Value of Pathologists in Current and Future Healthcare Practice

April 5, 2014
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Disclosures
I have no 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.

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Annual Per Capita Healthcare Costs by Age

In 2013, Healthcare Experienced Largest Drop in Job Growth Since 1990 and Hospitals Are Shedding Jobs; These Trends Are Likely to Mean Less Resources for Hospital Laboratories

February 12, 2014
Market indicators support predictions of tougher financial times ahead for hospital-based clinical laboratories and pathology groups

Health Insurers Encourage Physicians to Help Patients Use Cost and Quality Data to Select Providers, Including Medical Laboratories

January 27, 2014
Employers and health insurers want more consumers use healthcare cost estimator tools and pride when choosing a hospital, physician, or clinical laboratory

Facing the Looming End of Fee-for-Service, Clinical Laboratories and Anatomic Pathology Groups Look for New Business Models

March 31, 2014
Failing finances at technical pathology laboratories may be the most immediate concern for many pathology group practices

Many clinical laboratories and anatomic pathology groups now recognize the new reality of the American healthcare system: less reimbursement for laboratory testing. On one hand, the fee-for-service prices for lab tests paid by government and private payers have been aggressively slashed.

On the other hand, all payers have become stubbornly resistant to issuing coverage guidelines and setting adequate prices for the flood of new molecular assays and gene tests coming to market.
Our executives don’t want to know.

More Bad News for Medical Labs and Pathology Groups
The bad news for labs doesn’t stop there. Today, the majority of office-based physicians are now employees. Mostly hospitals and health systems now own their medical practices. These owners typically want their own clinical labs to do the testing in support of the office-based physician practices they own and operate.

Clinical Laboratory Industry Needs New Business Models
Two traits in common. First, they are stepping forward to engage referring physicians with a full range of information-rich lab testing services and consultations that help improve patient outcomes, while lowering the overall cost per healthcare encounter.

Second, these first-mover clinical labs and pathology groups recognize the value of collaboration and developing regional service networks. Yes, this is a strategy designed to mirror the creation of regionality based ACOs, medical homes, and integrated health systems in their communities.

Labs Push To Cut Costs As Budgets, Prices Shrink
Repetitive budget cuts and lower test prices are now forcing labs to aggressively cut costs.

CEQ SUMMARY: Cost-cutting is now the prime directive at progressive labs across America. This is due to shrunken reimbursements and other pressures, including the Medicare Part B price cuts if mandates for five consecutive years. For this reason, proven ways laboratories can use to cut costs will be the main theme of the Lab Quality Contab that takes place on October 1-2, 2013.

By Robert L. Michel

PeaceHealth Lab Helps Docs With Info to Improve Outcomes

Report Cards Benefit primarily for payors

Life in The Laboratory
The better a laboratory operates, the more it looks like a commodity.

• We adapt and provide whatever services are necessary, but there is a lot behind it.

• Troubles come when demands outstrip capabilities.
The Pressure is Intense on Everyone

- All of medicine is being pressured to do more with less.
- It is not possible to succeed simply by working harder.
- After a point, pressure produces only anxiety and frustration.
- Our opportunity is to help others do more with less.

What Makes a Killer App

- People will pay a premium price, digest all kinds of instructions and change lots of habits in order to get a job done better and faster that they have been trying to do.
- The graveyard of failed products is full of things that people should have wanted – if only they could have been convinced those things were good for them.
- The home-run products in are concepts that help people more affordably, effortlessly, swiftly and effectively do tasks they already had been trying to do.

Killer Apps
Disrupt Industries

- Originally
  - A computer program that people found so valuable that they would buy an expensive new computer system just to get the program.
- For us
  - A pathology/laboratory medicine offering that people demand more of and are willing to pay.

The convergence of social and economic factors together with advances in medical science and informatics presages a “Golden Era of Diagnostics”.

“In the future, diagnostics will become quite profitable relative to therapeutics because the value of defining and solving the right problem is immense.” (Clayton Christensen)

So why are they picking on us? 2% savings will not do much.

Yes, but “they drive all the rest” (SEAPC Meeting, Don Bradley, Blue Cross Medical Director of North Carolina)

In the coming era of medicine, the most valuable physicians could be pathologists and clinical scientists who can influence practice patterns of other physicians.
The problem is not too many lab tests. The problem is information overload and arcane procedures of ordering and reporting that produce confusion and inability to interpret them or follow up appropriately. Our opportunity is to help others with these things.

Four Areas of Opportunity

1. When time of complex testing and interpretation is critical. 
   - Microbiology
   - Heart failure surgery
2. Help physicians identify, justify, order, find and interpreting laboratory work ups. 
   - Institute consultative algorithmic workups.
3. Advanced testing of tissue samples (molecular, proteomic, etc.)
   - Oncology
   - Transplantation
4. Test Coordination in Population Health
   - Diabetes

System Antibiotic Utilization

- TMC has the sickest patients.
- Equipment, regimen and procedures are standardized across the system
- 273,467 adjusted patient days at TMC
- Savings on antibiotics, $2,000,000 - $3,000,000
- Millions more savings on ICU time, LOS, etc.
Blood Management

- **Preventing** a blood transfusion to the patient who doesn’t need one
- **Right** blood product, at the **right** time, in the **right** dose, to the **right** patient.

