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# Examples of Clinical Laboratory Utilization Committees

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## Mayo Clinic, Rochester, Minnesota

“Since 2004, physicians at Mayo Clinic (Rochester, Minnesota) in the Department of Laboratory Medicine and Pathology (DLMP) have addressed clinical practice issues with the departmental Clinical Practice Committee (CPC), which meets twice a month...The primary goal is not to reduce cost, but implement the highest quality, most cost-effective strategies of testing patterns in patient care. The charge of the CPC in DLMP is to have general oversight of patient care-related activities in the DLMP, with a focus on setting standards and expectations, including promotion of best clinical practice in a fiscally responsible manner for the purpose of ensuring quality patient care. The CPC in the DLMP strives to do the following:

1. Develop, advance, and sponsor short- and long-range goals for clinical patient care related to DLMP activities, including activities that affect the extramural practice.
2. Promote and facilitate practice optimization opportunities in a fiscally responsible manner, including best practices and utilization parameters and practice guidelines.
3. Provide direction and oversight to the DLMP clinical activities, including but not limited to:
  - a) Test utilization by ordering clinicians
  - b) Test elimination—review before test elimination
  - c) Test implementation—notation only (not approval)
  - d) Test validation studies (clinical)
4. Work in conjunction with the DLMP Executive Committee to approve clinical programs and to support operational planning of divisions and laboratories.
5. Serve as a forum for general practice discussions, related to both internal practice and the extramural reference laboratory clinical activities.
6. Communicate with other CPCs within the group practice.

“Decision-making processes are driven by literature-supported evidence-based medicine. For example, algorithms are commonly suggested as a way to communicate recommendations for optimizing patterns of test ordering. In addition, CPC members frequently review the laboratory medicine and pathology aspects of proposed practice guidelines for the Institute for Clinical Systems Improvement.

“CPC members include pathologists, medical and laboratory directors, several division chairs, senior medical technologists, and a cardiologist with an expertise in cardiovascular laboratory medicine.”

(Excerpted from Hernandez JS, Plapp FV, Essmyer CE, Forsman RW. Successful models for Shaping test utilization patterns in academic and community hospital settings. *Clin Leadersh Manag Rev.* 2009;23(1):E5.)

## Massachusetts General Hospital, Boston

At Massachusetts General Hospital (MGH) the clinical laboratory directors oversee the laboratory utilization management activities. This is accomplished by a combination of a Clinical Laboratory Advisory Committee (CLAC) and more recently by establishing multiple focused ad-hoc committees to evaluate utilization management initiatives. The CLAC was established as a subcommittee of the Medical Policy Committee for the purpose of managing initiatives. Owing to the rapidly evolving health care landscape the MGH has relied more heavily in recent years on ad-hoc committees led by clinical pathologists to rapidly address utilization management opportunities at a faster pace than could be managed by a monthly standing committee. (Updated information-October 2013, submitted by Dr. Kent Lewandrowski)

- Organizational Utilization Management Program – the Clinical Laboratory Advisory Committee (CLAC). Established as a subcommittee of the Medical Policy Committee for the purpose of reviewing and approving laboratory-related issues, including utilization initiatives.
- Program has saved millions of dollars in blood components and reduced inpatient tests per discharge by 26%. Highlights from the 10-year experience (in the report) include:
  - o Importance of implementing an institutional organization structure (rather than departmental);
  - o Central role fulfilled by clinical pathologists as leaders of the program;
  - o Ability to obtain timely utilization data and careful selection of the most appropriate implementation tools tailored to the unique circumstances of each utilization management initiative;
  - o Robust information systems for surveillance of test ordering patterns is essential; and
  - o Variety of tools for a variety of utilization initiatives (the report addresses costs of sending testing to outside reference laboratories, so-called daily labs and specialized tests).
- Membership of the CLAC includes representatives from pathology who chair the committee and a cross-section of physicians from different specialties. Departmental or interdepartmental teams then carry out the implementation, as appropriate. Frequently, hospital information systems personnel are involved in implementation of changes that require the CPOE system.
- “The availability of many new genetic tests has had a significant impact on our reference laboratory budget. We meet regularly with the pediatric genetics group and discuss genetic send-out testing. During these meetings, we share genetic send-out test ordering data at the individual provider level and assist the group in developing practice standards for ordering expensive genetic tests. The result of this effort has been a sustained (six months of data) annualized 20% reduction in pediatric genetics reference laboratory expenses, in contrast

