Your Role in the Clinical Team

ASCP
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Julie R. Taylor, Ph.D.
Division of Laboratory Science and Standards

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
No Disclosures

In the past 12 months, I have not had a significant financial interest or other relationship with the manufacturer(s) of the product(s) or provider(s) of the service(s) that will be discussed in my presentation.

This presentation will (not) include discussion of pharmaceuticals or devices that have not been approved by the FDA or unapproved or "off-label" uses of pharmaceuticals or devices.
Clinical Laboratory Integration into Healthcare Collaborative (CLIHC)™

- CLIHC™’s
  - Origins
  - Goals
  - Team Members
- Impact of Diagnostic Errors
- Key Projects
Audience Participation

Look for the --- ?
CLIHC™’s Origins

- Precursor to CLIHC™: 7 Institutes held at CDC between 1984 and 2007
  - CDC and experts in the laboratory field (national and international)
  - Discussed the role of clinical laboratories in providing quality testing services for improved patient outcomes
  - Found gaps in the effective use of laboratory services

- CLIHC™ = Clinical Laboratory Integration into Healthcare Collaborative
  - Founded in 2008
  - Organized as response to 2007 Institutes’ findings
CLIHC™’s Goal

Optimize the utilization of laboratory services for better patient care
The Path to Better Test Utilization
Why Labs Should Step-up Physician Education, Consultation

By Genna Rollins

http://www.aacc.org/publications/cln/2012/September/Pages/TestUtilization.aspx#
CLIHC™ Workgroup Members

- **Co-Lead**: John Hickner, MD, MSc
  Cleveland Clinic

- **Co-Lead**: Michael Laposata, MD, PhD
  Vanderbilt University Hospital

- **Paul Epner, MEd, MBA**
  Paul Epner, LLC

- **Marisa B. Marques, MD**
  University of Alabama at Birmingham

- **Jim L. Meisel, MD, FACP**
  Boston Medical Center

- **Elissa Passiment, EdM**
  American Society for Clinical Laboratory Science

- **Brian Smith, MD**
  Yale School of Medicine
(Left to Right): Dr. John Hickner, Ms. Elissa Passiment, Dr. Jim Meisel, Mr. Paul Epner, Dr. Michael Laposata, and Dr. Marisa Marques (not pictured – Dr. Brian Smith)
 CLIHC™ Workgroup Support

CDC:

• Julie Taylor, PhD, MS *(CLIHC™ Lead)*
• Nancy Cornish, MD
• MariBeth Gagnon, MS CT (ASCP) HTL
• Anne Pollock, MT (ASCP) SLS
• Pam Thompson, MS MT (ASCP)
Impact of Diagnostic Errors
How many laboratory-related diagnostic errors occur per year in the US?

A. 100 - 1000
B. 1001 – 10,000
C. 10,001 – 100,000
D. Not known
A 40-year review of the literature

An increasing number of reports showed that errors in test selection and result interpretation jeopardize patient safety

Allison Wasserman, MD and Michael Laposata, MD, PhD, Vanderbilt University Medical Center, unpublished data
Articles on Test Selection Errors

<table>
<thead>
<tr>
<th>Decade</th>
<th>Number of Articles</th>
</tr>
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<tbody>
<tr>
<td>1970-1979</td>
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</table>

Errors in Test Selection
Decreasing Errors in Test Selection

Allison Wasserman, MD and Michael Laposata, MD, PhD, VUMC, unpublished data
Articles on Result Interpretation Errors

<table>
<thead>
<tr>
<th>Decade</th>
<th>Errors in Result Interpretation</th>
<th>Decreasing Errors in Result Interpretation</th>
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<tr>
<td>2000-2009</td>
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Allison Wasserman, MD and Michael Laposata, MD, PhD, VUMC, unpublished data
Articles on Adverse Outcomes

<table>
<thead>
<tr>
<th>Decade</th>
<th>Number of Articles</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>1980-1989</td>
<td>2</td>
</tr>
<tr>
<td>1990-1999</td>
<td>2</td>
</tr>
<tr>
<td>2000-2009</td>
<td>7</td>
</tr>
</tbody>
</table>