Improves patient outcomes
Conserves limited blood resource
Reduces cost of care
Helps satisfy regulatory requirements

Blood Usage Project

**Goals**
- Collect data on blood component usage at MHH-TMC
- Evidence-based education is the KEY
- Set up clinician-driven algorithms
- Set up periodic retrospective order reviews and educational materials
- Set up real-time order review
- Offer consultation to outliers
- Prospective outcome research to support the project
- Management scorecards to track improvement outcomes

Intraoperative coagulation-based hemotheraphy protocol decreases overall blood utilization with left ventricular assist device implantation

- Bleeding complications and blood transfusion administration are associated with increased morbidity and mortality after major cardiac surgery.
- We developed an intraoperative algorithm for transfusion support using integrated analysis of functional hemostatic assay results and transfusion triggers.
- No significant post-operative bleeding was observed and there was no need for factor VIIa administration for the first 17 patients.
- The cumulative transfusion rate of our patients was 15.4 units, much lower than the previously published transfusion rates of 37 or 93.1 units.
Getting Paid

1. Hospital energetically works to control blood utilization, but refuses to pay pathologists since they can not conveniently measure benefits.
2. Hospital pays well for taking care of high risk of bleeding patients because surgeons demand it and the service is profitable.

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Harris County Hospital District

- 3rd Largest County in the US  
- 7500 FTE  
- $1.2 Billion budget (property taxes)  
- 3 Hospitals  
- 2 Medical Schools  
- 44 Site Ambulatory Network  
  - >1,000,000 visits annually  
  - 10,000 consult / month  
  - 10,000 call for appointments per week

HCHD Outpatient Payor Mix

- Charity / Self Pay  
- Medicaid  
- Medicare  
- Commercial and Other

How did we get where we are?

Medicare medical necessity rules were designed to prevent fraud, not to promote efficiency.

- The necessity of justifying every test on every patient is a huge time waster.  
- Places extraordinary demands on the knowledge of physicians that result in inappropriate tests, consultations, delays and errors.  
- Why not produce actionable information, not just numbers?  
Order laboratory workups like we order clinical consultations and biopsy examinations?  
- HCHD has a bundled payment structure well suited to pioneer better ways of doing things.
Primary Care Physicians Conversations

- QUESTION: What would you like differently from laboratories?
  - Faster turnaround time
  - More point-of-care
- OK, tell me about your day. What are your time wasters?
- Laboratory workups.
  - Test results trickle in over 2 weeks so I must look for them several times, collate them, call the patient back for follow up tests and start over.
  - I frequently order ‘everything’ to save time.
- Consults:
  - I scheduled a patient for a consult in the liver clinic.
    - Six weeks later, he came back with a note that his liver function tests did not qualify him for the clinic.
  - I referred a young woman to the rheumatology clinic for suspicion of lupus.
    - Six months later, when she finally got an appointment, she had kidney failure.
- Half of my hospitalized patients have ANA. They all get a remission, then relapse and die. Help me do better.

Primary Care Physicians Conversations 2

- Rheumatology Clinic
  - 180 day wait for new appointments.
  - Over half of new patients do not have conditions that require rheumatologists for treatment.
  - Most of the rest are inadequately worked up at the time of their first appointment.
- Why does it happen?
  - The primary care physician frequently does not have time nor the knowledge to work the patients up optimally.
  - The specialists are bogged down with patients they can not help.
- Conclusions
  - Movement of patients and information among outpatient providers is frequently chaotic and wasteful.
  - Both primary care and specialist physicians have increasing demands to see more patients in less time.

What does the patient’s treating physician want?

Help!
- Fast and accurate results
- Understandable and useful information
- Direction on therapy

LBJ Lupus/ANA Preconsult Algorithm

Patient suspected to have lupus 
Order ANA titer and pattern

ANA positive
- ANA subsets
  - anti-double strand DNA
  - anti-Smith, anti-RNP
  - SSA and SSB

ANA negative
- Referral Denied
  - Refer to rheumatology clinic

ANA >1:160 or positive ANA subset(s)
- Referral Accepted

Urinalysis
- Sed rate (ESR)
- Creatinine Protein
- CBC (within 3 month)
- CMP (within 3 month)

TSH
- Hepatitis Panel
- ANA ≤ 1:80
- Negative ANA subsets

Appointment with Rheumatology

Designed by
Dr. Binh Yen Nguyen, Rheumatology
Dr. Lei Chen, Pathology

The Deliverables

- Evidence Based PreConsult Evaluations
  - Evidence based laboratory workup of patients prior to specialty consultation in hematology, endocrinology, rheumatology, nephrology, etc.
    - Insure that referrals have the appropriate testing done ahead of time.
    - Help specialists see more patients that they can actually help.
  - Reduce backlog for consultations.
  - Help the specialist see patients whom he/she can help.
- Evidence Based Algorithmic Diagnostic Workups
  - Execute a testing algorithm to arrive at the best diagnosis with the fewest tests in the shortest time at the lowest cost.
    - Produce a narrative interpretation that provides actionable evidence based information in addition to numbers.
    - Facilitates compliance with evidence based workups
    - Saves time and office visits for primary care physicians.

