Laboratory Stewardship Checklist: Instructions

PLUGS (Patient-centered Laboratory Utilization Guidance Services) and the National Committee for Laboratory Stewardship are working on developing standards for hospital laboratory stewardship programs. We are distributing this checklist to help programs identify areas for improvement, advocate for resources, and gain visibility.

This checklist can be completed by one or several team members familiar with your institution's laboratory stewardship program. Prepare to spend 1-4 man hours completing the below checklist. Because this checklist covers multiple disciplines, we recommend identifying a few key stakeholders to complete together. These stakeholders may include laboratory administrative director, laboratory medical director, laboratory stewardship committee clinicians, or informaticist. You may consider completing together or distributing the checklist among the key stakeholders to make sure different perspectives are captured.

Laboratory Stewardship Checklist: Governance

Leadership Commitment

A successful committee needs support from institutional and medical leadership. Individual leaders can provide this support by participating on the committee, appointing a chair/co-chair, or recommending members. Leadership support will also help determine the composition of the committee and the governance structure (i.e., the department that has ownership of the committee). It is recommended that the committee report back to both institutional and medical leadership on a regular basis to share success, as well as to request assistance for challenges.

1. Does the institution have a dedicated hospital-wide committee geared towards the improvement of laboratory stewardship?
   - ☐ Yes
   - ☐ No

2. Does your facility have a formal, written statement of support from leadership (outside of Pathology/Laboratory Medicine) that encourages laboratory stewardship efforts?
   - ☐ Yes
   - ☐ No
   - ☐ Under consideration.

3. Does your facility receive any financial support from your institution for laboratory stewardship activities (e.g., support for salary, training, or IT support)?
   - ☐ Yes
   - ☐ No
   - ☐ No budget, but ancillary support provided

Expertise and Key Support

When selecting committee leaders, it is important to choose individuals who have a history of respect and collegiality within the institution to better influence department chairs and other leaders. If individuals who are early in their career are chosen to lead, an influential mentor can help them sway high-ranking decision makers. While pathologists, doctoral-level scientists, administrators, and genetic counselors often form the nucleus of the committee, laboratory and clinical subspecialty expert are needed for focused projects. Other members to consider recruiting, either permanently or assembled *ad hoc* as particular projects are formed, include data analysts, nurses, financial analysts, statisticians, quality specialists, and continuous improvement professionals.

4. Is there a clinician leader responsible for program outcomes of stewardship activities at your facility?
   - ☐ Yes
   - ☐ No

5. Is there a laboratory leader responsible for working to improve laboratory utilization at your facility?
    - ☐ Yes
    - ☐ No
    - ☐ Sectional or subspecialty leads are responsible for their respective areas

6. What type of staff is represented on the committee (check all that apply)?
    - ☐ Clinicians
    - ☐ Quality Improvement
    - ☐ Finance/Revenue Cycle
    - ☐ Information Technology (IT)
    - ☐ Nursing
    - ☐ Genetic Counselors
    - ☐ Physician Assistants
    - ☐ Residents/Fellows

Accountability

Accountability should occur at individual and group levels. To promote active engagement, institutions should consider including individual participation in lab stewardship activities during an annual review. In-depth reviews may reveal challenges where leadership can assist and provide opportunities to discuss future projects or expectations.

In addition to individual reviews, the committee should have a way to provide periodic feedback to institutional leadership, and ultimately reporting up to the Utilization Review Committee. This can be achieved through periodic update meetings (particularly within the governance function) or by developing an annual report to summarize progress. The report can also facilitate conversations for further leadership support or additional assistance.

7. Does the chair(s) of the committee have periodic meetings with institutional leadership?
    - ☐ Yes
    - ☐ No
    - ☐ No program established

8. Is an annual report submitted?
    - ☐ Yes
    - ☐ No
    - ☐ No program established

9. Are efforts to improve lab stewardship addressed during individual annual reviews (e.g. ongoing practice performance evaluations)?
    - ☐ Yes
    - ☐ No
    - ☐ N/A

Policies and Procedures

The committee is responsible for creating institutional policies and procedures that support the activities and goals of the stewardship program. These provide visibility to the rest of the organization.

