fit" together. To what degree is the testing in the same population and condition in the various linkages? Is the evidence that connects POCT to outcome direct or indirect? Evidence is direct when a single linkage exists but is indirect when multiple linkages are required to reach the same conclusion.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The field of point-of-care testing (POCT), diagnostic testing conducted close to the site of patient care, was divided into disease- and test-specific focus areas. Groups of expert physicians, laboratorians, and diagnostic manufacturers in each focus area were assembled to conduct systematic reviews of the scientific literature and prepare guidelines based on the strength of scientific evidence linking the use of POCT to patient outcome.

Final guidelines were made according to Agency for Healthcare Research and Quality (AHRQ) classification (see the Rating Scheme for the Strength of the Recommendations field). The guidelines are evidence based and require scientific evidence that the recipients of POCT experience better health outcomes than those who did not and that the benefits are large enough to outweigh the risks. Consensus documents are not research evidence and represent guidelines for clinical practice, and inclusion of consensus documents was based on the linkages to outcomes, the reputation of the peer organization, and the consensus process used to develop the document. Health outcomes, e.g., benefit/harm, are the most significant outcomes in weighing the evidence and drafting guidelines.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Strength of Recommendations

A - The National Academy of Clinical Biochemistry (NACB) strongly recommends adoption; there is good evidence that it improves important health outcomes and concludes that benefits substantially outweigh harms.

B - The NACB recommends adoption; there is at least fair evidence that it improves important health outcomes and concludes that benefits outweigh harms.

C - The NACB recommends against adoption; there is evidence that it is ineffective or that harms outweigh benefits.

I - The NACB concludes that the evidence is insufficient to make recommendations; evidence that it is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

COST ANALYSIS

The guideline developers reviewed published cost analyses. With decision analysis methods, 3 models of postoperative point-of-care (POC) blood gas testing for coronary artery bypass graft (CABG) patients were developed and evaluated for economic value. These were (1) a STAT laboratory in a large tertiary-care medical center with 15-min turn-around-time (TAT); (2) STAT testing in a central laboratory of a large community hospital with a 30-min TAT; and (3) STAT testing in a central laboratory of a medium-large community hospital with a 45-min TAT. The cost savings related to faster TAT were primarily due to fewer adverse events or earlier detection of these adverse events. Some adverse clinical events benefited greatly by faster TAT (ventricular arrhythmias and cardiac arrests), whereas others were relatively independent of TAT (postoperative bleeding and iatrogenic anemia). This study used clinical experts to define probabilities of adverse events leading to a mathematical analysis instead of a prospective clinical study.

Although blood gas testing was a small part of the testing evaluated, one report describes the process, the economics, the attitudes, and the clinical and economic benefits of implementing POC testing in a large medical center that previously had a variety of STAT-type laboratories. Although considerable cost savings ($392,000 per year) were reported, the majority of these were in labor savings ($495,000 per year), which more than made up for the otherwise increased cost ($145,000 per year) of POCT. POCT is especially cost-effective when it allows closure of a pre-POCT laboratory that is extremely inefficient, as one described here that averaged less than 1 test/day per full-time equivalent (FTE) (5.0 FTEs worked in this laboratory).

METHOD OF GUIDELINE VALIDATION

Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The guidelines were presented in open forum at the American Association for Clinical Chemistry (AACC) Annual Meeting (Los Angeles, CA, USA) in July 2004. Portions of these guidelines were also presented at several meetings between

2003 and 2005. Participants at each meeting had the ability to discuss the merits of the guidelines and submit comments to the National Academy of Clinical Biochemistry (NACB) Web site for formal response by the NACB during the open comment period from January 2004 through October 2005.

