Test Utilization Management
An Update from the Trenches

Session Presenters

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    - Aurora CO

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  - Children’s Hospital Colorado
    - Aurora CO
Learning Objectives

Learning Objective #1: Understand the approach necessary to establish an effective test utilization management process.

Learning Objective #2: Understand and gain insight into real-life, relevant examples of test utilization management that can be applied for use elsewhere.

Learning Objective #3: Demonstrate the benefits and importance of implementing test utilization management tools as part of an effective overall resource stewardship strategy.
Anschutz Medical Campus Facts

• Located on site of decommissioned Fitzsimons Army Base
• Named because of $91 million donation by Anschutz family in 2006
• Second largest medical campus in the world (227 acres)
• Campus includes Children’s Hospital Colorado, University of Colorado Hospital, numerous research and education buildings, other support buildings, and (coming in 2016) the Veteran’s Administration Hospital
• Schools and colleges on campus include:
  • School of Dental Medicine
  • Graduate School
  • School of Medicine
  • College of Nursing
  • Skaggs School of Pharmacy
  • Colorado School of Public Health

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Children’s Hospital Colorado

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**Children’s Hospital Colorado Facts**

- In operation more than 100 years
- Affiliated with the School of Medicine, University of Colorado (Anschutz Medical Campus)
- Relocated to current campus from downtown Denver in 2007
- 16 locations throughout the state
- Licensed bed count: 593 total (444 at Anschutz Campus, 113 at Colorado Springs, 16 at South Campus, 20 at three other NOC sites)
- In 2014, provided care a total 111,400 inpatient days, performed 21,054 surgical cases and served our patients in 685,046 outpatient visits.
- Hospital staffing stands at 4,891 full time equivalents

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**2011: Why we focused on Utilization Management**

Our send out costs had spiraled out of control for four years…

**Costs per Send Out Year over Year**

<table>
<thead>
<tr>
<th>Year</th>
<th>Send Out Labs Ordered (orderables)</th>
<th>% Change in Orders</th>
<th>Cost (Total Invoices)</th>
<th>% Change in Cost</th>
<th>Cost per Send Out Ordered</th>
<th>% Change Cost per Order</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>23075</td>
<td></td>
<td>$2,533,152.84</td>
<td></td>
<td>$109.78</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>26064</td>
<td>12.95%</td>
<td>$3,532,407.62</td>
<td>39.45%</td>
<td>$135.53</td>
<td>23%</td>
</tr>
<tr>
<td>2008</td>
<td>28902</td>
<td>10.89%</td>
<td>$4,529,855.09</td>
<td>28.24%</td>
<td>$156.73</td>
<td>16%</td>
</tr>
<tr>
<td>2009</td>
<td>32934</td>
<td>13.95%</td>
<td>$6,160,780.16</td>
<td>36.00%</td>
<td>$187.06</td>
<td>19%</td>
</tr>
<tr>
<td>2010</td>
<td>39582</td>
<td>19.58%</td>
<td>$7,990,242.47</td>
<td>29.70%</td>
<td>$202.89</td>
<td>8%</td>
</tr>
</tbody>
</table>

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Next Steps

- We enlisted the assistance of our Quality Resources Department

- A Process Improvement Team was approved, assigned, and membership defined

- Formal PI steps were initiated, following the Six Sigma DMAIC Model (Define, Measure, Analyze, Improve, Control)
Defining the Problem: Ask the Right Questions

- **Budgeting / Forecasting**
  - Where did we not budget appropriately?
  - What practice and volume changes were made that were not included in our forecasting (new providers, new patients (diagnosis), new services (employee health services), etc)?

- **In-house Development**
  - Where have we fallen behind in our lab’s on-site capabilities?
  - Based on recent and future trends, where do we need to develop?

- **Consolidation**
  - Should be based on quality, service and value
  - What tests can we move to our primary reference lab from our other reference labs?
  - Who are the stakeholders in that process?

- **Patient Outcomes and Value**
  - Have outcomes improved accordingly?
  - Have long term costs decreased accordingly?

