The IFCC TF-ICO

(Taskforce on Impact of Laboratory Medicine on Clinical Management and Outcomes)

Searching for the Evidence that Laboratory Medicine Matters

Assessing the Value of the Laboratory In Clinical Outcomes & Evidence-Based Campaign to Improve our Image and Visibility

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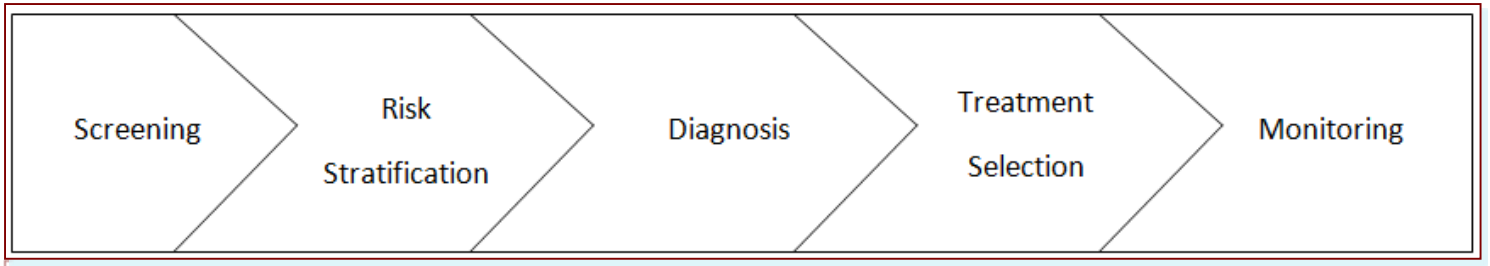
Defining laboratory medicine

- **Laboratory Medicine:**
  - The branch of medicine in which specimens of tissue, fluid or other body substance are examined outside of the person, in a laboratory or at the point of care
  - Encompasses the traditional disciplines of clinical chemistry, hematology, microbiology, virology, anatomical pathology, cytology, molecular genetics and cytogenetics

- **Applications in:**



Importance of lab medicine

- *Single highest-volume medical activity*
  (Est 10-15 bn tests/year)
- Patient safety – *contributes to fast, accurate diagnosis*
- Essential to clinically cost-effective delivery of care
- *Often the principal basis for costly downstream care*
- Spans primary/secondary care
- Added value at pre- & post-analytical phases

Global IVD market valued at $49.2 bn in 2012, growing at a rate of 7% 2012-2017

3-5% of healthcare costs

Healthcare Professionals Need to be Educated on the Critical Role of Laboratory Medicine

Key reasons why we need laboratory medicine:

- It is integral to many clinical decisions on prevention, diagnosis, treatment, managing disease of patients

- Supplies health care professionals with the data necessary to provide high quality, safe, effective and appropriate care to patients

Value of Laboratory Tests and Services Across Patient Care Continuum

Wolcott J, Schwartz A, Goodman C. Laboratory Medicine: A National Status Report. Prepared by: The Lewin Group. May 2008; pp 19-48.