Activation of the Rheumatology Pilot Algorithm

- Ask IS to establish an orderable that contains specimen information and a large text box for the results.
- Identify a tech to manually order tests and execute the algorithm.
- Pathologist prepares narrative summary of testing and results that are pasted into the lab computer.
- Begin with patients who are waiting for initial rheumatology appointments.
- Collect data to improve processes and document efficacy.
Benefits

- Help primary care physicians with diagnostic problems
- See patients faster with less anxiety
- Increased patient satisfaction

- Help specialty physicians see more patients who they can treat
- Less time to order tests, collect, collate and interpret results.
- Fewer return office visits for diagnostic problems.

- Reduce diagnostic errors that:
  - Occur in as much as 15% of cases.*
  - Are responsible for twice as many adverse events as medication errors.**
  - 44% of the diagnostic errors were failure to order, report, process or follow up on results of tests or x-rays.
  - 70% of diagnostic errors have been attributed to**
  - Data gathering (pathology can help)
  - Data Synthesis (pathology can help)
  - Clinical knowledge (pathology can help)

- Reduce diagnostic errors that:

  * DiagnosFc Errors in Acute Care” in Patient Safadvise 2010 Sept;7(3):76-86.
  **Creating a Value-Driven Laboratory: Opportunities in the New Marketplace. J2 Intelligence, 2012

How do we get paid?

Clinical Pathology Consultations

A clinical pathology consultation is a service, including a written report, rendered by the pathologist in response to a request from an attending physician in relation to a test result(s) requiring additional medical interpretive judgment.

- 80500 Clinical pathology consultation: limited. without review of patient’s history and medical records.
- 80502 comprehensive, for a complex diagnostic problem with review of patient’s history and medical record.

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   - Diabetes

Clinical Trials Find Success with Use of Next-Generation Gene Sequencing: Could Lead to More Precise Clinical Pathology Laboratory Tests

February 10, 2014

Pathologists and medical lab scientists may do more consults with interdisciplinary teams in connection with biomarker-based phase I clinical trial selection

Major Healthcare Systems Begin Building In-House Whole Human Genome Sequencing Capabilities, Creating New Opportunities for Pathologists

February 5, 2014

Partners HealthCare and Geisinger Health are among health systems making investments and developing the clinical utility of genome sequencing
Morphoproteomics
Personalized Cancer Therapy from a slide

Many talk about personalized therapy of cancer, We do it.

Dr. Robert Brown and team

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Diabetes: Complications

**Macrovascular**
- Stroke
- Heart disease and hypertension
- Peripheral vascular disease

**Microvascular**
- Diabetic eye disease (retinopathy and cataracts)
- Renal disease
- Neuropathy
- Foot problems

Diabetes in the Harris County Hospital District

Estimated 60,000 patients with diabetes

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<td>Total</td>
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DIABETES CARE MANAGEMENT

People with diabetes should receive medical care from a team that may include:

- Physicians, nurse practitioners, physician’s assistants, nurses, dietitians, pharmacists, mental health professionals.
- HCHD problem includes laboratory logistics
  - 30% of HbA1c ordered tests are never drawn
  - Many others do not get to the physician and patient efficiently.

Groups of patients to be screened for DM

The challenge is to identify unsuspected disease

- All patients that walk-in the EC
- Patients over 45 years-old (as a first time visit to their PCPs)
- All pregnant women (OB/GYN consults; in their 1st or 2nd visit)

Physician must get results before seeing the patient

The DCA Vantage Analyzer is a point-of-care immunoassay analyzer for diabetes management for use in the physician office or lab, diabetes care clinic, or POC coordinated site. It provides quantitative test results for HbA1c in whole blood during the patient visit to help improve decision making. With a single urine sample, the analyzer also provides quantitative test results for low levels of Albumin, Creatinine and A/C ratios in the physician office or clinic.
What will make us successful in the “Golden Age of Diagnostics”

1) Talk with responsible parties to find out what troubles them and devise a way to help.
   - Physicians
   - Hospital administrators
   - Clinic Directors
   - Payors
   - Patients
2) Master the discipline and tools of medical science and informatics to facilitate development of new services to satisfy emerging needs.
3) Find ways to document the value.

Summary

• Don’t look to solve problems.
  — It will only dissipate your energy on secondary issues
• Seek opportunities
• The greatest risk it to take no risks at all.

THANK YOU