

# Combining Test Formularies, Algorithms, and CPOE to Significantly Reduce Lab Test Utilization

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# WHY?

- Reimbursement pressures are stronger than ever. Many Uninsured/underinsured.
- Unnecessary, outdated or inappropriate tests cost more, not just financially, but also in terms of care.
- As newer tests come about, not all have real clinical value and increase costs.
- Too much information is being thrown at physicians and the lab can help filter it.

# How?

- Clinician time is shrinking so they need and want assistance in sorting through the maze.
- Pathologists and Laboratorians are in the position to assist the clinician in sorting through the maze of lab offerings.
- It is critical to involve the various clinical specialties in the process so that their needs can be successfully addressed and met.

# WHO?

- Program can not be dictated by the laboratory nor by pathology.
- A multi-specialty committee comprised of clinicians with assistance and guidance from the laboratory is usually well received.
  - Patterned after the Pharmacy Formulary
- Should not be seen as an Administration dictum, but as a clinician initiated best practice.

# What is Broward Health

- Quasi-governmental division (Tax District) of the State of Florida.
- Officially designated as “The North Broward Hospital District” DBA Broward Health.
- 10<sup>th</sup> Largest Public Healthcare System in the country.
- 2<sup>nd</sup> Busiest ED and Trauma Service in Florida.
- Teaching Facility associated with 3 medical schools and numerous other educational facilities.

# Financial Realities

- Inpatient reimbursement is capitated/DRG or Per Diem based. <6% is fee for service.
- Outpatient reimbursement is primarily APC or capitated - ~40% is % of charges.
- BH provided \$ 326.3 M in charity and \$371M in “bad debt write-offs” in FY 2013.
- While we are still profitable as a system, several of our sites struggle with their operational expenses.

# Broward Health Laboratory

- Designed as “One Lab with multiple sites”.
- Major locations at:
  - Broward Health Medical Center (Core)
  - Broward Health North (North part of Broward)
  - Broward Health Imperial Point (Central Broward)
  - Broward Health Coral Springs (West Broward)
  - Broward Health Weston (Southwest Broward)
  - Chris Evert Children’s Hospital
  - Community Health Services (Clinics through out)
    - Serve the un and under-insured of the community

# Evolution of the Process

- CPOE was the first phase and provided the beginning opportunity through a commitment to “Best Practices”. Began over 3 years ago.
  - During CPOE design, several committees were created. A Steering Committee oversaw the work.
    - EBC (Evidence Based Care) –multi-disciplinary committee charged with “streamlining the process and reducing variation in practices”.
    - PAC (Physician Advisory Committee)- Began as a physician committee reviewing the EBC recommendations. Evolved into having some non-physicians as members . They approved the EBC designed “Order Sets”.



# CPOE Committees

- Began with Steering Committee and task force taking all existing standing orders, combining and standardizing them.
  - EBC took those orders and evaluated them against Evidence Based Best Practices. Physicians on this committee represented their colleagues.
  - EBC edited, made changes and shared the data and reasoning with PAC.
  - EBC then designed the “Order Sets” and passed them to PAC for approval and implementation.

# Order Set Design

- Order sets allowed for standardization and reduction in practice variation.
- For Lab, it was first step to remove outdated or duplicative test offerings.
  - Eliminated “Cardiac Panel” in favor of Troponin I.
    - CKMB can be ordered separately but not with Troponin
  - Established “frequency” by procedure
    - ie: CMP can only be ordered every other day.
  - Eliminated many “non-AMA standard profiles”
    - Helped physicians set up “favorites” for common orders.

# Order Set Design (cont.)

- Established Blood Product Infusion Guidelines in the Order Sets.
  - Transfusion Criteria specified and must be documented before order can be placed.
  - Exceptions for emergencies were made.
  - Weight based pediatric calculation was designed into the Pediatric Transfusion Order Set.
    - >25 Kg calculation and instructions
    - <25 Kg calculation and instructions

# Additional Issues

- While CPOE was being developed, a simultaneous effort to control expensive, esoteric molecular and genetic testing was undertaken.
  - Expense was out of control, esp. in summer.
- This effort was driven by the Department of Pathology and Laboratory Medicine with strong support from Corporate and Individual facility Administration.

# Esoteric Testing Policy

- After consultation with specific clinical specialists, a system wide laboratory policy was developed.
  - Approved by all site Medical Laboratory Directors and presented to the site Med Exec Council.
  - Non-standard, esoteric, high cost (>\$1,000) assays required approval from Medical Lab Director or his/her Designee.
    - Insurance pre-qualification required.
    - Does the test result in change of treatment or outcome?

# IMPACT and REACTION

- Initially some clinicians were resistant but as the situation was explained, they agreed and were very cooperative.
- Tests were not “denied” but often were delayed and ordered as “outpatient” where there were more re-imbusement options and availability of some community health grants.
- Became a “non-issue” after only 3 months.
  - Now “special” orders frequently come with a phone call and pre-order documentation.

# Impact?

- Within the first 6 months of implementation, the Esoteric Testing Policy resulted in savings of nearly \$100,000 in testing that would not have been reimbursed and thus been paid by the system.
- Those same tests were reimbursed (fully or partially) in 65% of the cases when performed on an outpatient/community health basis.

# Test Ordering Assistance

- Concurrently, the laboratory began a monthly publication “Lab Info for Physicians”.
  - Initially designed to acquaint the system physicians (both independent and employed) with the laboratory services and the members of the Department of Pathology and Laboratory Medicine.
  - Physicians asked for more “testing updates” and similar information. This became a regular feature.
  - Publication is in its second year.