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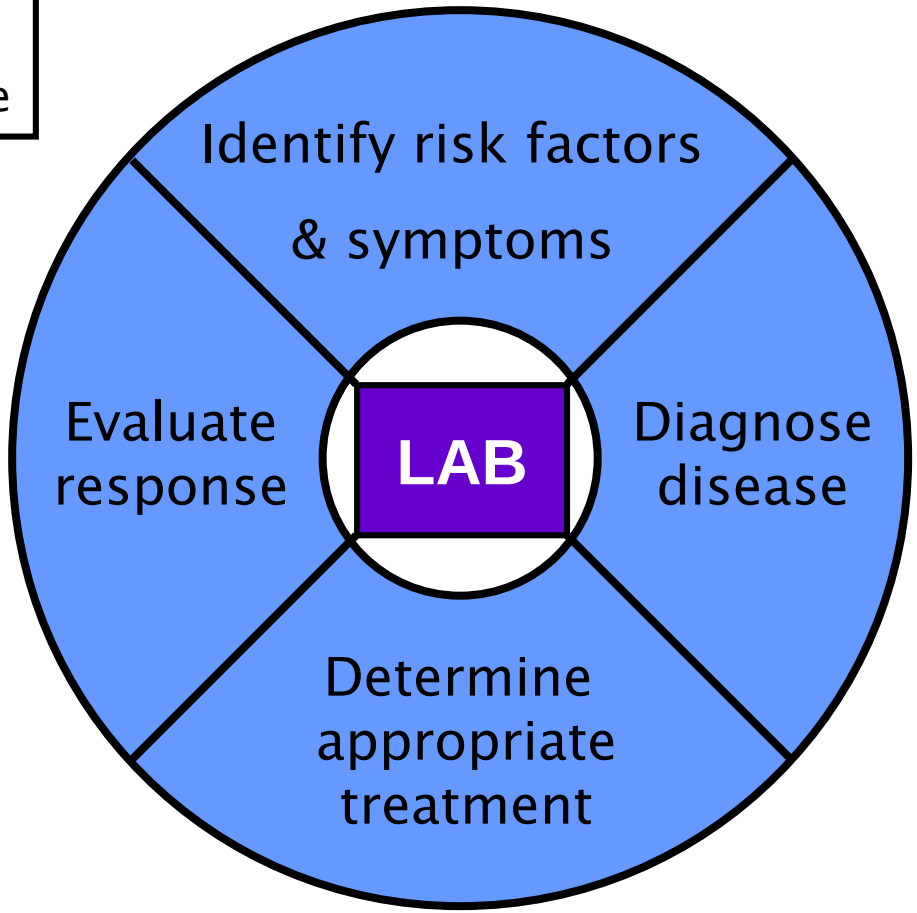
Thus Evidence Supports the Central Role of Laboratory Medicine

Laboratory Medicine is part of the multi-disciplinary team at the centre of healthcare



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Despite Playing a Central Role, Laboratory Medicine Receives a Minor Proportion of the Global Hospital Budget

~70-80% of clinical decisions are informed by data from Laboratory Medicine (source UK Department of Health)

<u>Major Cause:</u>

Poor Visibility??

<5% spend

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Laboratory Medicine:

Poor Visibility as a Medical Discipline & as a Profession

Laboratory Medicine as a Discipline & Laboratory Professionals

Unknown and invisible profession in public

A BLACKBOX to most clinicians/nurses

Profession without a Face

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Recent Initiatives to Improve Our Visibility and Image

- **IFCC Committee on Public Relations (C-PR)**
  - *Public Relation tools developed to promote both the field of lab medicine and the IFCC*
- **Lab Tests Online** International
- **Know Pathology, Know Healthcare** Program in Australia
- **Labs are Vital Program**
- **IFCC Taskforce** on Impact of Laboratory Medicine on Clinical Management and Outcomes (TF-ICO)

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IFCC Taskforce on the Impact of Laboratory Medicine on Clinical Management and Outcomes (TF-ICO)

Developed through the IFCC – CPD (IFCC Communications and Publications Division)

Chair: Mike Hallworth

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F. Vanstapel	Member	BE
S. Faye	Corp. Rep.	UK
C. Ebert	Corp. Rep.	DE

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IFCC Taskforce – (TF-ICO)
Terms of Reference

1. Evaluate the available evidence supporting the impact of laboratory medicine in healthcare (a critical review of published literature) with a focus on data published since 2007.

2. Develop the study design for new retrospective and prospective studies to generate evidence-based data to support IFCC promotional activities to the healthcare community and the public

The taskforce will also work on refining the old and non-specific '70% claim' by defining some of the key decisions in the clinical process and looking at the role of lab medicine in each of these, either in specific care pathways (e.g using published guidelines for specific conditions) or in specific settings, e.g. ER – decision to admit, acute medical ward – decision to treat etc.

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The 70% claim

(Hallworth, Ann Clin Biochem 2011; 48: 487-8)

- “70% of critical medical decisions depend on laboratory data”
- “70% of all medical decisions depend on laboratory data”
- “70% of diagnoses depend on laboratory data”
- ……where is the evidence?

Taskforce Recommendations

Assessing the Value

The need for an outcomes research agenda for clinical laboratory testing

Lundberg G. JAMA 1998; 280: 565-6

"clinicians and laboratorians should all be concerned about the effects of each laboratory test and whether the performance of it is useful for the patient or for the public's health,"

Taskforce Recommendations

Assessing the Value

"In order to improve outcomes, a laboratory test must be *appropriately ordered, conducted, returned with results on a timely basis, correctly interpreted and affect a decision for further diagnosis and treatment*"

Lewin Group report on The Value of Laboratory Screening and Diagnostic Tests for Prevention and Health Care Improvement, 2009

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Taskforce Recommendations:
Lab's Contribution to organizational efficiency