with the 15% to 20% per year increase seen before our collaboration with pediatric genetics....”

- The organizational chart supporting utilization management at the MGH is an example of the broad interdepartmental-based infrastructure that we recommend to drive the monitoring, review, and approval processes for a utilization management program, as this structure provides durability and legitimacy to the process. A standing committee of clinicians and clinical pathologists (such as our CLAC) provides a forum to screen and evaluate specific initiatives. Such a committee can also approve small utilization initiatives that do not merit the attention of senior hospital management. For example, in our experience, having an organizational structure for evaluating utilization management is particularly helpful in managing requests for new tests. We routinely use the CLAC to evaluate the appropriateness and medical necessity for new test requests. A significant number of requests have been declined or significantly modified.
- To be effective, the organizational structure should also include clinical pathologists in committee leadership roles. Clinical pathologists have an intimate knowledge of the use and limitations of laboratory testing and are well positioned within the organization to provide decision support to clinicians when tests are being ordered. As part of their professional duties as laboratory directors, clinical pathologists are ideally suited to monitor test volumes, identify opportunities for utilization management, review budgets for in-house and send-out testing, examine aggregated utilization data, and set priorities for testing services. We have found that most laboratory utilization initiatives in our hospital originate from pathologists. Although many clinicians are interested in appropriate utilization of laboratory services, this activity is not part of their regular duties. For these reasons, clinical pathologists are uniquely positioned to lead institution-wide utilization programs....”
- Thoughtful choice of laboratory utilization initiatives necessitates having the medical expertise or background knowledge of the test, obtaining buy-in from clinicians, and understanding the practical impact of initiatives on laboratory workflow and patient care.

(Excerpted from Kim JY, Dzik WH, Dighe AS, Lewandrowski KB. Utilization management in a large urban academic medical center, a 10-year experience. *Am J Clin Pathol.* 2011;135(1):108–118. doi:10.1309/AJCP4GS7KSBDBACF.)

## Geisinger Medical Center, Danville, Pennsylvania

**“Laboratory Utilization Committee Charter:** Ensure medical appropriateness of reference laboratory testing and recommend system policies regarding use of referenced laboratory tests; provide input to selection and use of reference laboratories; provide education to medical staff on best practices in using reference laboratory tests. Our Goals: Use new tests and molecular biology to improve health; obtain the best evidence and provide utilization advice; ensure appropriate utilization; control costs. The Laboratory Utilization Committee levels used to assess efficacy of testing in patient care:

- 1) Technical quality;
- 2) Accuracy, sensitivity/specificity;
- 3) Diagnostic impact;
- 4) Effect on patient management;
- 5) Effect on patient outcomes;
- 6) Societal cost/benefit analysis...”

Laboratory Utilization Committee (LUC) Membership: chair, pathology; vice president, director clinical pathology, molecular diagnostics, GNE senior director, GNE operations director, operations director, clinical pathology, referred testing, financial liaison, director of laboratory excellence, oncology, pharmacy, neurology, pediatric genetics, GHP, cardiology, GHP test utilization, gastroenterology.

Take-home messages: A system-wide committee has been established to standardize and rationalize the use of expensive send-out tests; service line leaders are asked to support the standardization of laboratory practice that promotes quality care and cost containment.”