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 Clearinghouse (NGC)*: The Laboratory Medicine Practice Guidelines (LMPG) evidence-based practice for point-of-care testing sponsored by the NACB* have been divided into individual summaries covering disease- and test-specific areas. In addition to the current summary, the following are available:

- Chapter 1: Management
- Chapter 2: Transcutaneous Bilirubin Testing
- Chapter 3: Use of Cardiac Biomarkers for Acute Coronary Syndromes
- Chapter 4: Coagulation
- Chapter 6: Diagnosis and Management of Diabetes Mellitus
- Chapter 7: Drugs and Ethanol
- Chapter 8: Infectious Disease
- Chapter 9: Occult Blood
- Chapter 10: Intraoperative Parathyroid Hormone
- Chapter 11: pH Testing
- Chapter 12: Renal Function Testing
- Chapter 13: Reproductive Testing

Arterial Blood Gases (ABG)

Intensive Care Unit (ICU)

Guideline 37. There is fair evidence that more rapid therapeutic turnaround time (TTAT) of ABG results in several types of ICU patients leads to improved clinical outcomes. Overall, the guideline developers recommend that more rapid TTAT of ABG results be considered as a way to improve outcomes in at least some types of ICU patients. (Literature Search 13 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: I

Guideline 38. There is fair evidence that point-of-care testing (POCT) of ABG results in the ICU leads to improved clinical outcomes when POCT is found to lead to reduced TTAT compared to that in the central laboratory. Overall, the guideline developers recommend that POCT of ABG results be considered as a way to improve outcomes in ICU patients. More prospective randomized controlled studies need to be performed. (Literature Search 14 - Refer to Appendix B - see the "Availability of Companion Documents" field)

Strength/consensus of recommendation: B
Level of evidence: II

Guideline 39. There is some evidence that POCT of ABG results in the ICU may lead to reduced costs when compared to the central laboratory testing, but the balance of benefit to no benefit is too close to justify in a given hospital. The guideline developers have no recommendation for POCT of ABG results being considered as a way to reduce costs in the ICU. More prospective randomized controlled studies need to be performed. (Literature Search 15 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: I
Level of evidence: II

Emergency Department (ED)

Guideline 40. There is fair evidence that more rapid TTAT of ABG results, in some ED patients, leads to improved clinical outcomes. Overall, the guideline developers recommend that more rapid TTAT of ABG results be considered as a way to improve outcomes in at least some types of ED patients. (Literature Search 16 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Guideline 41. There is fair evidence that POCT of ABG results leads to improved clinical outcomes in some types of ED patients when POCT is found to lead to reduced TTAT compared with that of the central laboratory. Overall, the guideline developers recommend that POCT of ABG results be considered as a way to improve outcomes in ED patients. More prospective randomized controlled studies need to be performed. (Literature Search 17 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Cardiac Surgery: Adult and Neonatal

Guideline 42. There is fair evidence that more rapid TTAT of ABG results in cardiac surgery patients leads to improved clinical outcomes. Overall, the guideline developers recommend that more rapid TTAT of ABG results be considered as a way to improve outcomes in cardiac surgery patients. (Literature Search 18 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Guideline 43. There is fair evidence that POCT of ABG results leads to improved clinical outcomes in cardiac surgery patients when POCT is found to lead to reduced TTAT compared to that of the central laboratory. Overall, the guideline developers recommend that POCT of ABG results be considered as a way to improve outcomes in cardiac surgery patients. More prospective randomized controlled studies need to be performed. (Literature Search 19 - Refer to Appendix B - see the "Availability of Companion Documents" field)

Strength/consensus of recommendation: B
Level of evidence: II

Glucose

Guideline 44. There is good evidence that more rapid TTAT of glucose results in critical care patient settings leads to improved clinical outcomes. Overall, the guideline developers strongly recommend that more rapid TTAT of glucose results be considered as a way to improve outcomes in critical care patients. (Literature Search 20 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: A
Level of evidence: I

Guideline 45. There is good evidence that POCT of glucose results leads to improved clinical outcomes in critical care patient settings when POCT is found to lead to reduced TTAT compared to that of the central laboratory. Overall, the guideline developers strongly recommend that POCT of glucose results be considered as a way to improve outcomes in critical care patients. (Literature Search 21 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: A
Level of evidence: I

Lactate

Guideline 46. There is good evidence that more rapid TTAT of lactate results in critical care patient settings leads to improved clinical outcomes. Overall, the guideline developers strongly recommend that more rapid TTAT of lactate results be considered as a way to improve outcomes in ED, operating room (OR), and ICU patients. (Literature Search 22 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: A
Level of evidence: I