Defining the Problem: Articulate the Plan

- **Goal:** Reduce cost of lab purchased service by 8% by performing testing in-house

- **Goal:** Consolidate number of reference labs by 20%

- **Goal:** Decrease utilization

- **Goal:** At least slow down the increase (we did not pick specific target in this area)

- **Goal:** Improve misc. ref billing process

- **Goal:** Drop correct billing within five days of order

- **Goal:** Bring in-house

- **Goal:** Send outs

- **Vendor Consolidation**
Analyze/Improve/Control: Reference Lab Consolidation

- Even though we have a primary reference lab agreement with a major laboratory, we still have used >100 different laboratories; this has to do with being a pediatric hospital, but also has been to accommodate special physician requests
- Consolidating genetic and metabolic tests is especially challenging because test name usually not enough to determine clinical utility or equity with other providers/methods
- We focused on consolidating more tests to our primary reference lab, to our other affiliated labs on the Anschutz Campus, and to a selected lab for special tests
- This was accomplished through gaining consensus agreement from the key providers in key service lines
- We were limited in how far we could go with this approach because of internal politics, and the lack of a formal recognized authority to make some of the changes we desired
Measure – Narrow the Focus
Which Providers and Service Lines?
Who do we start meeting with for biggest impact?

<table>
<thead>
<tr>
<th>Service</th>
<th>Provider</th>
<th>2009 Cost</th>
<th>2010 Cost</th>
<th>$\Delta$ Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genetics</td>
<td>Dr A</td>
<td>$2,241</td>
<td>$61,848</td>
<td>$59,607</td>
<td>2660%</td>
</tr>
<tr>
<td>Neurology</td>
<td>Dr B</td>
<td>$17,269</td>
<td>$67,144</td>
<td>$49,875</td>
<td>289%</td>
</tr>
<tr>
<td>Genetics</td>
<td>Dr C</td>
<td>$16,501</td>
<td>$57,541</td>
<td>$41,040</td>
<td>249%</td>
</tr>
<tr>
<td>Neurology</td>
<td>Dr D</td>
<td>$8,472</td>
<td>$40,778</td>
<td>$32,306</td>
<td>381%</td>
</tr>
<tr>
<td>Neurology</td>
<td>Dr E</td>
<td>$15,421</td>
<td>$42,854</td>
<td>$27,433</td>
<td>178%</td>
</tr>
<tr>
<td>Genetics</td>
<td>Dr F</td>
<td>$49,757</td>
<td>$69,576</td>
<td>$19,819</td>
<td>40%</td>
</tr>
<tr>
<td>Metabolics</td>
<td>Dr G</td>
<td>$122,544</td>
<td>$136,085</td>
<td>$13,541</td>
<td>11%</td>
</tr>
<tr>
<td>Neurology</td>
<td>Dr H</td>
<td>$2,636</td>
<td>$11,269</td>
<td>$8,633</td>
<td>327%</td>
</tr>
<tr>
<td>Neurology</td>
<td>Dr I</td>
<td>$0</td>
<td>$6,898</td>
<td>$6,898</td>
<td>100%</td>
</tr>
<tr>
<td>Neurology</td>
<td>Dr J</td>
<td>$5,871</td>
<td>$8,488</td>
<td>$2,617</td>
<td>45%</td>
</tr>
<tr>
<td>Neurology</td>
<td>Dr K</td>
<td>$4,104</td>
<td>$6,558</td>
<td>$2,454</td>
<td>60%</td>
</tr>
</tbody>
</table>

Shows sampling of providers with largest increases in Send Out labs ordered. Demonstrates growth in strategic service lines (Neurology and Genetics)
How do we account for service line growth projections in our lab budget?

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Analyze/Improve/Control: Decreasing Utilization

- As the previous slide suggests, we found that the largest increases in send out test costs came from a small number of service lines (E.g. Genetics and Neurology) and providers within those lines
- We informed the providers of our interest in send out costs and that we would be monitoring them going forward; this probably produced some beneficial Hawthorne Effect
- We spoke with the ones with the highest increases, and asked them to validate the data
- We engaged a physician “champion” (a neurologist), who had taken a special personal interest in improving test utilization because of her desire to reduce costs to her patients and for advancement of the profession; she was willing to create treatment algorithms and testing cascades on her own time, and she teaches these to residents and colleagues

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Measure: Opportunities for Insourcing
What tests can we provide in-house?

