Laboratory Test Utilization Strategies
Part 1

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Laboratory Test Utilization Series: Part 1

Disclosures
- None

Laboratory Test Utilization Definition
- A strategy for performing appropriate laboratory and pathology testing with the goal of providing high-quality, cost-effective patient care
- Is it financially or medically driven?
  - If the focus is solely on money, then any test utilization effort will at best have mediocre success
  - If good medical practice is the focus, then test utilization will have longevity and will adapt to healthcare changes

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Health Care and Laboratory Costs

- Annual United States health care expenditures:
  - $2.6 trillion
- Laboratory tests including anatomic pathology:
  - $60 to $70 billion
  - ~4% of health care costs
  - 20% to 25% increase annually
  - Molecular/Genetics is 15% of laboratory costs; anticipated to reach 25% soon
  - Largest growth: proprietary tests, genetic tests, and test bundling

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Mayo Value Equation

Value = \frac{\text{Outcomes} + \text{Service} + \text{Safety}}{\text{Cost over time}}

This is the laboratory’s formula for an ACO!

- Right test
- Right patient
- Right time
- Done right

Do We Have Laboratory Utilization Issues?
A Bone Marrow Study
Patient comes to Mayo Clinic; outside work-up; straightforward diagnosis of primary myelofibrosis

Laboratory assays performed:
- Bone marrow morphology
- Immunohistochemical stains
- Flow cytometry
- T-cell gene rearrangement studies
- Cytogenetic karyotype
- BCR-ABL1 FISH
- MDS FISH
- Gene array analysis
- JAK2 V617F
- JAK2 exon 12 sequencing
- MPL exon 10 sequencing

Why Do We Have Utilization Issues?
- Realities of today's clinical practices
- The "Knowledge Gap"
- Laboratory systems and processes
- Overbundled test panels
- Wrongly aligned incentives
- Societal and patient demands

Realities of Today's Clinical Practices
- Various levels of understanding of how to use today's laboratory assays amongst clinicians
- Patients with particular diseases may not see that disease subspecialist
- Clinical knowledge, when a test is ordered, is incomplete.
  - The clinician is compelled to order everything as it may be the only chance to get that information.
- Initial laboratory studies can help narrow the diagnostic choices and testing needs
  - But if laboratories don't have a review and ordering process in place, clinicians have no choice but to order excess testing!
The "Knowledge Gap"

- Knowledge gap between clinicians and laboratory
- Knowledge gap between science and therapies
- Laboratories do not provide guidance for the appropriate use of assays in various diseases
- New tests emerge without an effort to understand how these tests should be utilized in the context of other existing assays

What Do We Do Next?

- Order is processed
- Lab performs test
- Lab sends results
- MD requests tests
- MD acts on the results
- MD interprets test
- CEO: What's the margin?
- CEO: We're an ACO!
Utilization Management Tools

- Provide clinician education—albeit little lasting impact
  - Necessary first step
- Obsolete certain tests
  - Examples: Bleeding time, band counts, most erythrocyte sedimentation rates, etc.
- Establish gatekeeper functions
  - Identify tests that require laboratory review
- Restrict the frequency of specific tests
  - Focus on hospitalized patient
- Review admission and treatment templates
  - Look for redundancies and test frequency

Utilization Management Tools

- Use order entry pop-ups and online decision support tools to provide immediate guidance for ordering
  - For example, same day/repeat ordering of non-emergent tests
- Use physician profiling or report cards as feedback
  - Use Transfusion Medicine practices on blood product utilization as a guide
- Establish a utilization review process for send-out tests
  - Restrict ordering of expensive send-out tests to certain specialists
  - Establish medical criteria for sending out high-cost tests
  - Insert a laboratory review process for certain tests

Utilization Management Tools

- Create laboratory guidelines or algorithms with clinical colleagues. Four types of algorithms:
  - IT-driven: Clinical input and information drive what testing gets done
  - Laboratory-driven: Laboratory results drive subsequent test selection
  - Pathologist-driven: Review of pathology findings determine next steps in testing algorithms
  - Genetic Counselor or other laboratory staff: Review of genetic test requests require genetic experts with laboratory knowledge

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Laboratory-Driven Algorithm

- Flow cytometry - Mayo Clinic uses a triage approach
  - 8 antibodies to screen for B-cell clonality, increase in blasts, and abnormal T-cell phenotype
  - Integrate with morphologic features, previous or concurrent studies, and any provided clinical history
  - Results drive whether to stop or to add more disease-specific antibodies
  - 80% of Mayo Medical Laboratory requests stop at the triage step
- Many labs use a shotgun approach with 20+ antibodies

Labs Vary in the Number of Antibodies Used
(Each Bar Represents a Unique Lab)

Mayo Rochester Hematopathology

- Background: 15+ year history of utilization controls for flow cytometry and stains
- Perception: Too many cytogenetic, FISH, and molecular assays were being requested
- Process:
  - Gathered data; analyzed utilization patterns
  - Compared to medical knowledge and literature
- Developed guidelines and algorithms with clinical groups

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How Do We Start a Utilization Program?

- **First, ask yourself critical questions**
  - Do you believe you have a utilization problem?
  - Do you have an organization that wants to respond?
  - Do you have a laboratory practice committee to answer medical questions and provide leadership?
  - Are there opportunities to dialogue between laboratory and clinicians?
  - Are you prepared to answer the financial questions that will arise?
  - Do you have a local champion who will be able to lead “the talk” about utilization issues?
The Changing Laboratory Paradigm

Utilization management

Value!

Quality

Cost

Service

Clinical effectiveness

Data integration

What’s next?

• Part 2 in the series
  • Dr. Amy Saenger discusses test utilization in the Clinical Chemistry laboratory

Questions or requests...
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