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10. Does your facility have a policy that requires tests that meet defined laboratory stewardship criteria undergo a review and approval process before testing is performed and resulted?
    - ☐ Yes
    - ☐ No
    - ☐ Under consideration/ In development

11. Does your facility have a laboratory formulary, based on national guidelines, to assist with test selection?
    - ☐ Yes
    - ☐ No
    - ☐ Under consideration/ In development

Laboratory Stewardship Checklist: Interventions

There are many potential interventions that may improve Laboratory Stewardship in various healthcare settings. The table (below) highlights 20 interventions classified by ease of implementation and effectiveness. Please note that the ease of implementation and effectiveness may vary from institution to institution based on EMR capability and medical staff acceptance.

	EASY EFFORT	MEDIUM EFFORT	HIGH EFFORT
HIGH IMPACT	☐ Change test names to make it easier to order the right test ☐ Use reflex testing ☐ Display turnaround times in your ordering system on reference tests	☐ Use duplicate alerts providing the previous result and date when a duplicate test is ordered ☐ Use lab algorithms for complex cases (e.g., Celiac dx)	☐ Use duplicate alerts for genetic tests, other once in a lifetime tests ☐ Establish formal governance in your hospital for creating clinical decision support for lab testing ☐ Create a system for periodic review of provider preference lists ☐ Involve the lab in periodic review of order sets ☐ Limit the duration of a recurring order (for standing orders) ☐ Use benchmarking to evaluate providers ☐ Develop a laboratory formulary ☐ Have the laboratory participate in Diagnostic Management Teams ☐ Implement a software application that provides real time feedback regarding stewardship parameters to the ordering provider at the time of order
MEDIUM IMPACT	☐ Establish a method to assess when reference tests should be insourced	☐ Display turnaround times in your ordering system on in-house tests ☐ Allow providers to see test costs or charges at the time of placing a lab test order ☐ Require review of orders based on test costs	☐ Use best practice alerts in conjunction with lab orders ☐ Require additional review or approval for certain tests or specialties
LOW IMPACT	☐ Provide education about lab tests		

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Laboratory Stewardship Checklist: Data and Monitoring

Effective laboratory stewardship requires granular utilization data in order to identify and quantify issues, prioritize efforts, and monitor the effectiveness of interventions. Beyond capture and storage, data must be managed in a way that enables easy analysis, and there must be technical and human resources available for retrieving the data rapidly and in useful formats.

Resources for Accessing Data and Reports

Business intelligence software can be configured to allow stakeholders (e.g., lab managers and pathologists) to directly access utilization reports. Managing and configuring these systems, and creating some types of customized queries, typically requires specialized IT personnel.

12. Does your facility provide online access to routine lab utilization reports?
    - ☐ Yes
    - ☐ No

13. If yes, are you able to easily access the lab utilization reports?
    - ☐ Yes
    - ☐ No

14. Does your laboratory stewardship group have access to at least one dedicated data analyst, or a centralized resource/team, who can provide custom lab utilization data extracts and reports within 1–2 days?
    - ☐ Yes
    - ☐ No

Data Availability

For effective utilization analysis, laboratory ordering data must be captured and stored at a sufficient level of granularity. CPT-level data alone (typically available within billing systems) is inadequate to support many laboratory stewardship needs.

Using the table below, determine which items are:

- available on demand through dedicated laboratory stewardship resources;
- less rapidly available due to limitations/competition for IT resources;
- not available at all for the laboratory stewardship group.

