Chelonian Conservation And Biology

Vol. 17No.2 (2022) | https://www.acgpublishing.com/ | ISSN - 1071-8443

DOI:doi.org/10.18011/2022.04(1) 1846-1851

THE EFFECTIVENESS OF LABORATORY STEWARDSHIP PROGRAMS IN OPTIMIZING TEST UTILIZATION AND REDUCING UNNECESSARY TESTING

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Abstract

The proper use of clinical laboratory services is crucial for patient care and necessitates institutional governance. Clinical laboratory stewardship initiatives aim to enhance the process of requesting, obtaining, and understanding suitable laboratory testing. Furthermore, these initiatives prioritize the development, upkeep, and enhancement of systems that provide adequate financial coverage for essential medical tests. Clinical laboratory stewardship initiatives have a positive impact on patient care quality and cost reduction for patients, hospitals, and health systems. This publication, authored by a newly formed multiinstitutional group focused on encouraging and formalizing laboratory stewardship, outlines the essential components of effective hospital-based clinical laboratory stewardship initiatives. The fundamental components will also be beneficial for autonomous commercial clinical labs.

Keywords: laboratory stewardship programs, clinical laboratory, testing, commercial clinical labs.

1. Introduction

The domains of pathology and laboratory medicine have revolutionized the medical profession by offering diagnostic, therapeutic, monitoring, and preventive tests and services for many diseases. Furthermore, they have played a crucial role in advancing all areas of medicine. Lab testing is the most frequently conducted medical activity, with over 13 billion tests carried out annually (1). Furthermore, about 70% of subsequent medical choices rely on the findings of pathology and laboratory medicine (2).

The three primary factors contributing to patient harm in relation to laboratory services are incorrect test ordering, failure to retrieve a test, and misinterpretation of test results (3). Several

studies and an analysis of insurance claims indicate that between 10% and 30% of laboratory tests conducted in the United States are deemed unneeded or inappropriate (4). Approximately 30% of genetic test orders are deemed inappropriate, while around 5% of genetic test requests are classified as clear medical mistakes. Approximately 7% of test findings are either not collected or experience a substantial delay in retrieval (7). Improper use and analysis of laboratory tests may have significant consequences, such as delayed diagnosis, incorrect diagnosis, harm caused by unneeded treatment or extra investigations, wasteful expenses, and other negative outcomes (8).

2. Laboratory test usage management

Historically, these endeavors have been known as utilization management (UM) inside healthcare organizations and insurance companies. A more appropriate and more respected phrase is stewardship, which denotes the meticulous and accountable administration of anything that has been entrusted to one's care, as defined by Merriam-Webster. Stewardship emphasizes the importance of the value of a healthcare service, which is determined by the quality of the service in relation to its cost. Stewardship techniques consider the worth of both the individual patient and the broader population. The term stewardship is preferred over utilization management since it does not have the negative implications of just focusing on cost reduction without taking into account quality. The cost reduction measures used by UM have often been criticized for their lack of consideration, such as their indiscriminate application instead of being targeted and supported by evidence. These measures have even been seen as harsh by both patients and healthcare professionals. For our purposes, we employ the words laboratory test usage management (UM) and clinical laboratory stewardship interchangeably, recognizing that stewardship is likely to become more often used.

Stewardship programs have two basic objectives: (a) improving the process of requesting, obtaining, and understanding relevant laboratory tests, and (b) establishing and enhancing procedures to provide enough financial support for medically essential testing. Increasing evidence indicates that stewardship programs may enhance the efficiency of diagnosing, treating, and monitoring diseases while minimizing the occurrence of negative outcomes resulting from mistakes in test ordering, retrieval, and interpretation. Simultaneously, stewardship programs have the capacity to safeguard patients from experiencing financial detriment. In general, stewardship programs assist doctors in enhancing the quality of patient care while simultaneously decreasing costs for patients, hospitals, and health systems.

The intricate nature of medical decision-making about the use of laboratory services, coupled with the diversity in the scale and kind of healthcare provided by different institutions in the United States, necessitates the need for adaptability in implementation. Nevertheless, empirical evidence indicates that stewardship programs may be efficiently executed in a diverse range of institutions, with their effectiveness contingent upon clear leadership and a well-coordinated interdisciplinary approach. The National Committee for Laboratory Stewardship advises

integrated health systems and independent hospitals to establish laboratory stewardship programs to enhance laboratory use. The committee was appointed by the nationwide cooperation PLUGS® and has 10 members from 7 academic institutions.

The committee comprises laboratory medical directors, clinical chemists, and medical technologists serving in a consultative capacity. This group promotes and advocates for responsible management efforts in commercial clinical labs. It also urges commercial laboratories to coordinate with the stewardship programs of integrated health systems and independent hospitals. This article provides a concise overview of the essential components of effective hospital-based laboratory stewardship programs. It supplements the current criteria provided by groups such as the Clinical Laboratory Standards Institute, Choosing Wisely, and others. Independent commercial clinical laboratories will also find the fundamental aspects beneficial. There is no standardized format for a program designed to enhance the efficiency of laboratory testing.