(Excerpted from Schuerch C, Snyder T. Laboratory Reference Testing Utilization Committee (LUC) “A Systemwide Committee

Established May 19, 2010.” [PowerPoint Presentation]. December 21, 2010.)

## Lancaster General Hospital, Lancaster, Pennsylvania

**DIAGNOSTICS COMMITTEE CHARTER:** The Diagnostics Committee exists as part of the hospital medical staff. This committee is selected under the guidance of the medical staff, and it is also a policy and procedure recommending body to the medical staff and administration of the hospital on all matters related to the use of diagnostic testing.

**PURPOSE:** Advisory. The committee recommends the adoption and/or assists in the formulation of broad professional policies regarding proper utilization of diagnostics. This committee reviews and makes determinations regarding the safe and effective use of diagnostics in optimizing patient treatment and outcomes.

**EDUCATIONAL:** The committee recommends or assists in the formulation of programs designed to meet the needs of the professional staff (physicians, nurses, and other care providers) for complete knowledge on matters related to diagnostics.

**BACKGROUND:** Approximately 90% of modern day clinical treatment decisions are based on diagnostics. Imaging and laboratory studies generate the vast majority of all data transactions in a hospital. The growing complexity of diagnostic studies and the frequency in which they are ordered makes it essential that an organized and sound program of diagnostic utilization be developed to ensure patients receive quality testing in a safe, effective and efficient manner. Improving educational opportunities to enhance provider knowledge of the latest clinical evidence concerning diagnostic utilization is essential.

**ORGANIZATION:** It is essential for this committee to have direct or indirect oversight of other teams focused on diagnostic services throughout Lancaster General Health. The committee shall consist of at least the following voting members: the chairperson of radiology, the chairperson of pathology, the vice president of operations, the administrative director of laboratory, the administrative director of imaging, physicians, nurses, quality coordinators, risk managers, care manager, and others as appropriate. The size of the committee may vary depending on the scope of services provided by the organization. Members shall be appointed by the committee chairperson with the approval of the president of the medical and dental staff. The department chairpersons of radiology and pathology or their designee will serve as co-chairpersons to this committee. The committee shall meet at regular intervals, no less frequently than four (4) times per year, as described in the medical staff bylaws. Recommendations of the Diagnostics Committee shall be presented to the Medical Executive Committee for adoption or recommendation. Minutes of the committee meetings shall be prepared and maintained in the permanent records of the organization.

**FUNCTIONS AND SCOPE:** To serve in an advisory capacity to the hospital and medical staff, in all matters pertaining to the use of diagnostics in relation to the diseases treated at LG Health. To establish a framework for the selection of diagnostic testing based on criteria, which encompasses the clinical evidence supporting the particular test, the risks associated (ie, radiation exposure, sentinel events), value-based practice and financial impact. To approve and recommend adoption of appropriateness criteria, guidelines, protocols, and algorithms to improve standardization and minimize variation of diagnostics used for specified patients and physicians. Seek opportunities to bundle tests with therapies and episodes to ensure optimal testing.

To prevent unnecessary and costly duplication of diagnostic testing. To make recommendations to optimize appropriate ordering, collecting, labeling, testing, and reporting (including timely availability of results) of diagnostic studies. To promote the multidisciplinary correlation of various testing modalities and studies to achieve a consistent diagnostic assessment in which a provider can optimize an effective treatment plan. Foster the development and support of cross-disciplinary services (eg, pharmacogenetics). To evaluate the diagnostics component of the patient's medical records.

To monitor implementation of the written policies and procedures and make recommendations for improvement. Department leaders in consultation with other appropriate health professionals and administration shall be responsible for the development and implementation of procedures. To annually evaluate the entire service provided and make recommendations to the executive committee of the medical staff, administration and the governing body. To make recommendations concerning point-of-care-testing (POCT) availability and utilization throughout LG Health. To plan suitable educational programs for the professional staff or pertinent matters related to diagnostics and their use.

(Source: Charter, Submitted by Lancaster General Hospital.)