• Focus review by management team on send out tests volumes
• Identify send out tests with sufficient volume
• Assess in house capability – instrument methodology and capacity, TAT expectations, staffing capacity and cost
• Determined a lot of capacity on specific instrumentation and significant potential to reduce send out test volumes with in-house testing with minimal impact to staffing

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Analyze/Improve/Control: In Sourcing Testing

• First phase of review identified 11 assays to perform in house.
• Assays were a focus and established in our lab
  • Annualized volume of 8000 tests
  • 20% of 2010 send out volume
• Projected Annual Saving
  Over $200K
  
KUDOS! To Chemistry

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Measure: MISCREF Billing Process

Baseline:
Total Cycle Time (median) 16 minutes
Total Lead Time (median) 27 days

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Analyze/Improve/Control: Billing Process for MISCREFs

• The process in use was disjointed, included many hand-offs and manual steps, and was not fully owned by one person or area
• It relied primarily upon one person on the night shift, who was sometimes busy and unable to process the work quickly
• Delays of days or weeks in getting bills generated were common
• Due to delays, roughly 15% of all 2010 MISCREFs were not billable, which amounts to $2m in lost charges
• Responsibilities were changed and centralized to a newly created Send Out area within Specimen Processing
• The new area was consistently staffed by trained staff who specialized and remain in that area
• Process steps were improved or eliminated when possible

• Results: median cycle time was decreased from 16 min to 9 min
• Result: median billing time was decreased from 27 days to 1 day

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Summary of Progress for 2011

<table>
<thead>
<tr>
<th>Year</th>
<th>Inpatient Admissions</th>
<th>Outpatient Visits*</th>
<th>Send Out Labs Ordered</th>
<th>Lab Purchased Services</th>
<th>Cost per Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volume</td>
<td>% Change (year over year)</td>
<td>Volume</td>
<td>% Change (year over year)</td>
<td>Volume</td>
</tr>
<tr>
<td>2005</td>
<td>9909</td>
<td>253253</td>
<td>20982</td>
<td>$2,322,547.12</td>
<td>0%</td>
</tr>
<tr>
<td>2006</td>
<td>9941</td>
<td>250704</td>
<td>23075</td>
<td>$2,533,152.84</td>
<td>9.07%</td>
</tr>
<tr>
<td>2007</td>
<td>10253</td>
<td>263658</td>
<td>26064</td>
<td>$3,532,407.62</td>
<td>39.45%</td>
</tr>
<tr>
<td>2008</td>
<td>11049</td>
<td>306488</td>
<td>28992</td>
<td>$4,529,855.09</td>
<td>28.24%</td>
</tr>
<tr>
<td>2009</td>
<td>12889</td>
<td>367098</td>
<td>32954</td>
<td>$6,180,780.18</td>
<td>38.60%</td>
</tr>
<tr>
<td>2010</td>
<td>13424</td>
<td>398738</td>
<td>39182</td>
<td>$7,990,242.67</td>
<td>29.70%</td>
</tr>
<tr>
<td>2011</td>
<td>13557</td>
<td>426475</td>
<td>35157</td>
<td>$7,517,380.86</td>
<td>-5.92%</td>
</tr>
</tbody>
</table>

2011 Send Outs:

- Cost per test decreased by $8.01 due to decrease in volume of expensive tests (e.g. genetic and metabolic tests which average $1200/test)
- New rates were not negotiated; prices did not decrease
- Total orders decreased 2%; total spend decreased 6%
- Patient volumes increased by 1% (IP) and 7% (OP)
- New assays were insourced – 20% of 2010 send out volume

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Summary of Progress for 2011

2011 Progress:
Lab Send Out Utilization

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Progress Continued in 2012

• The establishment and evolution of the Laboratory Diagnostics and Therapeutics Committee (Lab D&T); gained firmer recognition and a decision was made to seek formal medical staff committee status from the Medical Board

• We joined an exciting new consortium of laboratories (Pediatric Laboratory Utilization Guidance Services or “PLUGS”

• We brought additional tests in-house

• We gained approval to purchase a NextGen sequencer and a second electron microscope, and to expand our client-billed lab outreach operations

• We began process of consolidation with other campus laboratories to whom we currently refer tests