- Laboratories must begin to consider their contribution to the overall organization they represent. They can impact costs by:

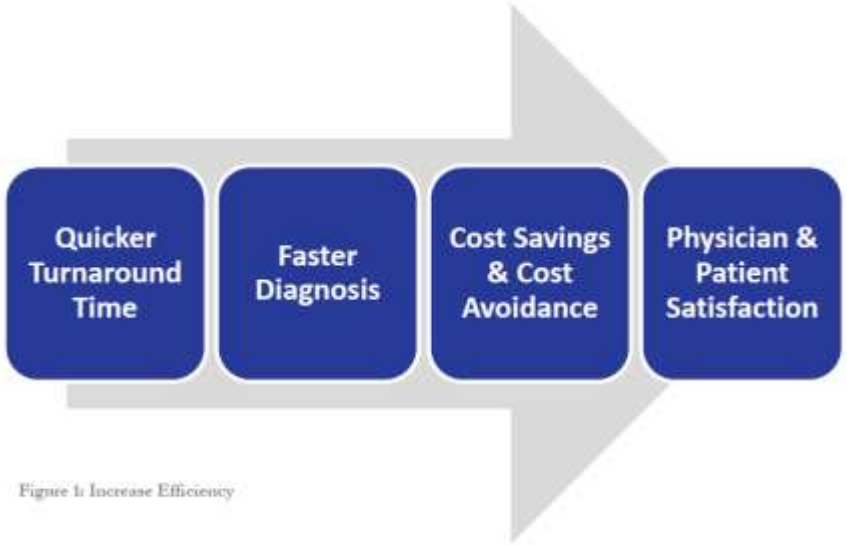

Figure 1: Increase Efficiency

- Increasing the speed and accuracy of diagnoses
- Monitoring patients to prevent disease
- Improving turnaround times that allow reduced hospital stays
- Promoting appropriate test selection to help avoid adverse events and point to the most appropriate treatment

