LABORATORY TEST SELECTION

A NEW PARADIGM

ILTSO

- Improving Laboratory Test Selection and Ordering
- A research effort to enable laboratory professionals to guide clinicians in test selection and ultimately reduce diagnostic and medical error
- Technical and administrative limitations will need to be overcome to provide the next generation of decision support and solutions to improve diagnostic safety

CLIHC™

- Key Projects
  - Clinician Test Selection & Result Interpretation
  - Diagnostic Algorithms
  - Nomenclature Project
  - Survey of Clinicians' Challenges
  - Medical Errors related to Laboratory Tests
  - Medical School curriculum content pertinent to laboratory services
    https://www.cdc.gov/ophss/csels/dls/clihc.html

- Enlisting expert input to gain insight into challenges of test selection and ordering
- Ordering the right laboratory test is critical to accurate diagnosis and patient care
- Errors in test selection and ordering and appropriate follow up can lead to diagnostic errors and patient harm

CLIHC™

- In 2012 DLS surveyed 1,700 family and internal medicine care physicians
- Respondents reported ordering laboratory tests on 30-40% of all patient encounters each week and out of the average 80 patient visits per week, they were uncertain which laboratory test to order in 14% of these encounters

WORKING DEFINITIONS

- **Challenges**: The cause for ordering incorrect or unnecessary tests or the failure to order necessary tests
- **Practices**: Currently used approaches to address the challenges, both effective and ineffective
- **Strategies**: Potential approaches to addressing the challenges, both effective and ineffective
- **Test selection**: Identifying appropriate laboratory tests based on clinical presentation of patient
- **Test ordering**: Mechanical process of choosing laboratory tests

DO YOU:

- Select the tests that are included in your lab's test menu
- Determine how the test menu is displayed
- Assist clinicians in appropriate test selection
- Assist clinicians with test order entry
- Enter test orders
- Develop clinical decision support tools to assist clinicians with test selection
- Implement clinical decision support tools to assist clinicians with test selection

PROCESS?

- How are laboratory tests ordered at your institution?
  - Electronic ordering system
  - Paper-based requisitions
  - Combination of the two
- Who enters the information needed to place an order?
  - Clinician, nurse, physician assistants/nurse practitioner, medical assistant, clerks,

HOW OFTEN DO YOU:

- Provide input in test menu development
- Modify the test menu yourself
- Provide input in the selection of the laboratory information system (LIS)
- Provide input in the integration of the LIS into the electronic health record (EHR)

IDENTIFYING CHALLENGES

- Overly time-consuming process from selection of appropriate test to placing a test order
- Lack of assistance to help clinicians with appropriate test selection
- Structure of test menu
- Order of tests on the test menu
- Confusing test names
- Lack of communication between clinician and laboratory
- Lack of interoperability between LIS and other IT systems

HOW WOULD YOU RATE:

- The process for making modifications to test menu
- The current test ordering system as an aid in **efficient** test ordering
- The current test ordering systems as an aid in **appropriate** test ordering

POINTS MADE BY EXPERT PANELISTS

- Laboratory/Pathologist provides hands-on assistance to clinicians in selecting the right test
  - Helping physicians with primary ordering of tests is not very common
  - Residents often take clinical pathology calls when something is brought to their attention (usually initiated by the techs)
  - Review of all orders can turn up problems with microbiology test and HLA, this can be sent back to the clinician for feedback. But clinicians are not receptive to this in all institutions

POINTS MADE BY EXPERT PANELISTS

- Use of electronic tools (including Clinical Decision Support [CDS]) to select the right test
  - Passive CDS is a notification box that provides information about the test – includes anything needed to order the test
  - Limit the amount of alerts, clinicians hate alerts and ignore them; use only when there is a hard stop
  - It is ok that the laboratory sees a different test name than the physician, as long as there is a mapping connection (some dissent on this point)

