Practical Guide for Public Health Laboratory Leaders

Second Edition

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Introduction

Congratulations on being selected as a new public health laboratory leader. In your new role, you will be expected to lead an organization charged to protect and improve public health against diseases and other hazards. Laboratory leaders are critical in today's health system. Not only do they help their own laboratories run efficiently and excel in innovation, they are skilled in keeping a watchful eye on the future of public health in their jurisdiction and at the national level.

Each day brings new challenges and opportunities for public health laboratories (PHLs), which abide by the regulatory guidelines of local, state and federal agencies. The PHL leader's strict adherence to those guidelines will allow improvement in laboratory efficiency for quality practices. Implementing efficient Quality Management System (QMS) by integrating LEAN and similar tools would be valuable for continuous quality improvement.

While the audience for this document encompasses all laboratory leaders, including directors, section chiefs, deputy directors and other high-level managers, the Practical Guide will be particularly relevant for new laboratory directors. This guide should also prove valuable to health officials to whom laboratory leaders may report and for whom a glimpse of the complex laboratory management environment may be useful.

The Practical Guide can ease transition into your new position, which will ultimately benefit your employees and your employer. This document provides an overview of relevant information, critical knowledge and the skills necessary for providing day-to-day laboratory leadership. Information provided in subsequent pages ranges from understanding the public health infrastructure to how the laboratory relates to the overall public health system.

Also included in the guide is a section titled "The Next 100 Days and Beyond," which briefly addresses the importance of training opportunities, new technologies, continuous quality improvement tools and policy development as part of the challenges that new leaders will likely face in the next 100 days.

Disclaimer: the term "public health laboratory" is inclusive and refers not only to those laboratories in health agencies, but also state, local, agricultural or environmental laboratories.

“Leaders aren’t born, they are made. And they are made just like anything else, through hard work.”

VINCE LOMBARDI

Environmental Scan

Key Points

- **The laboratory functions within the larger government organization**
- **The agency and jurisdiction wide roles and responsibilities of laboratory leaders**
- **The laboratory's authority and relationship with customers and stakeholders**
- **The laboratory's role in internal and external interactions**
- **The legislative process**
- **Laboratory mandates and their impact**
- **The laboratory's role in internal and external policy development**
- **The core functions and the critical role of the laboratory**

Laboratory leaders should understand the internal and external environments to the health department that present challenges and opportunities. To laboratory staff, the director is not just a manager but a leader who is an advocate and spokesperson. To health officials and policymakers, the laboratory leader is part of the administration or the organization's management team and, always, a representative of the science and technology that they may not understand, but have come to rely upon for much of their decision-making.

Organizational Structure

"When you've seen one public health laboratory; you've seen one public health laboratory."

Laboratory leaders should first assess and ascertain the laboratory's placement within the parent organization. This dictates how much autonomy the laboratory has, how it should function internally and externally, and how much real and perceived authority the laboratory director maintains. This is true even when the public health laboratory is part of an agency other than the health department, or part of a university system. To see placement, examine where the laboratory sits within the parent agency's organizational chart.

THE CHAIN-OF-COMMAND WITHIN THE PARENT AGENCY: KEY QUESTIONS

- What kinds of decisions can I make without prior approval from supervisors?
- What processes are available for discussing pending decisions that may have an impact beyond the laboratory?
- What information do I need from other parts of the agency, and are there processes in place to acquire that information?
- Can I go directly to a program manager or unit manager/director to discuss issues of mutual concern and interest?

There is no one organization model for a public health laboratory. On a general level, the laboratory may be either part of a state or local agency and/or associated with an academic institution. Even in the most common situation, where the laboratory is part of a state or local agency, there is no standard location for the laboratory within the departmental structure. The laboratory director may be one of the health director's cabinet-level advisors, the laboratory may comprise a technical division of the department or the laboratory may be part of the agency's business or support services office. The laboratory's location within the state administration should not be questioned in the short term, but can be part of the long term organizational evaluation.

