Laboratory Stewardship Essentials

Presented by: Andrew Fletcher, MD, CPE
Medical Director, Consultative Services
Learning objectives

After this webinar, you will be able to:

• Describe ways to establish a Laboratory Stewardship program with appropriate governance and engage ordering physicians
• Identify opportunities to consolidate reference testing to improve patient care with shorter times to diagnosis and cost savings
• Develop and implement a reference laboratory test formulary
• Analyze in-house ordering patterns to identify over, under, and misuse of tests
• Identify opportunities and strategies to reduce duplicate and daily in-house tests
• Formulate strategies to minimize downstream costs through appropriate testing
Where to start?

The Essentials

• Test Consolidation
  o How many reference labs do you use?

• Reference test formulary
  o Creation & Implementation

• In-House Testing
  o Daily recurring labs
  o Inappropriate test intervals
Background

13 Billion tests performed
70% decisions based
10-30% unnecessary
Background

3 most significant causes of patient harm
• Ordering the **wrong** test
• Failing to **retrieve** a test result
• **Misinterpreting** a test result
the average medical doctor prescribes an unnecessary test or procedure at least once a week.

47% of doctors prescribe an unnecessary test or procedure at least once a week.

72% of doctors even if they know a medical test is unnecessary, they order it if a patient insists.

53% of doctors the frequency of unnecessary tests and procedures is a very or somewhat serious problem.

73% of doctors their patients ask for an unnecessary test or procedure at least once a week.
Trends in Healthcare

- Radiology Utilization management
- Blood Utilization
- Antimicrobial Stewardship
- Pharmacy Utilization management
- Laboratory Stewardship
Creating Successful Laboratory Stewardship

1/3 of labs have a stewardship program

1/2 of those labs have a productive and progressing committee

Success Factors
- Data Analysis
- Formal Governance
- Evidence-Based Recommendations
- IT Engagement and Support
- Project Management
- Measurement and Reporting
Transforming Laboratory Utilization Review into Laboratory Stewardship: Guidelines by the PLUGS National Committee for Laboratory Stewardship


Appropriate utilization of clinical laboratory services is important for patient care and requires institutional stewardship. Clinical laboratory stewardship programs are dedicated to improving the ordering, retrieval, and interpretation of appropriate laboratory tests. In addition, these programs focus on developing, maintaining, and improving systems to provide proper financial coverage for medically necessary testing. Overall, clinical laboratory stewardship programs help clinicians improve the quality of patient care while reducing costs to patients, hospitals, and health systems.

This document, which was created by a new multiinstitutional committee interested in promoting and formalizing laboratory stewardship, summarizes core elements of successful hospital-based clinical laboratory stewardship programs. The core elements will also be helpful for independent commercial clinical laboratories.

Pathology and laboratory medicine have transformed the practice of medicine by providing tests and services for diagnosis, treatment, monitoring, and prevention of disease and advancing in all fields of medicine. Laboratory testing is the single highest-volume medical activity with an estimated 1 billion tests performed in the US each year (1). In addition, about 70% of all medical decisions are based on pathology and laboratory medicine results (2).

The 3 most significant causes of patient harm related to laboratory services are ordering the wrong test, failing to retrieve a test, and misinterpreting a test result (3). A number of studies, as well as review of insurance claims, reveal that 10%-20% of laboratory tests performed in the US are either unnecessary or inappropriate (4). About 50% of generic test orders are inappropriate (5), and about 5% of genetic test orders are wrong or medical errors (6). About 7% of test results are never retrieved, or retrieval is significantly delayed (7). Like all medical interventions, inappropriate laboratory test ordering and interpretation have serious effects, including delayed treatment, increased costs, and worse outcomes.

Where to start?

Three initial areas of focus

• Test Consolidation
  o How many reference labs do you use?

• Reference test formulary
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Test Consolidation

How many reference laboratories do you use?

1. Is there a primary Vendor?

2. Why are tests sometimes not consolidated?
   - Physician Request
   - Patient Request
   - Insurance requirement
   - Easier process for lab staff

Free Phenytoin at Lab X $106
Free Phenytoin at Primary Lab vendor $13
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Test Formulary

Review
- all send out testing performed in 1 year

Eliminate
- test listing in menu if ordered <4 times in 1 year

Review
- remaining test on menu to see if reasonable
POE Optimization

Vitamin D
- 1,25-Dihydroxy vitamin D
- 25-Hydroxy vitamin D

Flu
- Flu PCR
- Flu respiratory viral panel
- Flu screen

Folate
- Folate (RBC)
- Folate (serum)

Gonorrhea
- Gonorrhea culture
- Gonorrhea DNA probe
POE Optimization
## Financial Impacts

<table>
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<tr>
<th>Inpatient Reference test cost</th>
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<tr>
<td>Monthly average pre Formulary</td>
<td>$31,054</td>
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<tr>
<td>Monthly average post Formulary</td>
<td>$20,028</td>
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<td>Percent decrease</td>
<td>35%</td>
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<tr>
<td>Average monthly savings</td>
<td>$11,026</td>
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<tr>
<td>Projected yearly savings</td>
<td>$132,309</td>
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Commonly Misordered Tests

Test Removal & Reflex Path Implementation

- MTHFR 2 Mutations: 85%
- Factor V Leiden: 86%
- APC w/reflex to Factor V Leiden
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Daily Orders

Don’t perform repetitive CBC and chemistry testing in the face of clinical and lab stability.

Don’t order diagnostic tests at regular intervals (such as every day), but rather in response to specific clinical questions.
Intervention Methods

Proactive
- Appropriate order sets
- Order management
- Preference list management
- Physician education
- Physician report cards

Reactive
- Duplicate alerts
- Formulary restriction alerts
- Best Practice Alerts
- Physician education
Best Practice Alert

Order placed for the procedure in last 30 days

Order # 76548965
Ordered: 76548965
By: Zyne Cotopaxi, MD
Resulted: 09/04/2016 15:47
Collected: 09/04/2016 13:00

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
<th>Units</th>
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<tr>
<td>Thyroid Stimulating Hormone</td>
<td>4.0</td>
<td>IU/mL</td>
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</table>

Continue placing order?

Yes  No
Troponin Orders and Chest Pain LOS
Troponin I

Identify order mechanisms that drive the repeat interval

Modify the repeat time to be 3-6 hours after

Improve the time-to-decision by improving the test interval by up to 3 hours
Troponin I

Identify order mechanisms that drive the repeat interval

Modify the repeat time to be 3-6 hours after

**Improve** the time-to-decision by improving the test interval by up to **3 hours**
Downstream Impact on Pharmacy

IVIG
Argatroban
Remicade
Summary

Justification for Stewardship

NCLS Recommendations

Three initial area of focus:

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Questions?

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