## University of Michigan Health System, Ann Arbor

In 2008, the University of Michigan Health System (UMHS) created a Laboratory Test Utilization Program that included the establishment of a Laboratory Formulary Committee under the imprimatur of the Faculty Group Practice, the Office of Clinical Affairs, the Department of Pathology, and UMHS hospital administration. A critical component of the program is UM-CareLink, an order entry system for inpatients and inpatient-like venues. UM-CareLink allows very basic decision support comment prompts. Through the application of peer-reviewed medical evidence, input by medical content experts, excellent cooperation by medical staff, and close oversight by pathology of the send-out laboratory, this program has led to a robust process of test utilization oversight, excellent communication with clinical services, and significant UMHS activity-adjusted reductions in laboratory expense.

### Laboratory Formulary Committee: Structure and Operation

The Laboratory Formulary Committee, established in July 2008, was modeled after the UMHS Pharmacy and Therapeutics Committee. The committee is chaired by a practicing clinician (internal medicine, rheumatology) who is also a member of the FGP Clinical Practice Committee and an associate chief of clinical affairs. Standing members include three additional internal medicine subspecialists (oncology, infectious diseases, and gastroenterology); one pathologist who is the clinical laboratory director and director of the send-out laboratory; the senior associate hospital director, whose domain of oversight includes pathology; the pathology department director of operations; administrative support staff from pathology; and, since August 2011, a pediatric neurologist. Two health care economics fellows participated as ex officio members between August 2011 and May 2012. The Laboratory Formulary Committee meets monthly. The major order of business typically includes the vetting of current or proposed new laboratory tests. Discussions regarding medical utility and evidence-based practice are led by invited clinical “content experts.” Content experts are prospectively selected and invited by the committee. Every attempt is made to identify individuals who possess extensive topic-specific clinical experience and are institutionally recognized authorities. (Examples include a neurologist who specializes in multiple sclerosis–cerebrospinal fluid oligoclonal bands and myelin basic protein, a gastroenterologist who specializes in inflammatory bowel disease [inflammatory bowel disease serology panel], and an oncologist who specializes in breast cancer [quantitative circulating breast carcinoma cell assay].) Peer-reviewed literature germane to the clinical utility and operating characteristics of each test is distributed in advance of each meeting. The invited clinical expert is asked to provide any additional publications that he or she considers germane to the discussion. Data that pertain to test volume, cost, reimbursement, and utilization patterns are provided by pathology. In many instances, clinical content experts engage in dialogue with UMHS physician colleagues who practice in the area under discussion. After the committee has vetted an individual test, policy changes, including ordering recommendations and restrictions, are communicated by memo to clinical services deemed likely to be affected. In addition, change orders that alter test availability (eg, no longer available, available only to specific services, or available only to outpatients) are forwarded to MCIT UM-CareLink personnel and, where appropriate, to the send-out laboratory.

(Warren JS. Laboratory test utilization program, structure and impact in a large academic medical center. *Am. J. Clin Path.* 2013;139:289–297.)

## Cedars-Sinai Medical Center, Los Angeles, California

### Summary of CS-Medicine/Laboratory Collaboration

Cedars-Sinai Medical Center (CSMC) is a world-renowned, 896-bed quaternary care academic medical center in Los Angeles, California. In 2011, CSMC implemented Cedars-Sinai Medicine (CS-Medicine), a comprehensive, multiyear initiative designed to increase the efficiency, effectiveness, and appropriateness of the delivery of medical care across our health care system in order to increase quality and value to our patients. The main elements of the program include following evidence-based best practices, use of clinical decision support in our electronic order entry and medical record system, transparency and performance feedback to the providers, and redesign of its health care delivery models.

In 2012, leaders in the Department of Pathology and Laboratory Medicine at Cedars-Sinai began weekly meetings with clinical and administrative leaders of the CS-Medicine project. As a part of the overall mandate to increase efficiency of medical care and implement “best practices” across the system, the team began to brainstorm a variety of methods to improve laboratory resource utilization. Using the mandates outlined above, multiple projects were begun simultaneously, which are summarized below.