Adverse Outcomes from Incorrect Test Selection or Results Interpretation

Allison Wasserman, MD and Michael Laposata, MD, PhD, VUMC, unpublished data
Severity of 583 Physician-Reported Diagnostic Errors

- Moderate: 41%
- Major: 28%
- Minor: 22%
- No: 6%
- Missing: 3%

Interventions that Reduce Errors in Test Ordering and Result Interpretation

• Guideline/ clinical pathways
  – Nationally and locally developed
  – With or without electronic decision support

• Structured requisitions

• Reflex testing

• Consultations

• Interpretive comments

Published studies summarized by Paul Epner, Diagnostic Errors in Medicine, October 25, 2010
Which choice best describes the use of laboratory diagnostic algorithms in your institution or organization?

A. We use standard reflex testing such as performing antibiotic sensitivity tests following identification of pathogenic organisms in microbiology.

B. We exceed the standard reflex testing by using a few institutionally derived algorithms.

C. Our institution extensively uses reflex testing with dozens of reflex test algorithms.
CLIHC™

- Key Projects
  - Clinician Test Selection & Result Interpretation
    - Nomenclature
    - Survey of Clinicians’ Challenges
    - Diagnostic Algorithms
  - Medical Student Education
    - Survey of US Medical Schools
    - Clinical Pathology Residency Education
Key Projects

• Clinician Test Selection & Result Interpretation
  – Nomenclature
  – Survey of Clinicians’ Challenges
  – Diagnostic Algorithms

• Medical Student Education
  • Survey of US Medical Schools
  • Clinical Pathology Residency Education
Clinical Laboratory Testing - 1970

30-50 lab tests

Michael Laposata, AACC 2010
Clinical Laboratory Testing - Today

- 30-50 lab tests
- RIAs for hormones
- Intro of molecular testing
- >5000 lab tests

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Intro of automated instruments</td>
<td>Immunoassay automation</td>
<td>Major expansion of molecular testing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Michael Laposata, AACC 2010
Nomenclature

Project Leads – Elissa Passiment, EdM and Jim Meisel, MD, FACP

Goal:

• Demonstrate the complexity of test selection
  – Multiplicity - Hepatitis B surface antibody
    • HBs Antibody, Hepatitis Bs Ab, Anti-HBs
  – Complexity - rheumatoid factor- not specific for rheumatoid arthritis

Methods:

• Develop flow chart and tables demonstrating:
  – Complexity – Vitamin D
  – Breadth – Commonly ordered tests
  – Depth – Coagulation
How many different test names are there for Vitamin D?

A. 1 to 5
B. 5 to 10
C. 10 – 15
D. More than 15
Nomenclature Options for Vitamin D

Vitamin D2
Vitamin D3
25-0H vitamin D2
25-0H vitamin D3
25-0H vitamin D
25 hydroxy vitamin D2
25 hydroxy vitamin D3
25 hydroxy vitamin D
1,25 (OH)2 vitamin D2
1,25 (OH)2 vitamin D3

1,25 (OH)2 vitamin D
1,25 dihydroxy vitamin D2
1,25 dihydroxy vitamin D3
1,25 dihydroxy vitamin D
Vitamin D 25 Hydroxy D2
Vitamin D 25 Hydroxy D3
Vitamin D 1,25 Dihydroxy Cholecalciferol
Ergosterol

CLIHC™ Nomenclature Team, 2012
<table>
<thead>
<tr>
<th>Key Name</th>
<th>Synonyms/Confounders</th>
<th>Abbreviation(s)</th>
</tr>
</thead>
</table>
| Alkaline Phosphatase                         | Alkaline Phos blood  
Alkaline phosphomonoesterase  
Alkaline phosphohydrolase  
Alkaline phenyl phosphatase                  | ALP, Alk Phos, AP, AKP     |
| Beta HCG                                     | BHCG (serum qualitative)  
Beta-Chorionic Gonadotropin  
Blood vs urine Beta HCG                       | BHCG, HCGB, Beta-HCG      |
| Complete blood count with differential       | Hematology profile; blood count; hemogram  
CBC with diff  
CBC with differential  
CBC with differential and platelets  
CBC w/diff & PLT  
CBC diff plts                                    | CBC  
CBC d/p                                             |
## Nomenclature Options for Coagulation Tests