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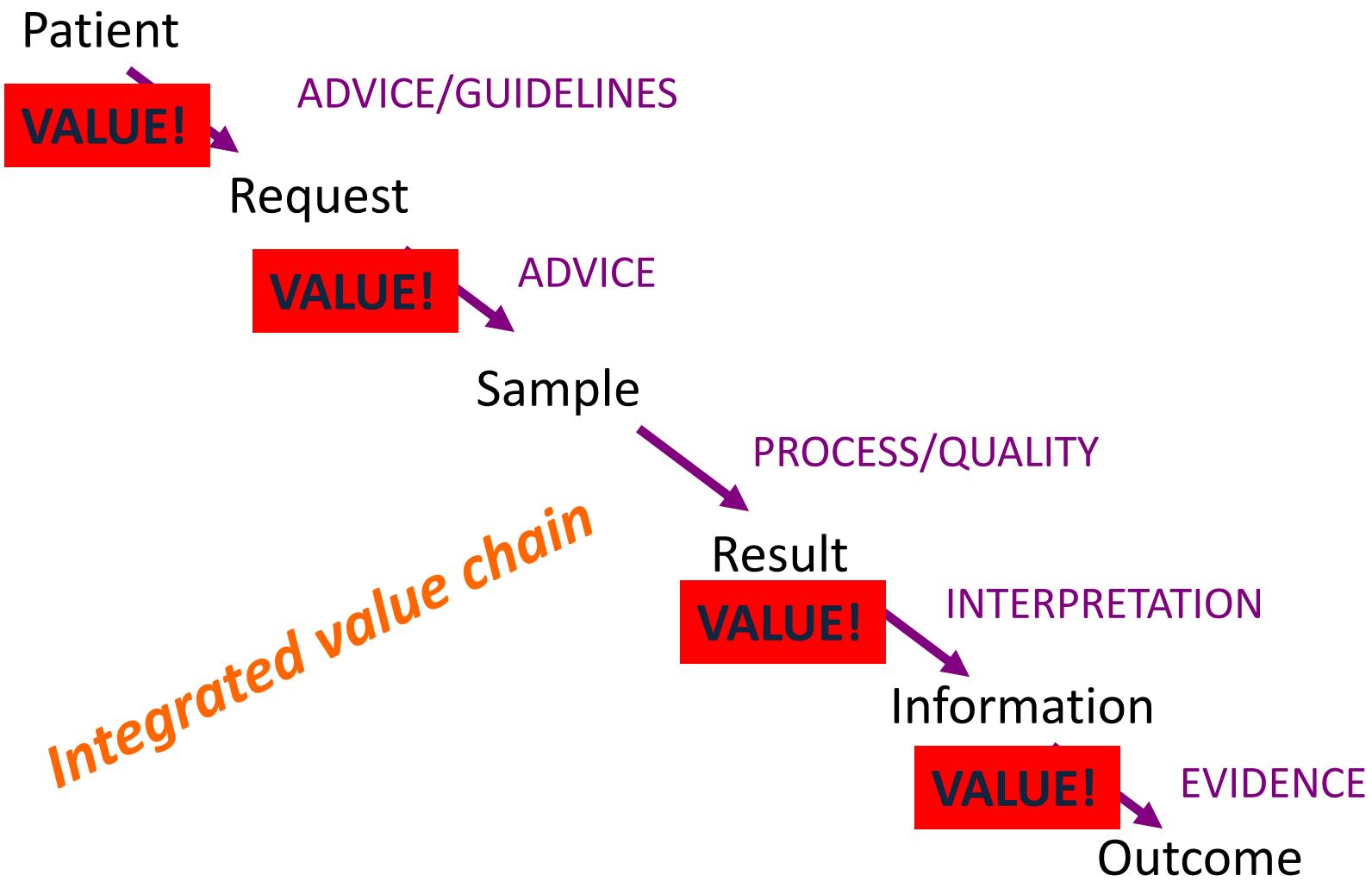
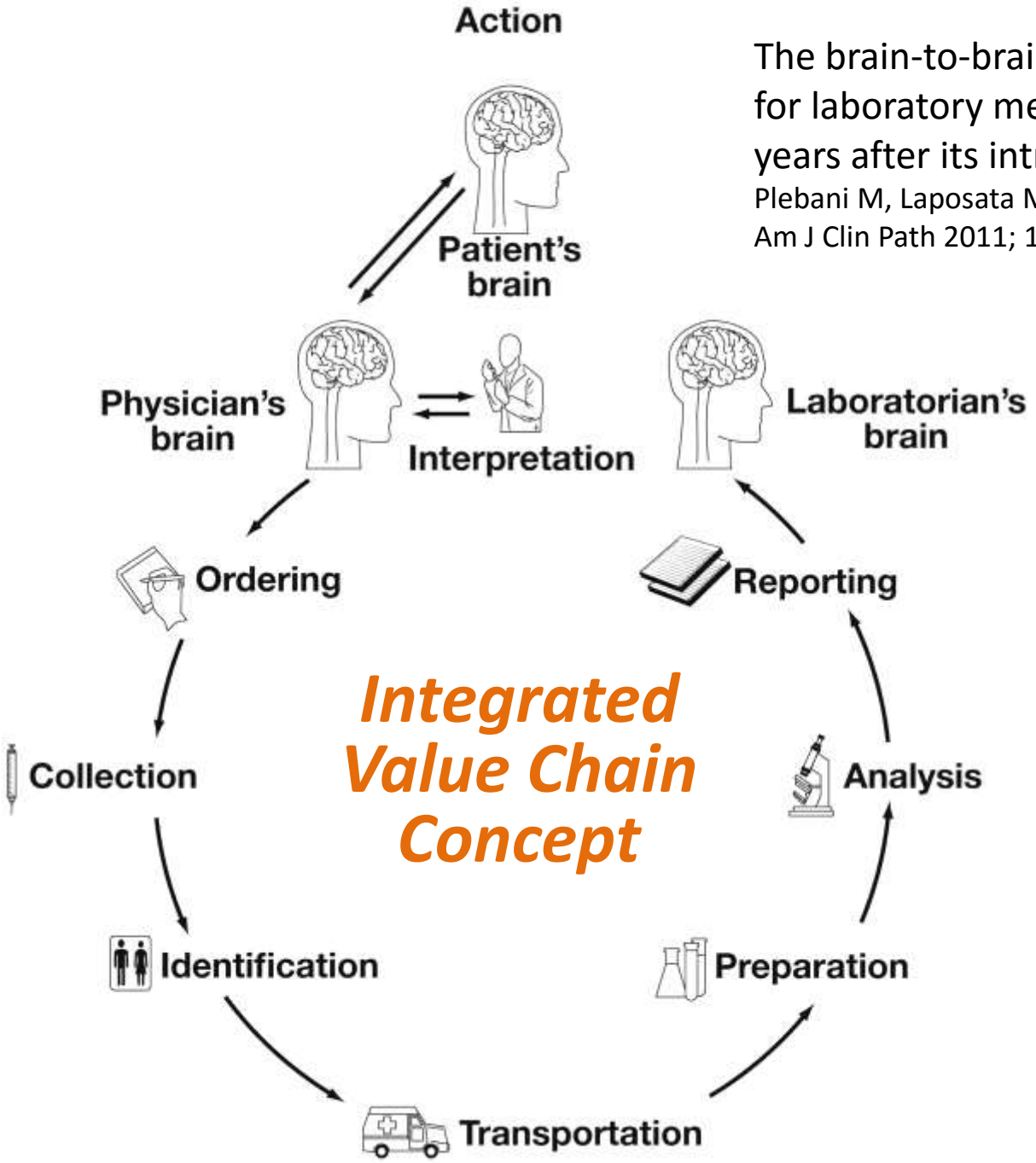
Laboratory medicine