Based on data analysis, the team quickly recognized that unnecessary ordering of repeated laboratory tests is a poor use of limited laboratory resources, and that such practices exposed patients to risks not only of unnecessary phlebotomy but also to potentially dangerous interventions based on spurious results. In response, the team implemented a “smart stop” alert for more than 270 common laboratory tests in the hospital information system (HIS) used by physicians for ordering all laboratory tests. Physicians ordering such tests more often than specified in the HIS (most commonly one test per day) were confronted with an alert specifying that the test had already been ordered within the defined period, with a link to the result from the previous test displaying in the alert. This simple intervention resulted in the non-submission of these duplicate orders in up to 27% of cases, with a resultant demonstrable decrease in phlebotomies performed per patient. This represents only a start to this program, as future plans include expansion of the “smart stop” to multiple additional tests as well as more definitive prevention of ordering in certain cases.

The laboratory team also recognized that the high costs and inefficiencies associated with send-out testing were hampering efficiencies and increasing costs. As a result, the lab leadership sought and achieved a major consolidation of outside testing, with a resultant annual savings of approximately \$900,000 (over 15% from previous year). In addition, this consolidation simplified laboratory processes, decreased errors, and improved efficiencies.

In most hospitals, the largest line item on the laboratory budget is the cost of blood acquisition, and Cedars-Sinai is no exception. Much data and discussion is available today touting the outcome and financial benefits of patient blood management, and the laboratory/CS-medicine team took rapid, active steps to improve blood transfusion ordering. Representatives from the laboratory and administration together with a group of physicians representing a cross-section of the hospital utilized nationally published, multidisciplinary guidelines to establish laboratory guidelines for most appropriate transfusion of red blood cells, platelets, and plasma. These

guidelines were presented and discussed extensively with the performance improvement committees of every clinical discipline in the hospital, approved, and implemented. Once again, the HIS was used to alert the ordering physician immediately when a transfusion of a patient with laboratory values not meeting guidelines was requested. Physicians were able to select (with checkboxes) or specify (with free text) a reason why the transfusion was indicated despite the laboratory values (the alert also has a hyperlink to published guidelines). Data was gathered for all ordering physicians, and audits were performed on the reasons specified for “out-of-range” transfusions mentioned above. Preliminary data was impressive, with a nearly 20% rate of physicians canceling blood orders when confronted with the alert.

The initial work has shown great results, and CSMC believes that this is the foundation for an everlasting laboratory/CS-medicine collaboration, which helps define an important role for pathologists in the era of accountable care medicine. Now that the initial groundwork has been laid, the team is planning many new initiatives, including “report cards” of ordering practices for both house staff and attending physicians, tighter oversight of high-cost but minimally impactful reference lab send-out testing (especially for inpatients), reduction in highly manual tests with limited benefit such as manual differentials, and further intervention in prevention of unnecessary transfusions of all blood products. In addition, leaders in the CSMC laboratory have already begun an extensive educational program for providers throughout the hospital, helping solidify the message that this process is about improving the quality of care provided to our patients, and that cost-cutting is not the primary objective.

(Source: Mahul B. Amin, MD, FCAP, professor and chairman, Department of Pathology and Laboratory Medicine, Cedars Sinai Medical Center.)

## Cleveland Clinic, Ohio

Unnecessary testing presents patient satisfaction and safety issues. The more tests performed, the greater the potential for error (i.e., there is a false-positive rate associated with any test that has a specificity less than 100%). From a patient satisfaction standpoint, it stands to reason that fewer phlebotomies would be associated with greater satisfaction. From a patient safety standpoint, excessive phlebotomies may cause iatrogenic anemia, which is associated with poor wound healing and increased infection rates. Finally, overutilization of laboratory testing also creates unnecessary financial burdens for hospitals, patients and third-party payers in this ever-tightening era of healthcare reform.