<table>
<thead>
<tr>
<th>Nomenclature Options for Coagulation Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anticardiolipin antibody</strong></td>
</tr>
<tr>
<td></td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>Lupus anticoagulant assay</strong></td>
</tr>
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</tbody>
</table>

 CLIHC™ Nomenclature Team, 2012
Nomenclature
Project Leads – Elissa Passiment, EdM and Jim Meisel, MD, FACP

Status:
• *Decoding Laboratory Test Names: A Major Challenge to Appropriate Patient Care*
• Journal of General Internal Medicine, accepted 10/8/12

Next Steps:
• Investigate IT strategies and systems to assist the clinician in selecting the correct test - search support technology
• Key Projects
  • Clinician Test Selection & Result Interpretation
    • Nomenclature
      – Survey of Clinicians’ Challenges
    • Diagnostic Algorithms
  • Medical Student Education
    • Survey of US Medical Schools
    • Clinical Pathology Residency Education
There is substantial regional variability in test ordering practices that cannot be explained by case mix

www.nejm.org May 12, 2010
10.1056/nejmsa0910881 nejm.org
Survey of Clinicians’ Challenges
Project Leads – John Hickner, MD, MSc & Paul Epner, MEd, MBA

Goal:
• Raise awareness about the challenges clinicians face for test ordering and result interpretation

Methods:
• Phase 1 - Conduct focus groups targeting family physicians and internal medicine physicians
• Phase 2 - Using information from Phase 1, design a national survey of family physicians and internal medicine physicians

CLIHC™ Clinicians’ Challenges Team, 2012
Demographic Characteristics of Respondents*

Specialty

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Count</th>
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<tbody>
<tr>
<td>IM</td>
<td>500</td>
</tr>
<tr>
<td>FP</td>
<td>1000</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
</tr>
</tbody>
</table>

Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 45 years</td>
<td>20%</td>
</tr>
<tr>
<td>45-60 years</td>
<td>60%</td>
</tr>
<tr>
<td>&gt; 60 years</td>
<td>20%</td>
</tr>
</tbody>
</table>

Gender

<table>
<thead>
<tr>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
</tbody>
</table>

Median years in practice = 20

*N=1768, ~1250 fully complete
Summary of Findings

• Test Ordering
  – Dealing with Uncertainty
  – Challenges in Test Ordering

• Result Interpretation
  – Dealing with Uncertainty
  – Challenges in Result Interpretation

• Methods for Providing Assistance
  – Communicate with Laboratory Professionals
  – Methods that Assist Physicians

Based on Presentation by Paul Epner, AACC 2012
## Dealing with Uncertainty in Test Ordering

<table>
<thead>
<tr>
<th>Activity</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review e-references</td>
<td></td>
</tr>
<tr>
<td>Review paper references</td>
<td></td>
</tr>
<tr>
<td>Refer to specialist</td>
<td></td>
</tr>
<tr>
<td>See how patient progresses</td>
<td></td>
</tr>
<tr>
<td>Review practice guideline</td>
<td></td>
</tr>
<tr>
<td>Ask a laboratory professional</td>
<td></td>
</tr>
</tbody>
</table>

*Based on percent reporting that the activity occurred daily or at least once per week*
Which method is used least often by physicians?

A. Review e-references
B. Refer to a specialist
C. Review practice guidelines
D. Ask a laboratory professional
Dealing with Uncertainty in Test Ordering

<table>
<thead>
<tr>
<th>Activity</th>
<th>Utilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review e-references</td>
<td>Utilized most often*</td>
</tr>
<tr>
<td>Review paper references</td>
<td></td>
</tr>
<tr>
<td>Refer to specialist</td>
<td></td>
</tr>
<tr>
<td>See how patient progresses</td>
<td>Utilized often</td>
</tr>
<tr>
<td>Review practice guideline</td>
<td></td>
</tr>
<tr>
<td>Ask a laboratory professional</td>
<td>Utilized least often</td>
</tr>
</tbody>
</table>

*Based on percent reporting that the activity occurred daily or at least once per week
## Challenges in Test Ordering