Continued Progress in 2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Send Out Costs</th>
<th>% Change</th>
<th>IP Admits</th>
<th>% Change</th>
<th>OP Visits</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>$2,322,547</td>
<td></td>
<td>9,909</td>
<td></td>
<td>253,253</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>$2,533,153</td>
<td>9.1%</td>
<td>9,941</td>
<td>0.3%</td>
<td>250,704</td>
<td>1.0%</td>
</tr>
<tr>
<td>2007</td>
<td>$3,532,408</td>
<td>39.5%</td>
<td>10,253</td>
<td>3.1%</td>
<td>263,658</td>
<td>5.2%</td>
</tr>
<tr>
<td>2008</td>
<td>$4,529,855</td>
<td>28.2%</td>
<td>11,649</td>
<td>13.6%</td>
<td>306,468</td>
<td>16.2%</td>
</tr>
<tr>
<td>2009</td>
<td>$6,160,780</td>
<td>36.0%</td>
<td>12,869</td>
<td>10.5%</td>
<td>367,098</td>
<td>19.8%</td>
</tr>
<tr>
<td>2010</td>
<td>$7,990,242</td>
<td>29.7%</td>
<td>13,424</td>
<td>4.3%</td>
<td>398,738</td>
<td>8.6%</td>
</tr>
<tr>
<td>2011</td>
<td>$7,517,381</td>
<td>(5.9%)</td>
<td>13,557</td>
<td>1.0%</td>
<td>426,475</td>
<td>7.0%</td>
</tr>
<tr>
<td>2012</td>
<td>$7,711,880</td>
<td>2.6%</td>
<td>13,683</td>
<td>1.5%</td>
<td>455,911</td>
<td>5.9%</td>
</tr>
</tbody>
</table>

Note: The average rate of increase in send out costs from 2007-2010 was 33.0%. Had that trend continued through 2012, costs in 2011 would have been $10.6 million , and costs in 2012 would have been $14.2 million
Key Milestones – but was it enough?

- The curve was bent: the rate of increase in send out costs was dramatically slowed in 2011, with minimal growth in 2012
- The concept of test utilization management was gaining traction
- Providers were aware of our measurement of and our interest in their test ordering practices
- The send out billing process had been greatly improved
- Significant progress had been made on the consolidation of reference labs (now roughly 80)
- Many new tests had been insourced, primarily in Chemistry
- Although we made good progress in controlling send out testing costs, we knew that new strategies would be needed to realize the further progress we believed was possible and essential

We recognized more improvement and greater intervention was necessary.

The Next Phase: A Pilot Program

- In an era of declining reimbursements and fiscal uncertainties, frequent releases of expensive new tests, the need to train hundreds of new residents and staff members each year, and the overall imperative to increase value and reduce waste, we feel that a stronger approach to lab test utilization management is needed
- Our membership in PLUGS and close working relationship with Seattle Children’s inspired us to pursue a path of “tests under management”
- To establish a more robust “tests under management” program, we recognized more support was critical, primarily a Genetic Counselor
- Although we had strong examples of the cost savings and improved effectiveness a GC would provide, we were asked to validate those same savings and efficiencies at CHCO.
- Our 3-month Pilot Program began to take shape…
Implementation of the Pilot Program

- The Department of Pediatrics supported transitioning a current GC to support lab utilization management for the pilot program.
- The Laboratory Diagnostics and Therapeutics Committee (LD&T), now a recognized Medical Board Committee, developed more robust authority for decision making.
- The LD&T identified 6 tests to place under management.
- Process for tests under management to be reviewed and defined.
- CHCO project manager assigned to assist with real time data management tools: database developed to track UM interventions (cancel, modify, send) and cost savings associated with each intervention

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Process Defined for Pilot Program:
October – December 2013

Pilot Tests:
- Comprehensive Epilepsy Panel
- Infantile Epilepsy Panel
- Childhood-onset Epilepsy Panel
- Noonan Spectrum Disorders Panel – Lab A
- Noonan Spectrum Disorders Panel – Lab B
- NF1/SPRED1 Combo Comprehensive
- Fragile X DNA (FMR-1)

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Measurable Outcomes

Utilization Management Dashboard

- **Financials**
  - As Ordered Cost/Test: $3.397
  - UM Cost/Test: $3.279
  - Cost Savings/Test: $118
  - Tests Managed: 118
  - Total Savings to Date: $13,931