		On Demand (1–2 Days)	Less Rapidly Available	Not Available
Patient Demographics	Unique identifier			
	Date of birth			
	Gender			
	Location at time of order			
	Status at time of order (inpatient, outpatient, etc.)			
	Admission date/time (for inpatient orders)			
	Discharge date/time (for inpatient orders)			
Test Information	Unique identifier of ordered test (not just CPT code)			
	Test result			
	Testing location (in-house vs. sendout)			
	Test cost (if sendout)			
	Test charge (useful if the focus is on reducing cost to patient/insurer)			
	Date/time of order			
	Date/time of specimen collection			
	Date/time of result verification			
	Cost analysis for test, including reagents, labor, overhead			
Ordering Provider Information	Unique identifier (ideally NPI number)			
	Clinical specialty			
	Level of credentials (i.e., attending, fellow, resident (this may help target interventions)			
Associate Clinical Information	ICD codes associated with the test order			
	DRG code associates with the test order (for inpatient orders)			
	Pharmacy orders			

Data Governance

For data to be useful and available, there must be processes to ensure data quality and comparability. Review this section with your institution's informatics representative.

15. Does your institution have documented processes for the following (check all that apply)?
    - ☐ Data dictionary (i.e., what each field means, what system the data comes from, who is responsible for entering the data, and any limitations about using the data

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☐ Prevention/correction of missing and erroneous data

☐ Timeliness of data uploads

☐ I don't know

Overall Assessment of Data Resources

16. Based on your answers, are the data resources sufficient to support the needs of the committee?

☐ Yes

☐ No

Laboratory Stewardship Checklist: Review and Improve

Laboratory stewardship projects represent organized efforts to improve the ordering, retrieval, or interpretation of clinical laboratory tests. Stewardship also includes developing systems to improve payment on behalf of both labs and patients. This financial aspect of stewardship encompasses aims such as transparency, fair payment, fair medical necessity policies, and less burdensome administrative policies and procedures.

The purpose of the review and improve checklist is to evaluate the stewardship system for its sustainability. This includes demonstrating that the system:

1) maintains sufficient resources;

2) identifies and prioritizes stewardship opportunities; and

3) incorporates any form of continuous process improvement that periodically monitors and attempts to improve the whole system.

Identifying and Prioritizing Opportunities

Opportunities can be found in several places within an organization, but there needs to be an established system(s) to determine which opportunities will best meet institutional or departmental needs. Once these opportunities are identified, prioritization (based on factors such as cost, strategic alignment, scalability, etc.) will play an important role in ensuring resources are available and establishing the validity of the stewardship committee. When prioritizing, the probability of success matters. Sometimes an easier project is given high priority in an attempt to build momentum for the stewardship program.

17. What system(s) does your facility use to identify potential laboratory stewardship projects?

- ☐ Frequency data (i.e., test tallies by clinical section or individual care provider)
- ☐ Conformance to a published guideline or scholarly work (e.g., Choosing Wisely™; U.S. Preventive Services Taskforce guidelines)
- ☐ Conformance to a benchmark (e.g., benchmark set by a consensus of experts within an institution or borrowed from a peer institution)
- ☐ Surveys of care providers (e.g., computerized surveys or structured interviews)
- ☐ Surveys of laboratory staff at all levels including pathologists and other doctoral level staff.
- ☐ Incident, occurrence, or patient safety reports (institution's official procedure for reporting errors and other service problems)
- ☐ Cost data
- ☐ Alignment with strategic priorities (e.g., a facility putting in a heart center would focus on stewardship around tests frequently ordered by the heart center)
- ☐ External assessment/consulting engagement/inspection finding (e.g., CAP inspection, other CLIA inspection, AABB inspection, etc.)
- ☐ Analysis of sendout (reference lab) testing
- ☐ Other: _____
- ☐ No established system(s)

18. What factors are used to prioritize stewardship projects (check all that apply)?
- ☐ Impact on patient safety
- ☐ Impact on patient outcomes
- ☐ Provider alignment and support (i.e., project has a champion)
- ☐ Alignment with organizational strategic goals
- ☐ Likelihood of carrying out the project
- ☐ Impact on costs
- ☐ Impact on revenue
- ☐ Size of project
- ☐ Cost of project
- ☐ Scalability (growth or impact associated with little to no cost) or generality (ability to spread general concept in several areas)
- ☐ No prioritization protocols