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Problematic Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient costs</td>
<td>Problematic most often*</td>
</tr>
<tr>
<td>Lack of comparative cost info</td>
<td>Problematic most often*</td>
</tr>
<tr>
<td>Insurance mandates (lab, limits)</td>
<td>Problematic most often*</td>
</tr>
<tr>
<td>Different test in panel</td>
<td>Problematic often</td>
</tr>
<tr>
<td>Different test names</td>
<td>Problematic often</td>
</tr>
<tr>
<td>Test not available</td>
<td>Problematic least often</td>
</tr>
<tr>
<td>Differing recommendations</td>
<td>Problematic least often</td>
</tr>
<tr>
<td>Communicating with the lab**</td>
<td>Problematic least often</td>
</tr>
</tbody>
</table>

*Problematic at least once per week  
**“Ask a laboratory professional” utilized least often
### Dealing with Uncertainty in Result Interpretation

<table>
<thead>
<tr>
<th>Activity</th>
<th>Utilization Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review patient history</td>
<td>Utilized most often*</td>
</tr>
<tr>
<td>Follow-up with patient</td>
<td></td>
</tr>
<tr>
<td>Review e-references</td>
<td></td>
</tr>
<tr>
<td>Order more tests</td>
<td>Utilized often</td>
</tr>
<tr>
<td>Refer to a specialist</td>
<td></td>
</tr>
<tr>
<td>Ask PCP or specialist</td>
<td></td>
</tr>
<tr>
<td>Review practice guideline or paper references</td>
<td>Utilized less often</td>
</tr>
<tr>
<td>Repeat the test</td>
<td></td>
</tr>
<tr>
<td>Ask a laboratory professional</td>
<td>Utilized least often</td>
</tr>
</tbody>
</table>

*Based on percent reporting that the activity occurred daily or at least once per week*
## Challenges in Result Interpretation

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not receiving results quickly</td>
<td>Responded as problematic</td>
</tr>
<tr>
<td>Previous results unavailable</td>
<td>most often*</td>
</tr>
<tr>
<td>Suspected errors in results</td>
<td></td>
</tr>
<tr>
<td>Results inconsistent with symptoms</td>
<td>Responded as problematic</td>
</tr>
<tr>
<td>Lab to lab variation in normal values</td>
<td>often</td>
</tr>
<tr>
<td>Report format (lab to lab variation, hard to understand)</td>
<td></td>
</tr>
<tr>
<td>Not enough info in lab report</td>
<td></td>
</tr>
<tr>
<td>Difficulty communicating with labs**</td>
<td>Responded as problematic</td>
</tr>
<tr>
<td>Too much info in lab report</td>
<td>least often</td>
</tr>
</tbody>
</table>

*Based on percent reporting it was extremely or very problematic
**”Ask a laboratory professional” utilized least often
Summary of Findings

• Test Ordering
  – Dealing with Uncertainty
  – Challenges in Test Ordering

• Result Interpretation
  – Dealing with Uncertainty
  – Challenges in Result Interpretation

• Methods for Providing Assistance
  – Communicate with Laboratory Professionals
  – Methods that Assist Physicians

Based on Presentation by Paul Epner, AACC 2012
What is the most frequent reason physicians communicate with laboratory professionals?

A. Preliminary result information
B. Seeking technical assistance regarding sample collection
C. Assistance with follow-up testing
D. Status of missing results
## Reasons Physicians Communicate with Laboratory Professionals

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status of missing results</td>
<td>Communicate most often*</td>
</tr>
<tr>
<td>Preliminary result information</td>
<td></td>
</tr>
<tr>
<td>Seeking technical assistance regarding sample collection</td>
<td></td>
</tr>
<tr>
<td>Location of test in menu</td>
<td>Communicate less often</td>
</tr>
<tr>
<td>Assistance with appropriate test ordering</td>
<td></td>
</tr>
<tr>
<td>Assistance with follow-up testing</td>
<td></td>
</tr>
<tr>
<td>Medical opinion of results</td>
<td>Communicate least often</td>
</tr>
</tbody>
</table>

*Based on percent reporting the activity occurred at least once per month*
Methods that Assist Physicians