more than just "Analysis in Action"





The brain-to-brain loop concept for laboratory medicine 40 years after its introduction.

Plebani M, Laposata M, Lundberg GD. Am J Clin Path 2011; 136:829-33

Integrated Value Chain Concept

Changing Role of *Lab Medicine*

- **From:**
  - Specimen-centred Clinical testing
  - Lab. performance
  - Provider of results
- **To:**
  - Patient-centred Clinical decision-making
  - Patient outcomes
  - Partner in care

Taskforce Recommendations
Call to action

- Agree *definition and validation of effectiveness measures* – a "common currency" for outcomes
- *Benchmark existing and new biomarkers* in specified situations using commonly accepted effectiveness measures
- *Improve utilization of new and existing biomarkers* –
  - optimum testing strategies based on presenting complaint
  - support of effective requesting
  - timely and appropriate result transmission
  - availability of consultation and interpretation
  - audit of effectiveness in practice

Taskforce Recommendations:
Ensuring appropriate test utilization

- To be of use, a test must be applied appropriately
  - Epner et al. (2013) have described the *five basic ways in which the testing process can go wrong*:

    1. An inappropriate test is ordered
    2. An appropriate test is not ordered
    3. An appropriate test result is misinterpreted or misapplied
    4. An appropriate test is ordered, but is delayed or misrouted within the testing process and is not available where it is needed at the time it is needed
    5. The result of an appropriately ordered test is inaccurate

Landscape of Inappropriate Test Utilization

A 15-Year Meta-Analysis

(Zhi et al. 2013: PLoS One 8(11): e78962)

- 42 studies
  - 38 investigated overutilization
  - 8 investigated underutilization
  - 4 both
  - 31 objective/11 subjective criteria
  - 20 looked at >1 test

Overall mean rate of inappropriate overutilization = 20.6% (95% CI 16.2 – 24.9%, n=114)

Overall mean rate of underutilization = 44.8%

- (95% CI 33.8-55.8%, n= 18)

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Taskforce Recommendations:
Reduce and eliminate waste

- Reports from New England Health Institute and Dartmouth Medical School suggest that the cost of potentially avoidable clinical care is estimated as 30% of total healthcare spending. If this waste could be eliminated, over $700 billion could be saved annually.

Eliminate Waste To-do List

- Determine scenarios that justify expensive tests.
- Eliminate obsolete testing, such as bleeding times.
- Reduce non-value added testing. Providers waste time explaining why a patient's Chloride is 99.
- Create testing formularies.
- Develop algorithms, sequential protocols.
- Provide peer-to-peer data.

Figure 2: Eliminate Waste

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Taskforce Recommendations: Develop "best practice" ordering guidelines

- With their clinical knowledge and experience, laboratory professionals can advise clinicians about appropriate test orders and enhance test interpretations

CDC Identified Problems Associated with Incorrect Test Selection and Interpretation:

- Large lab test compendium
- Inconsistency in test names
- Inconsistent guidelines for test usage
- Lack of training in lab medicine during medical school
- Limited knowledge of laboratory function
- Growth of molecular diagnostic testing

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Published Taskforce Report

- Special issue eJIFCC January 2015

  www.ifcc.org

- IFCC Task Force report

  "Current Evidence and Future Perspectives on the Effective Practice of Patient-Centered Laboratory Medicine": Hallworth MJ et al.

  Clinical Chemistry – April 2015

  (doi:10.1373/clinchem.2014.232629)