- **Ordering Department**
  - Neurology: Approve 27, Cancel/Mod 7, Total 34
  - Genetics: Approve 28, Cancel/Mod 0, Total 28
  - Child Development: Approve 17, Cancel/Mod 7, Total 24
  - Special Care: Approve 13, Cancel/Mod 1, Total 14
  - Other: Approve 6, Cancel/Mod 6, Total 12
  - (blank): Approve 4, Cancel/Mod 0, Total 4

- **Managed Tests Intervention Rate**
  - 118 Tests
  - 92% Ordered
  - 9% Modified
  - 9% Cancelled

- **Interventions by Department**

- **Interventions by Test**

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What Did We Learn:

- FMR1
  - CMA and FMR1 almost always ordered together
  - CMA detection higher than FMR1
  - Rationale to “sequentialize” the two when ordered together; however not supported by providers due to current recommendations in literature.
- NF1/SPRED 1 Combo
  - Specific indications for the combo test vs NF1 alone
  - Worked with Genetics to develop an algorithm that specifies indications for the use of genetic testing for patients with NF
- Noonan Syndrome Panel
  - Consolidated reference labs from 2 to 1
- Epilepsy Panels
  - Largely managed well in Neurology through department GC

What else did we learn:

- In three months of enhanced utilization management:
  - An algorithm was created by Genetics to influence test order practice;
  - A test was consolidated to only 1 reference lab.
  - Saved approximately $14,000 in send out costs
  - What could we do with more time?
- A Genetic Counselor is a critical component to successful UM intervention processes
  - The GC has the knowledge to perform chart review and often approve testing without physician contact (this is important for us as many providers do not want interruptions in their day)
  - The GC has knowledge of genetic test results and can determine when consolidation of testing laboratories is feasible.
  - The GC can recommend sequential testing options for complex genetic testing.
- A real time dashboard for management of UM was essential.
A Few More Lessons Learned

• The lab needed to develop more defined infrastructure for the UM process.
  • Notification process between send out team and GC to ensure real time review
  • More robust database to manage workflow between send out team and GC
  • DNA hold process needed to be re-designed
• Communication plan for UM implementation organization wide would need to be developed. A few challenges were encountered with physician understanding of UM during pilot.
• Many high cost genetic tests were lab MISCREFs and would need to be built in system to truly move a more robust UM process forward. This is time and labor intensive, and a never-ending challenge as new tests become available.

Where do we go from here?

UM Pilot Program gained organization support for a laboratory GC and enhanced UM program

First 3 months of 2014 were devoted to:
• Identifying what tests to place under management
• Developing and implementing more defined processes within the lab for increased UM test volumes (specimen processing and send outs, DNA Hold)
• Reviewing MISCREF volumes and reference lab usage to define tests to build and labs to consolidate
• Identifying EMR intervention which could improve ordering practice (Vit D)
• Creating a more robust tracking system for UM progress (RedCAP database)
• And more…
**Criteria for Tests Under Management**

- Place all *coded* send out tests costing above $1,000 under management (largely an 80/20 type of approach)
  - As more MISCREFs are coded, those over $1,000 will be placed under management
- Multiple genetic tests ordered on same requisition
- Use of non-preferred reference laboratory
- International test requests

**UM Program Expansion Stats Projected for 2014**

<table>
<thead>
<tr>
<th>UM Goals and Volume</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique/Coded Orders Managed</td>
<td>66</td>
</tr>
<tr>
<td>(Coded &gt; $1,000 threshold)</td>
<td>3.9% of all unique</td>
</tr>
<tr>
<td>Expected Annual UM Review Volume</td>
<td>1231</td>
</tr>
<tr>
<td>Annual Spend Managed</td>
<td>$2,388,592</td>
</tr>
<tr>
<td>Average Cost/Test Reviewed</td>
<td>$1,940</td>
</tr>
<tr>
<td>Expected Annual Cost Savings</td>
<td>$100,000+</td>
</tr>
<tr>
<td></td>
<td>32.0% of total send out spend</td>
</tr>
<tr>
<td></td>
<td>3.0% of all send out volume</td>
</tr>
<tr>
<td></td>
<td>1.3% of total send out spend</td>
</tr>
<tr>
<td></td>
<td>1077.1% of average send out test cost</td>
</tr>
</tbody>
</table>

**MISCREF Volumes and Build Plan 2014**

**MISCREF Build Plan**

- MISCREF volume is 15% of total annual send out volume but accounts for 26.5% of total send out costs.
- Large majority of MISCREF testing costs over $1000
- Over 80 tests were identified to be coded by LIS in 2014 to improve UM process
- These 80 tests account for 55% of all MISCREF volume and 40% of all MISCREF expense
- LIS contract worker employed to support this plan.
Miscellaneous Test Tracking

Excel spreadsheet tracks Ref Lab, Test Name, Test Code (if available), provider, and other relevant information used for Misc. test tracking.