# Test Algorithms

- As part of the “ordering assistance”, the topic of Thyroid Testing was offered and we provided a “test ordering algorithm” in the Lab Info.
- It was very well received and several physicians asked for more such algorithms.
  - We researched and with cooperation and collaboration from Mayo Medical Labs and ARUP among others, have developed additional local algorithms for physician use.

# Test Algorithms

- As we add new test algorithms, we are placing them in the “physician portal” under the “LAB” tab.
- We are also streamlining by allowing for basic preliminary test order with “reflex” orders initiated by the lab based on test results.
- This has been well received by clinicians, and supported by the various clinical specialists.

# Lab Formulary Committee

- Most recent effort in the process.
  - A lab formulary will have little impact unless there is active engagement with the clinical practice by the laboratory.
- Strongly supported by Senior Management.
- All physician committee composed of volunteer members nominated from each site.
- 12 voting members from a variety of specialties.
  - Pathology and Laboratory Representatives are non voting members (coordination/expertise).

# Committee Makeup

- Each of the smaller sites (< 400 beds) has 2 representatives.
- Some of the representatives on the committee practice at multiple (or all) system hospitals.
- Multiple Specialties are represented.
  - Others invited as needed to ensure input.
- All must be ACTIVE clinically.
- Both Independent and Employed physicians are represented.

# Committee Makeup

- 1 Community Health Representative
- 1 Emergency Medicine (represents all EDs)
- 1 Pediatrics/NICU
- 1 Surgeon
- 1 OB/GYN
- 2 Family Practice
- 2 Internal Medicine (1 Inf. Disease)
- 2 Nephrologists
- 1 Pulmonary Med/Critical Care/Chair of PAC
- 1 Pathologist plus Corporate Lab Executive-non voting members

# Testing Tiers

- Tests sorted into 3 tiers
  - Tier 1 – any provider can order (includes most routine tests) however have frequency controls/alerts.
  - Tier 2 – limited to specialists, Sr. Fellows or consultants.
  - Tier 3 – only upon approval of pathologist or designee.
- We began by addressing send-out testing.
  - Looked at esoteric and questionable tests first.
  - Goal is to give physicians as much leeway as makes good clinical sense but avoid excess orders.

# Example of Subjects Covered

- GI send-out panels –
  - Celiac Panels offered by BHMC
  - Differences between BHMC and send-out panels
  - Do these make a clinical impact on care, etc.
  - Financial impact
- Flow Cytometry/FISH/Cytogenetic orders – fluids/tissues/bone marrow, etc.
  - Often ordered by clinicians as a shotgun approach
  - Suggested solutions –
    - At pathologist discretion only after reviewing histology
    - Clinical Impact
    - Financial Impact

# Summary of Actions

1. Control of expensive Esoteric send out tests.
  1. Started with molecular & genetic testing
2. Lab Info for Physicians – Education
  1. Includes test information and algorithms
  2. Identifies outdated and discontinued tests
3. CPOE process begun by examining current ordering patterns and matching to “best practices”.
  1. Affected frequency of test ordering
4. Formation of Utilization Steering Committee
  1. Authorized formation of Lab Formulary



# Summary of Actions (cont.)

- **Formation of Lab Formulary Committee**
  - Meets monthly – face to face or video conference.
  - Volunteer physicians from each site
  - Variety of specialty and primary care physicians
  - Information on outdated tests, questionable tests and appropriateness of testing shared prior to meetings.
  - Outliers are anonymously compared to best practices and peer education is implemented.
  - Still a new committee but clearly been effective in controlling utilization.

# Blood Utilization

- CPOE was used to enforce compliance with standards. Cannot order blood if criteria are not met and documented.
  - Exception made for trauma/emergency blood.
- Transfusion criteria are specific and were based on “best practices”. Criteria for all blood products- not just whole blood.
  - Pediatric/Neonate transfusions are weight/volume based for patient safety.

# Blood Utilization

- Blood product provider worked with us to maximize utilization.
- Platelet expiration reduced from 27% to 10.2% through careful management. Latest rate is 7.2%. RBC expiration rate is 0.4%
- Since program inception, we have incurred savings in excess of \$200,000 in platelet usage alone.
- Number of blood units utilized has decreased by 12% (992 units) over previous year.

# Financial Summary

- Estimated Impact July 2012 to July 2013 -  
\$871,000
  - Esoteric Approval - \$220 K savings plus outpatient revenue enhancement of \$68,000.
  - Other send-out test reductions - \$ 74,000
  - Platelet waste reduction- \$200,000
  - Reduced in-house testing - \$97,000
  - Red Blood Cell reduction - \$ 212,000

# Lessons Learned

- Things we did WELL.
  - Involved physicians from the beginning.
  - Did not dictate – gave the data and led the thought process.
  - Involved all sites- not just the “big house”.
  - Provided the financial data PLUS the clinical best practice information.
  - Used available resources- Did not re-invent the wheel.
  - Made this an educational process.
  - Obtained “Buy-In” from all parties.

# Lessons Learned (cont.)

- Things we COULD HAVE DONE BETTER
  - CPOE training- spent more time with physicians as individuals. CRITICALLY IMPORTANT!
  - Emphasized “with reflex” options sooner.
  - Done more to break down silo’ s between sites.
  - Been more aggressive with “Best Practices Standards” .
  - Been more proactive with education distribution.
  - Communicated with all parties even more than we did. COMMUNICATION IS NEVER ENOUGH!!!

# Resources

- ARUP Laboratories
- Mayo Medical Laboratory
- Internet sources:
  - Paul C. Levy, MD – Univ. of Rochester
  - Kent Lewandowski, MD – Mass General Hosp.
  - Michael Laposata, MD – Vanderbilt
  - College of American Pathologists
  - Brigham and Womens Hospital in Boston

Questions??