<table>
<thead>
<tr>
<th>METHOD</th>
<th>USEFULNESS*</th>
<th>AVAILABILITY**</th>
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</thead>
<tbody>
<tr>
<td>Reflex Testing</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Result Trending</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Interpretive Comments</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>CPOE with electronic suggestions</td>
<td>Moderately high</td>
<td>Lowest</td>
</tr>
<tr>
<td>Test characteristics</td>
<td>Moderately high</td>
<td>Low</td>
</tr>
<tr>
<td>Dedicated lab line</td>
<td>Moderately high</td>
<td>Low</td>
</tr>
<tr>
<td>Algorithms</td>
<td>Moderately high</td>
<td>Low</td>
</tr>
</tbody>
</table>

* Based on percent reporting it was very to extremely useful
**Based on percent reporting it was available
How often does your laboratory assist clinicians with ordering or interpreting results of laboratory tests?

A. Rarely
B. About once per week
C. Several times per week
D. Daily
Does your laboratory, or institution, provide these methods?

Computerized Physician Order Entry (CPOE) with electronic suggestions

A. Yes
B. No
Does your laboratory, or institution, provide these methods?

Dedicated laboratory phone line for questions

A. Yes
B. No
• Key Projects
  • Clinician Test Selection & Result Interpretation
    • Nomenclature
    • Survey of Clinicians’ Challenges
      – Diagnostic Algorithms
  • Medical Student Education
    – Survey of US Medical Schools
    – Clinical Pathology Residency Education
Diagnostic Algorithms
Project Leads – Michael Laposata, MD, PhD and Marisa B. Marques, MD

Goals:
1. Develop diagnostic algorithms for selected scenarios for appropriate laboratory testing to guide diagnosis and patient care
2. Develop information technology tools to guide appropriate laboratory test selection
Goal 1: Develop Algorithms

Method:
Three clinical pathologists with expertise in coagulation created algorithms for evaluating patients:
- Prolonged Partial Thromboplastin Time (PTT)
- Normal Prothrombin Time (PT)

Three other clinical pathologists with expertise in coagulation reviewed the algorithms.

Article:
The isolated prolonged PTT; Oxana Tcherniantchouk, Michael Laposata, and Marisa B. Marques; American Journal of Hematology, 2012
Goal 2: Develop IT Tools

Method:

CDC Innovations Award Partnership:

- CLIHC™ Algorithm Subgroup
- CDC Division of Laboratory Science and Standards
- CDC Public Health Surveillance & Informatics Program Office (Proposed)

IT Tool:

- **PTT Advisor** app with algorithms for the isolated PTT
The mobile app takes what is below and turns it into ----

Rule out presence of heparin and LMWH—as by history, by performing a PTT after treating plasma with a heparin-degrading enzyme, or by performing a thrombin time (LMWH may not prolong thrombin time).  

Is there a complete or near complete correction in an incubated PTT mixing study?

Is there recent or past bleeding??

Do the levels of factors XI, IX, and VIII reflect a deficiency?  
No

The bleeding is most likely unrelated to the prolonged PTT. Consider causes such as platelet function defect, scurvy, Ehlers-Danlos syndrome, etc. To explain the PTT prolongation, factor XII and lupus anticoagulant testing can be considered.

Yes

The PTT is most likely explained by an intrinsic factor deficiency. Factors VIII and IX deficiencies are X-linked but female carriers may present with bleeding. Factor XI deficiency is not X-linked. If factor VIII is low, consider von Willebrand disease (VWD) — order tests for VWD7.

Does the level of factor XII reflect a deficiency?  
No

The PTT is most likely explained by factor XII deficiency.  

Yes

Check activity levels of prekallikrein or HMWK10.  

The evaluation is complete8

Is there interest in identifying rare factor deficiencies?

The prolonged PTT is most likely explained by an acquired factor VIII deficiency due to an inhibitor12.

Yes

Determine the Bethesda titer of the factor VIII inhibitor13.

No

The prolonged PTT is most likely due to an LA15. If there is bleeding, it is probably unrelated to the test result.

Are the tests for lupus anticoagulant (LA) positive14?