DNA Hold Process Refined for Tiered Testing

- Previous Process – manual DNA extraction
  - Process requires >1 hour tech time including overnight incubation
  - Samples held indefinitely or until depleted
- Current process - automated DNA extraction
  - Significantly less tech time – 20-25 minutes per run
  - Samples stable in frozen storage as directed
- New timelines for hold process developed
  - Hold for pre-authorization: 3-15 day hold
  - Hold for sequentialized testing: 6-12 month hold, managed by GC/UM personnel in collaboration with provider
  - Option to hold indefinitely (case by case basis): managed by GC/UM personnel in collaboration with provider
Reference Lab Consolidation and Review

- The LD&T subcommittee reviewed 2013 send out data and focused on the following:
  - Tests sent to multiple referral labs
  - Testing which is offered at our primary reference lab but being sent to another referral lab
  - Referral labs with minimal tests or volumes being sent
- Opportunities recommended for 2014:
  - Transition microarray testing from Lab B to primary referral Lab A; Urine tox testing from national to local lab
  - Consolidate Collagen testing laboratories being utilized as referral lab (currently 3)
  - Transition Voriconazole testing (and other antifungal drugs) from Lab C to primary referral Lab A
  - Convert all 5 tests sent to Lab D to primary referral Lab A
  - Renegotiate contract pricing with several referral labs with significant volume.

Reference Lab Consolidation and Review Outcome
Total Annual Laboratory Savings: $269,918.00

- Transition of Microarray testing: $152,166 annual savings
  - LD&T supported transition; GC reviewed CMA testing to ensure comparable assays; change socialized with high use providers before implemented
- Transition of Urine Toxicology testing: annual savings $11,640.00
- Voriconazole transitioned to primary testing lab: annual savings for lab $3,482; annual savings exceeded $80,000 within organization
  - Voriconazole and 4 other antifungals transitioned with improved TAT, from 7-10d to 3-5d
  - Improved clinical management with decreased antifungal drug management
  - Cost savings resulted in savings in lab costs and pharmacy expense
- Transition of 5 tests and eliminating referral lab: $1,000 savings and improved efficiency in lab with 1 less referral to send to and no longer perform manual result entry for these tests
- Collagen testing lab consolidation: $2,500/year
  - With provider input and test method review, went from 3 laboratories to 2 laboratories for tests.
- Contract Negotiation: annual savings $99,130.00
Clinical Support in EMR for UM Process

Under Management Order Message and $$$ Indicator

Clinical Decision Support Functionality in EMR

Vitamin D 1,25-DIOH and Celiac HLA Typing

This CPOE order-entry pop-up provides assisted test ordering guidance to ensure the provider orders the most appropriate test for their patient. This is a soft-stop, meaning the provider may still continue with their original order, if desired.
Clinical Decision Support Functionality in EMR
Order Alerts to Providers

Utilization Management Data Tracking Systems
Recognized very quickly the need for real time tracking of data associated with UM.

The following data management tracking tools were created and implemented for the Utilization Management (and are still evolving):

- PHI approved database for UM case tracking (RedCAP)
- Real-time UM savings and case tracking dashboard (Tableau)
- Real-time reference laboratory spend tracking mechanism (Tableau)
- Real-time miscellaneous test tracking mechanism (Excel)
Utilization Management Program

Program Summary: 3/31/2014 - 2/24/2015

- Actual Savings to Date: $133,815
- Tests Managed: 363
- # Modified/Cancelled: 65
- Dollars Managed: $443,414
- Cost / Test Managed: $2,643
- Savings/Test Managed: $349
- $ Cancelled: $161,712
- $ Cancelled with Follow-Up: $0
- $ Added: $18,697

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Utilization Management Program

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Utilization Management Program