19. How is priority determined?
- ☐ By an individual leader who has authority to make a decision
- ☐ Consensus
- ☐ Scoring system
- ☐ Other: _____

Resources for Laboratory Stewardship

For the purpose of this section, it is assumed that small stewardship projects that require no additional resources can be handled locally by the laboratory. Large stewardship projects refer to those that require significant resources, such as hospital IT or FTE, and involve significant decisions that affect clinical care. Examples might include developing a Computerized Provider Order Entry (CPOE) template for primary care or other major changes in CPOE; implementing a laboratory genetic counseling program to review all genetic test orders, or changing the testing inside a clinical pathway.

20. Who has authority to approve large stewardship projects (check all that apply)?
    - ☐ Laboratory Stewardship committee
    - ☐ Hospital Utilization review committee or its equivalent (usually situated above the laboratory stewardship committee in the institutional hierarchy; can often have an oversight function and be used for escalation)
    - ☐ Ad hoc committees
    - ☐ Clinical leadership outside the laboratory (refers to leaders in the medical or nursing chain of command who are licensed professionals)
    - ☐ Laboratory leadership
    - ☐ Administrative leadership (refers to professional administrators who do not have a medical degree or are no longer practicing)
    - ☐ Other: _____

21. My facility has adequate resources (FTE, IT, other) for clinical laboratory stewardship?
    - ☐ Strongly disagree
    - ☐ Disagree
    - ☐ Neutral
    - ☐ Agree
    - ☐ Strongly agree

22. What resources are readily available to the stewardship program (check all that apply)?
    These human resource do not have to constitute a dedicated FTE, but the person must be available, within a reasonable amount of time, to participate in a project.

    - ☐ Administrative support
    - ☐ Laboratory Genetic Counselor
    - ☐ Pathologists or other doctoral level staff in the clinical laboratory (e.g., clinical chemist, clinical microbiologist, molecular geneticist, etc.)
    - ☐ Data analyst
    - ☐ Physician champion
    - ☐ Nurse champion
    - ☐ Project Manager
    - ☐ External consultative support
    - ☐ Other: _____

Continuous Performance Improvement Cycle for the Overall Stewardship Program

Reviews can take different forms, such as a dedicated meeting whose focus is describing the accomplishments, challenges, and opportunities of the stewardship program. More detailed reviews involve a variety of data, such as survey results from care providers who interact with the program or the results of specific stewardship projects.

23. Do you have overall program review process, including a description of opportunities and improvements?
    - ☐ Yes
    - ☐ No

24. How frequently is the overall program reviewed?
    - ☐ Annually
    - ☐ Semi-annual
    - ☐ Quarterly
    - ☐ Other: _____

25. Where is the review presented (check all that apply)?
    - ☐ Medical Executive Committee or its equivalent
    - ☐ Laboratory Stewardship Committee meeting
    - ☐ Utilization Review Committee or its equivalent
    - ☐ Other hospital leadership meeting (Describe: _____)
    - ☐ Laboratory Staff Meeting
    - ☐ Other: _____

Disciplined problem solving methods (Lean, Six Sigma, other) employ basic models, tools, and measurements to enable quality improvement efforts. Example models include the DMAIC (Define, Measure, Analyze, Intervene, Control) model of performance improvement used in Six Sigma or the Plan Do Check Act/Adjust (PDCA) approach commonly used in Lean. Tools include process maps and a variety of graphs and tables including run charts such as those showing test tallies or spending over time.

26. Does your facility apply a disciplined problem solving approach to the overall laboratory stewardship effort (e.g. Lean, Six Sigma, other)?
    - ☐ Yes
    - ☐ No

Dashboards or other visual representations list significant performance metrics, such as a test tally over time, for the stewardship program. They can also include a list of projects with key performance indicators and milestones.

27. Does your facility use a dashboard or other visual representation that describes the overall laboratory stewardship effort?
    - ☐ Yes
    - ☐ No