Guideline 47. There is good evidence that POCT of lactate results leads to improved clinical outcomes in critical care patient settings when POCT is found to lead to reduced TTAT compared to that of the central laboratory. Overall, the guideline developers recommend that POCT of lactate results be considered as a way to improve outcomes in critical care patients. More prospective randomized controlled studies need to be performed. (Literature Search 23 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Magnesium

Guideline 48. There is fair evidence that more rapid TTAT of magnesium results in critical care patient settings leads to improved clinical outcomes. Overall, the guideline developers recommend that more rapid TTAT of magnesium results be considered as a way to improve outcomes in critical care patient settings. (Literature Search 24 - Refer to Appendix B - see the "Availability of Companion

Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Guideline 49. There is insufficient evidence that POCT of magnesium results leads to improved clinical outcomes in critical care patient settings. Overall, the guideline developers recommend that prospective randomized controlled studies be performed. (Literature Search 25 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: I
Level of evidence: III

Cooximetry

Oxygen Saturation

Guideline 50. There is fair evidence that more rapid TTAT of oxygen saturation results in critical care patient settings leads to improved clinical outcomes. Overall, the guideline developers recommend that rapid TTAT of oxygen saturation results be considered as a way to improve outcomes in critical care patient settings. (Literature Search 26 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Guideline 51. POCT of oxygen saturation by cooximetry is not required in critical care settings. Overall, the guideline developers recommend pulse oximetry as the preferred method. (Literature Search 27 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: C
Level of evidence: II

Carboxyhemoglobin (HbCO)

Guideline 52. There is good evidence that POCT of HbCO results leads to improved clinical outcomes in critical care patient settings when POCT is found to lead to reduced TTAT compared to that of the central laboratory. Overall, the guideline developers recommend that POCT of HbCO results be considered as a way to improve outcomes in critical care patients. More prospective randomized controlled studies need to be performed. (Literature Search 28 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Methemoglobin (MetHb)

Guideline 53. There is fair evidence that POCT of MetHb results leads to improved clinical outcomes in critical care patient settings. Overall, the guideline developers recommend that POCT of MetHb results be considered as a way to improve outcomes in critical care patients and that more prospective randomized controlled studies need to be performed. (Literature Search 29 - Refer to

Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Electrolytes (Sodium [Na+], Potassium [K+], Chloride [Cl-])

Emergency Department

Guideline 54. There is fair evidence that POCT of potassium results leads to improved clinical outcomes in ED patients when POCT is found to lead to reduced TTAT compared to that of the central laboratory. Overall, the guideline developers recommend that POCT of potassium results be considered as a way to improve outcomes in ED patients. More prospective randomized controlled studies need to be performed. (Literature Search 30 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Intensive Care Unit

Guideline 55. There is little known evidence that POCT of electrolyte results leads to improved clinical outcomes in the ICU setting. Overall, the guideline developers have no recommendation for POCT of electrolyte results being considered as a way to improve outcomes in the ICU. Prospective randomized controlled studies need to be performed. (Literature Search 31 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: I
Level of evidence: III

Ionized Calcium

Emergency Department

Guideline 56. There is fair evidence that POCT of ionized calcium results leads to improved clinical outcomes in circulatory arrest patients when POCT is found to lead to reduced TTAT compared to that of the central laboratory. Overall, the guideline developers recommend that POCT of ionized calcium results be considered as a way to improve outcomes in circulatory arrest patients. More prospective randomized controlled studies need to be performed. (Literature Search 32 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Operating Room

Guideline 57. There is little evidence that POCT of ionized calcium results leads to improved clinical outcomes in surgical patients when POCT is found to lead to reduced TTAT compared to that of the central laboratory. Overall, the guideline developers cannot recommend that POCT of ionized calcium results be considered as a way to improve outcomes in surgical patients. More prospective randomized

controlled studies need to be performed. (Literature Search 33 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: I
Level of evidence: III