Interventions by Month

Utilization Management Program

Reference Lab Expenditures
### Provider Satisfaction Survey

**Total Survey Invitees = 90 / Response Rate = 27.7% (n=25)**

#### Service Line Representation

<table>
<thead>
<tr>
<th>Role</th>
<th>Attending (n=12)</th>
<th>&gt; 10 interactions</th>
<th>6-10 interactions</th>
<th>1-5 interactions</th>
<th>I do not know</th>
<th>Fellow (n=3)</th>
<th>&gt; 10 interactions</th>
<th>1-5 interactions</th>
<th>I do not know</th>
<th>Genetic Counselor (n=10)</th>
<th>&gt; 10 interactions</th>
<th>6-10 interactions</th>
<th>1-5 interactions</th>
<th>Never</th>
<th>Grand Total (n=25)</th>
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<tbody>
<tr>
<td>Critical Care</td>
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<td>Fellow</td>
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</tbody>
</table>

#### UM Provider Satisfaction Survey Results

- **Overall Satisfaction**
- **UM Process isClear and Concise**
- **Knowing Test Costs**
- **Insurance Pre-Audit Useful**
- **Pre-Audit added little value**
- **Stabilization Useful**
- **UM Program Supports the...**

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UM Provider Satisfaction Survey Feedback

87.5% of respondents indicated that they are more comfortable asking the laboratory for guidance with test ordering practices.

- “Hire more resources to manage UM program, including another Genetic Counselor within the laboratory.”
- “This has really ensured I order the correct testing.”
- “I really enjoy the interactions I’ve had with the laboratory!”
- “Developing a plan for Whole Exome Sequencing should be a priority!”
- “Need real-time data about Stabilized Samples.”

Challenges Encountered in 2014…

- The top challenge we have encountered is resource and time constraints to devote the not only maintaining our successes to date but identifying and implementing new opportunities.
- From 2011-2014, the UM program has been supported by existing resources.
  - This worked initially due to “low hanging fruit” opportunities
  - Some capacity in current roles and responsibilities
  - GC position to assume responsibility for several processes
- As “low hanging fruit” goes away and the organization grows, staff is challenged with conflicting priorities.
- With no dedicated UM resources, the lab team is struggling to prioritize utilization management and devote the time required to continue its success.
- GC position vacated in August 2014 and no replacement has been hired despite ongoing recruiting efforts.
Where we ended in 2014...

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Send Out Costs</th>
<th>Change from Prior Year ($)</th>
<th>Change from Prior Year (%)</th>
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<tbody>
<tr>
<td>2012</td>
<td>$7,711,880</td>
<td>$194,499</td>
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<td>2013</td>
<td>$8,086,202</td>
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<td>2014</td>
<td>$7,438,764</td>
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</table>

Our Eight Year Send Out $$$ Journey

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Where we ended in 2014…

Stated another way, 2014 Total Send Out test costs were lower than for ANY year since 2009!

Lessons Learned from Our Experience

- Establish a committee with decision making authority and oversight of UM process; strongly advise Medical Board approval to garner broad support
- Develop real-time data tracking tools to allow access to UM data:
  - UM tests volumes and interventions: by provider type, by test, money saved
  - Tracking and trending of tests and their referral lab; MISCREF tracking and trending by order and lab.
- Justify a Genetic Counselor role in the laboratory; we were very successful with a pilot program
- Successful UM programs also have value for the payor community, and may provide leverage for negotiating more favorable managed Lab care contracts
Lessons Learned from Our Experience

- Identify resources for UM and clearly define job responsibilities for UM; ensure protected time
  - This includes day to day test management and data review
  - Send out support and oversight
  - LIS/CAS resource support for test development and potential data tracking
- Borrow other great UM ideas from colleagues, and collaborate

Acknowledgments

Lab Diagnostics and Therapeutics Committee Co-Chairs:
- Mark A. Lovell, M.D, Pathologist, Lab Medical Director
- Ralph Quinones, M.D/D.O., Bone Marrow Transplant

Consultants, Dept. of Pediatrics:
- Margarita Saenz, MD
- Melissa Gibbons, CGC

Lab Support and Process Improvement:
- Tony Smith
- Bill Schwent

Lab Send-Out staff:
- Valerie Williams
- Nadine Minott
- Chalicha Whitmill
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