Yes

Causes of false negative tests for LA include a weak antibody, high factor VIII, or platelet count greater than 10,000/microliter in a frozen plasma specimen because platelet phospholipids may neutralize LA. If there is strong clinical suspicion, repeat LA testing at a later date. Consider factors VIII, IX, XI and XII.

No

Are repeat tests for LA positive?

Yes

No

* Superscript numbers refer to footnotes to the figure.
To Begin, Describe Your Patient

Does the patient have prolonged PTT and normal PT?

Yes

No
Completed Steps

1. Does the patient have prolonged PTT and normal PT?
   Yes

2. Is the patient older than 6 months?
   No

3. Rule out presence of heparin and LMWH – by history, by performing a PTT after treating plasma with a heparin degrading enzyme, or by performing a thrombin time (LMWH may not prolong thrombin time). [see footnotes]
   Continue

4. Is the child male or female?
   Male
Help for PTT Advisor

Toolbar:

1. Back: Go back one step.
2. Next: Go forward one step.
3. Go to Last: Go to the last step you were presented, but haven’t yet responded to.
4. Restart: Restart a patient evaluation.
5. Evaluation Review: Presents a screen that lists the steps and responses so far, including the current step. You may tap a step to edit your response.
Do you think your clinician clients would use mobile applications to assist them with test utilization?

A. Yes

B. No
• Key Projects
  • Clinician Test Selection & Result Interpretation
    • Nomenclature
    • Survey of Clinicians’ Challenges
    • Diagnostic Algorithms
  • Medical Student Education
    – Survey of US Medical Schools
    – Clinical Pathology Residency Education
To pass, most medical students must know what a heart looks like under the microscope after a heart attack – and not what blood tests are needed to diagnose a heart attack.

But no one does a heart biopsy to diagnose a heart attack!

Michael Laposata, AACC, 2012
Survey of U.S. Medical Schools

Project Leads – Brian Smith, MD and John Hickner, MD, MSc

Goals:
• Raise awareness about the gaps in US medical school curricula for laboratory medicine training
• Determine the amount of instruction about test selection and result interpretation

Methods:
• Survey all 133 allopathic and 26 osteopathic U.S medical schools
• Letters to Deputy Dean for Education and Course Director for Laboratory Medicine & Pathology, accompanied by letter of support from CDC

CLIHC™ Medical School Survey Team, 2012
Survey conducted by Yale School of Medicine
Selected Preliminary Results

- Laboratory medicine training – 9 hours
- Transfusion medicine - + 2 more hours
- Anatomic pathology – 61 to 302 hours*
- No assessment of competency for knowledge in laboratory medicine
  - But, fail pathology course if cannot interpret slides for anatomic pathology

Next Steps

Depending on results, consider:

• Establishing a national resource for instruction

• Refine the Academy of Clinical Laboratory Physicians and Scientists curriculum in conjunction with primary care and specialty physician-educators

• Establishing a national assessment that schools can use (e.g., an on-line examination)

• Extending the survey to other health professionals
  • Physician Assistants
  • Advanced Practice Registered Nurses
Do you participate in medical student education?

A. Yes
B. No
Would you be willing to participate in medical student education if a forum was available to do so?

A. Yes
B. No
Clinical Pathology Residency Education

Project Leads – Robert Hoffman, MD, PhD & Michael Laposata, MD, PhD

Goal:

• Establish the nature and amount of clinical consultation education provided to clinical pathology residents
• Raise awareness about the gaps in, and solutions to improve clinical pathology residency education

Method:

• Conduct observational study of academic institutions assessing clinical pathology resident training activities
Clinical Pathology Residency Education

Project Leads – Robert Hoffman, MD, PhD & Michael Laposata, MD, PhD

Results:

• 14 Accredited programs contacted – invited to visit 3
• “You would be surprised to see how little consultation there is”
• Some training programs have focal areas of consult activity
• Many programs not prepared to develop meaningful consultative roles for residents in laboratory medicine
• Obstacle: Limited # of doctoral level laboratory directors to teach residents

Article:

*In CP training, are we teaching consultation?*

Robert D. Hoffman; *CAP TODAY, August 2011, Feature Story*
Your Role in the Clinical Team