Intensive Care Unit

Guideline 58. There is fair evidence that more rapid TTAT of ionized calcium results in the ICU leads to improved clinical outcomes. Overall, the guideline developers recommend that more rapid TTAT of ionized calcium results be considered as a way to improve outcomes in ICU patients. (Literature Search 34 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Guideline 59. There is fair evidence that POCT of ionized calcium results leads to improved clinical outcomes in ICU patients when POCT is found to lead to reduced TTAT compared to that of the central laboratory. Overall, the guideline developers recommend that POCT of ionized calcium results be considered as a way to improve outcomes in ICU patients. More prospective randomized controlled studies need to be performed. (Literature Search 35 - Refer to Appendix B - see the "Availability of Companion Documents" field)
Strength/consensus of recommendation: B
Level of evidence: II

Definitions:

Levels of Evidence

I. Evidence includes consistent results from well-designed, well-conducted studies in representative populations.
II. Evidence is sufficient to determine effects, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies; generalizability to routine practice; or indirect nature of the evidence.
III. Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information.

Strength of Recommendations

A - The National Academy of Clinical Biochemistry (NACB) strongly recommends adoption; there is good evidence that it improves important health outcomes and concludes that benefits substantially outweigh harms.

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C - The NACB recommends against adoption; there is evidence that it is ineffective or that harms outweigh benefits.

I - The NACB concludes that the evidence is insufficient to make recommendations; evidence that it is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

It is hoped that these guidelines will be useful for those implementing new testing, as well as those reviewing the basis of current practice. These guidelines should help sort fact from conjecture when testing is applied to different patient populations and establish proven applications from off-label and alternative uses of point-of-care testing (POCT). These guidelines will also be useful in defining mechanisms for optimizing patient outcome and identify areas lacking in the current literature that are needed for future research.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- The material in this monograph represents the opinions of the editors and does not represent the official position of the National Academy of Clinical Biochemistry or any of the cosponsoring organizations.
- Point-of-care testing (POCT) is an expanding delivery option because of increased pressure for faster results. However, POCT should not be used as a core laboratory replacement in all patient populations without consideration of the test limitations and evaluation of the effect of a faster result on patient care.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

D'Orazio P, Fogh-Andersen N, Okorodudu A, Shipp G, Shirey T, Toffaletti J. Critical care. In: Laboratory medicine practice guidelines: evidence-based practice for point-of-care testing. Washington (DC): National Academy of Clinical Biochemistry (NACB); 2006. p. 30-43. [178 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2006

GUIDELINE DEVELOPER(S)

National Academy of Clinical Biochemistry - Professional Association

SOURCE(S) OF FUNDING

National Academy of Clinical Biochemistry

GUIDELINE COMMITTEE

Guidelines Committee

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the National Academy of Clinical Biochemistry (NACB) Web site.

Print copies: National Academy of Clinical Biochemistry publications are available through American Association for Clinical Chemistry (AACC) Press. To make a purchase or request a catalog, contact AACC Customer Service at 202-857-0717 or custserv@aacc.org.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Preface and introduction. In: Laboratory medicine practice guidelines: evidence-based practice for point-of-care testing. Washington (DC): National Academy of Clinical Biochemistry (NACB); 2006. p. i-xvi.
- Appendix A: NACB LMPG data abstraction forms. In: Laboratory medicine practice guidelines: evidence-based practice for point-of-care testing. Washington (DC): National Academy of Clinical Biochemistry (NACB); 2006. p. 149-153.
- Appendix B: literature searches. In: Laboratory medicine practice guidelines: evidence-based practice for point-of-care testing. Washington (DC): National Academy of Clinical Biochemistry (NACB); 2006. p. 154-186.

Electronic copies: Available in Portable Document Format (PDF) from the National Academy of Clinical Biochemistry (NACB) Web site.

Print copies: National Academy of Clinical Biochemistry publications are available through American Association for Clinical Chemistry (AACC) Press. To make a

purchase or request a catalog, contact AACC Customer Service at 202-857-0717 or custserv@aacc.org.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI Institute on August 10, 2007. The information was verified by the guideline developer on September 24, 2007.

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Date Modified: 11/3/2008