Addressing this issue at Cleveland Clinic, a physician-led group practice, was a substantial challenge, given the sheer size of this tertiary care medical center, the volume of laboratory testing and the complexity of our patient population. Our success was made possible through an open and transparent process, the support of leadership, the multidisciplinary participation of individuals from throughout the organization, our willingness to learn and change, and the inclusion of high-level partners from Information Technology (IT). The Test Utilization Committee at Cleveland Clinic is a multidisciplinary taskforce whose members are interested in defining best practices associated with laboratory testing. This group truly adheres to Cleveland Clinic's "Patients First" principle. We would never compromise the quality of care for cost savings. If an expensive test is needed to secure a diagnosis or guide therapy, then we support the use of such tests. However, we recognize there is substantial waste in the system and that better utilization of these resources could also contribute to enhanced patient care by bettering the system as a whole.

To enhance membership, diversity and expertise, we submitted invitations for participation to all Institute and Department Chairs in our institution. It is a committee open to anyone interested in defining best practices, optimizing test utilization and performing cost-effective medicine. We also partnered with high-level information technology officers to aid in the electronic implementation of our endeavors, largely through the computerized physician order entry system (CPOE). Both our Institute Chair and the Chief of Medical Operations, who in turn received support from the Chief of Staff and CEO, approved the entire process.

Five clinical decision support initiatives have been sequentially deployed at the Cleveland Clinic since 2011. Four of these interventions utilize electronic clinical decision support tools that interact with the ordering physician at the point of order entry, whereas the fifth utilizes the skills of a laboratory-based genetics counselor and molecular pathologist. These initiatives eliminate unnecessary testing, such as duplicate orders; limits molecular genetic tests to the appropriate providers; informs clinicians about the cost of very expensive tests; and, informs and guides the ordering physician to the most appropriate test. In one year (2013), these interventions eliminated 11,470 unnecessary tests for a cost savings of \$753,667. Since this program began in 2011, 24,385 unnecessary tests have been averted for a cost-savings of \$1,965,279.

The Test Utilization Committee has raised the bar in asking for a quality assessment, "is this test really needed?" Multidisciplinary collaborations, institutional support, good project management and reporting, and great informational technology support led to results that no one group could have achieved alone. Most importantly, we believe we have improved the patient experience, decreased unnecessary phlebotomy for the commonly used tests, improved the use of molecular genetic tests and decreased healthcare costs. Importantly, our initiatives never interrupted patient care. While we wanted to ensure there was considerable thought before a test was ordered, we have always provided an avenue for ordering if the physician really believed he or she needed a test. The entire process has been an enjoyable lesson in team building and enhancing practice within the system.

## Keys to Our Success

- A multidisciplinary group of individuals representing many areas of the organization
- An open, transparent and collaborative process.
- Team members focused on optimal patient care, improving the patient experience, decreasing phlebotomy and reducing costs
- Participants are more interested in improving patient care than reducing costs
- Collaborative meetings with mutual respect, acceptance, and healthy and collegial debate and innovation.
- Rational, evidence-based initiatives
- Good project management with regular results reporting with shared success.
- Leadership support
- Top-down support with bottom-up team building
- Inclusion of high-level partners from Information Technology
- The ability of IT to rapidly respond to change requests
- “Pre-selling” initiatives with the opportunity for feedback
- Anyone affected by a decision should be involved in the decision
- A willingness to learn and change
- Recognizing you do not have to win every battle to win the war

Pathologists and laboratorians are in a unique position, as individuals with oversight of many of these tests, to take a leadership role in test utilization and function at the systems level in their institution.

(Excerpted with permission from Gary W. Procop, MD, FCAP, “Strategies for Appropriate Test Utilization: The Right Test for the Right Patient and at the Right Time.” Updated, 2014)