POINTS MADE BY EXPERT PANELISTS

- Infrastructure issues that get in the way of inappropriate ordering
  - Our clinicians free hand in the genetic orders. It is sent out and a pdf comes back that has to be entered in the system. There is no way to track or limit that process
    - They don't think about or know of the need for a genetic counselor to help with ordering the right test
  - Letting the laboratory initiate the reflex test also helps with unnecessary testing

POINTS MADE BY EXPERT PANELISTS

- Governance/Test utilization boards are used to determine the right test
  - We have a governance approach for utilization, but the laboratory is not at the table
  - We spent time training our customer service staff to understand the formulary and the esoteric tests so they could provide consultation on a test's use
  - Our utilization committee's focus is on economics, little is being done to determine if the testing is driving the right form of care from a safety perspective

POINTS MADE BY EXPERT PANELISTS

- More data is needed to support good ordering practices
  - Starting to collect the data to prove the value of certain tests
    - Keep records when a test is ordered over our objection and document the thought process that went into the decision
  - Don't have the data to determine the cost benefit of a test or the value that an expensive test may have over a lesser expensive test

GOVERNANCE/UTILIZATION

- Establishing what to review, i.e., overutilization, underutilization, costs a lot of time and effort
- You also have to know how the test will be used, i.e. diagnostically or for monitoring, to know what is appropriate

DATA NEEDS

- Underutilization in molecular testing
  - Not following guideline-based appropriate testing
- Need infrastructure to make daily data capture easy and "actionable"
  - Based on the thousands and thousands of orders received on a daily basis, you have to hone in on the needle in the haystack using a magnet

POINTS MADE BY EXPERT PANELISTS

- Cost may drive practice of ordering
- Number one cause of personal bankruptcy is medical bills
  - https://www.cnbc.com/id/100840148
  - http://fortune.com/video/2016/11/02/leading-cause-personal-bankruptcy/
- Some laboratories display the cost of the test on the order screen

- Easy Wins - Catalyst for change
- List/guidance for tests that should not be ordered
- Clinical/lab/EMR vendors should be convened to improve EMR (use Google, etc.)
- List/guidance for tests on outpatients that should be ordered
- Your thoughts?

COST

- Use of well-designed, evidence-based, diagnostic algorithms can save money
  - Connecting the cost to the diagnostic algorithm and quality of care will help
- Cost analyses that connect laboratory interventions so that patients get the right test at the right time with dollar savings needed
  - DCLS demonstrated this during her clinical year
  - Model after calculations made to show the worth of PharmDs

RESULTS

- Presented at Diagnostic Management Team Conference
- Initial findings show most institutions do not seek laboratory professional's assistance in selecting the right test.
- In most facilities the test utilization committees lack laboratory expertise to help determine which test to order
  - Laboratories lack staff dedicated to providing data to support selection of which tests are appropriate

POINTS MADE BY EXPERT PANELISTS

- Lack of standardization
- We all reinvent the wheel at each of our institutions
  - Data models in same IT system vary from institution to institution
  - Test names on the orders are completely different
    - A challenge for physicians who go from healthcare system to healthcare system
    - Held workshops to standardize test order names, spent 2 days on CMPs, 2 days on CBC

RESULTS

- Clinical decision support tools are available
  - Must deal with alert fatigue.
- Barriers:
  - Computerized physician ordering not always helpful in selecting the appropriate test from the test menu
  - Translating orders from free-hand
  - Lack of knowledge of which tests to order

CENTRAL THEMES

- Improving test selection essential to preventing medical and diagnostic errors
- Harmonization of Semantic Interoperability
  - Standardization of test names could allow easier exchange of test selection and ordering among laboratories
  - Would make data sharing more efficient

CENTRAL THEMES

- Governance/Utilization Committees' composition must include laboratorians
  - The laboratory is often not at the table for utilization committees or some have 2 committees, one for laboratory and one for physicians
- Compelling data to support solutions needed
  - Laboratories do not have the data to support which test should be ordered. Most do not have the resources needed to compile the data

NEXT SET OF EXPERTS

- CIOs and IT vendors
- Health system administrators
- Third party payors
- Physicians/Physician Assistants/Nurse Practitioners
- Your thoughts?