3. Essential Elements of Laboratory Stewardship Programs and Foundation for Utilization Management Checklists

A hospital's overall use review strategy includes an institution's laboratory stewardship program as a crucial component. This plan is a requirement set by the Centers for Medicare and Medicaid Services for participation in Medicare and Medicaid programs. It also helps to comply with utilization review requirements set by The Joint Commission and other accrediting bodies.

Laboratory stewardship programs consist of four fundamental aspects, which are designed based on the structure of antibiotic stewardship programs (10): The four key components are: (a) governance, (b) interventions, (c) data extraction and monitoring, and (d) assessment of data combined with plans and tactics for improvement.

4. Administration

The components of governance include: (a) a strong dedication to leadership; (b) being answerable to a medical executive at a high level; (c) the establishment of committees and subcommittees; (d) possessing competence in laboratory matters and other essential forms of assistance; and (e) engaging in networking activities.

5. Devotion to leadership

Leadership commitment entails ensuring that laboratory stewardship initiatives are adequately supported with the essential human, financial, and information technology resources needed for success. The magnitude and effectiveness of the laboratory stewardship program will be influenced by the level of dedication shown by the leadership. Stewardship initiatives often provide substantial returns on investment by improving insurance reimbursement and reducing costs associated with unneeded and uncompensated laboratory testing. Laboratory stewardship

programs often provide immediate benefits for patient safety measures and those aimed at enhancing the patient experience.

Proficiency in laboratory techniques and further essential assistance. An effective approach to laboratory engagement begins by designating laboratory leaders who are accountable for enhancing the optimal usage of tests. It is crucial for a pathologist of high rank or another laboratory leader with a doctoral-level degree to actively and visibly engage in the laboratory stewardship committee. Furthermore, laboratory directors have the ability to take charge or take part in subcommittees and subspecialty teams that align with their specific areas of knowledge and skills. Obtaining formal education in pathology and laboratory medicine is advantageous for the directors of the laboratory stewardship program. Pathologists and other laboratorians with doctoral-level education are well-suited to spearhead initiatives aimed at improving laboratory use. Their extensive training in laboratory procedures and deep understanding of the clinical significance of tests make them great candidates for this role. These initiatives align well with the overall accreditation criteria and current laboratory quality improvement needs.

6. Strategies to enhance the efficiency and effectiveness of laboratory use

Stewardship treatments are categorized under three levels of strength: mild, medium, or vigorous. The efficacy of the intervention refers to its overall effectiveness in successfully halting an undesired habit. Implementing more robust therapies tends to be more challenging.

Mild interventions are often instructional and do not need systematic alterations or abrupt halts. Medium-strength treatments include implementing systematic changes while yet allowing for flexibility and adaptability. An example of a moderately impactful intervention might be eliminating tests from the requisition or concealing testing via computerized provider order entry (CPOE), but still permitting the ordering of the same test if explicitly requested. Ultimately, robust treatments use many methods to generate definitive halts. It is important to highlight that these interventions are not mutually exclusive. By applying more than one intervention, it is possible to tailor them to each institution and scenario, which ultimately enhances their effectiveness in influencing behavior (11, 12).

7. Mild interventions

Gentle interventions include both passive measures, such as the dissemination of recommendations or the imposition of fees for exams, as well as active educational initiatives, such as focused presentations and communications. In order to maintain the effects of an educational intervention, it is nearly always necessary to engage in repeated educational endeavors. Laboratory stewardship programs should regularly communicate information on laboratory diagnostic capabilities, the proper use of developing diagnostic tests, tests that are becoming outdated, testing algorithms, and evidence-based testing techniques.

Disseminating facility-specific data on laboratory consumption may serve as a means to encourage the adoption of better testing strategies, especially in cases where there are significant differences in the patterns of usage across comparable patient care sites. Various methods may be used to educate individuals about laboratory use, including official and informal lectures, as well as the use of posters, brochures, newsletters, and internet communication to reach staff members. Another beneficial method is to examine de-identified instances with healthcare professionals, when modifications to laboratory testing might have been implemented. Various online educational tools may assist institutions in creating instructional material. Education is most successful when combined with appropriate interventions and the assessment of results.

8. Conclusion

Effective management of laboratory resources enhances patient care by ensuring that the right tests are conducted at the right time. Superfluous and redundant examinations not only incur significant expenses but also, more significantly, pose a risk of injury, so compromising quality and patient safety. The justification for evidence-based, patient-centered initiatives to enhance test usage extends beyond cost-effectiveness, since they also enhance patient safety and satisfaction. Organizations that initiate and maintain test stewardship initiatives should be acknowledged and rewarded.

The National Committee for Laboratory Stewardship aims to create a hierarchical recognition scheme and issue certificates of recognition based on the level of involvement. We anticipate that by fostering a culture of quality and continuous improvement, there will be several positive outcomes. These may include enhanced Hospital Consumer Assessment of Healthcare Providers and Systems scores, streamlined reimbursement processes with fewer denials, and increased recognition from payers for the active involvement of institutions in laboratory stewardship.

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