The laboratory leader needs to understand the boundaries of their authority within their agency, realizing it may not be accurately reflected in an organizational chart. At the same time, they should not confuse their legislatively-conferred responsibilities — as enumerated in federal and possibly some state laws and regulations — with the authority delegated to them by their agency. There is an important distinction between the two. If the laboratory director finds that delegated authority does not allow him/her to meet his/her legal responsibilities under prevailing laws, he/she should take immediate action to remedy this situation. Finally, the director should be aware that the public health laboratory plays a unique role within the state government as it serves many health department programs, and possibly other state and local agencies, as well as private customers.

It is important to determine the organization of services under the control of the laboratory director. The new leader should limit making wholesale changes to the existing structure. Determine what, if any, public health testing is performed externally. Nevertheless, arranging the organizational location of new services to enhance efficiencies or structural changes can be considered. But, changes in the span of control of incumbent supervisors should not be made without consulting with the supervisor and carefully evaluating the impact. Similarly, all new managers need to understand the informal relationships that have developed among the staff to effectively execute their job responsibilities within the formal organization, and the new laboratory leader should study these relationships before making changes. An organization's structure and culture will influence staff behavior, motivation, performance, teamwork and cooperation, and intergroup and interdepartmental relationships.

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As a Laboratory Director

The director is responsible for all test results and surveillance data. A significant portion of the director's work is external (bridge building, networking, scoping additional relationship, etc.), which allows the laboratory to function internally.

A laboratory director could be interacting directly or indirectly with those in leadership positions at universities, health, food or environmental agencies; state legislators and staff; governors' offices; community representatives and more. Good personnel, communication and management skills are just some of the capabilities needed. Surrounding leadership will interact differently with the director depending on where they fit into the bigger picture. Also, the director should know their role in reaching out to communities for relationship-building and education.

Organizations, particularly laboratories, are dynamic systems with staffing changes, environmental changes and technological changes. The organization must adapt to changes in a timely manner in order to be successful. The strategic plan (discussed in the Leadership section on page 23) should provide the framework of the vision, direction and the focus of the organization. If a strategic plan is absent or poorly prepared, the vision and focus will not be clear and the organization will not advance.

The Political Process

Political acumen is part of the job of a laboratory leader. Other political activities are discussed in those sections where pertinent e.g. Communication, Next 100 Days sections. The ability to affect legislation in government varies widely, but most jurisdictions permit only invited involvement, and some permit no involvement between government employees and elected officials or political appointees, be they county commissioners, state legislators or boards of health. Such restrictions do not mean that the political process is outside the domain of the laboratory leader. You will be asked or required to become involved in the political process related to appropriations and also possibly in areas of public policy directly related to laboratory services such as newborn screening and genetics, public safety and emergency response, communicable disease surveillance and control authority and any regulatory program for which the laboratory is responsible.

In the near term, you should determine whether your state produces an annual legislative guidebook and if so, obtain one and become familiar with it. The laboratory leader must understand the various committees, advisory committees and individual legislators who have authority over public health and laboratory programs.

For example, make a point to learn something about the legislators who serve on health and budget committees — i.e., those who can most directly impact the laboratory for better or worse. In many states, different legislative committees will have jurisdiction over different public health programs, such as epidemiology, sexual transmitted disease programs and genetics and newborn screening. Laboratory leaders should also know something about government advisory committees — as they may be asked to attend one advisory committee meeting or another. Are these committees strictly advisory or can they make policy?

Laboratory leaders will find that laboratory issues are most compelling to lawmakers when framed within a larger public health context and linked to concrete health and economic outcomes.

TIPS FOR DEALING WITH LAWMAKERS

- Do not be surprised if you are expected to be available 24/7 during the legislative session to provide written or oral briefings to those representing the department, to provide back-up responses during committee hearings, and/or to interact with legislative staff members in response to questions.
- Remember there is greater acknowledgement of the laboratory's role in public health and public policy deliberations, especially related to public safety and security and emergency response since the events of Amerithrax in 2001, H1N1 in 2005 or more recently, Ebola.

Core Functions of Public Health Laboratories — More Than Just Testing

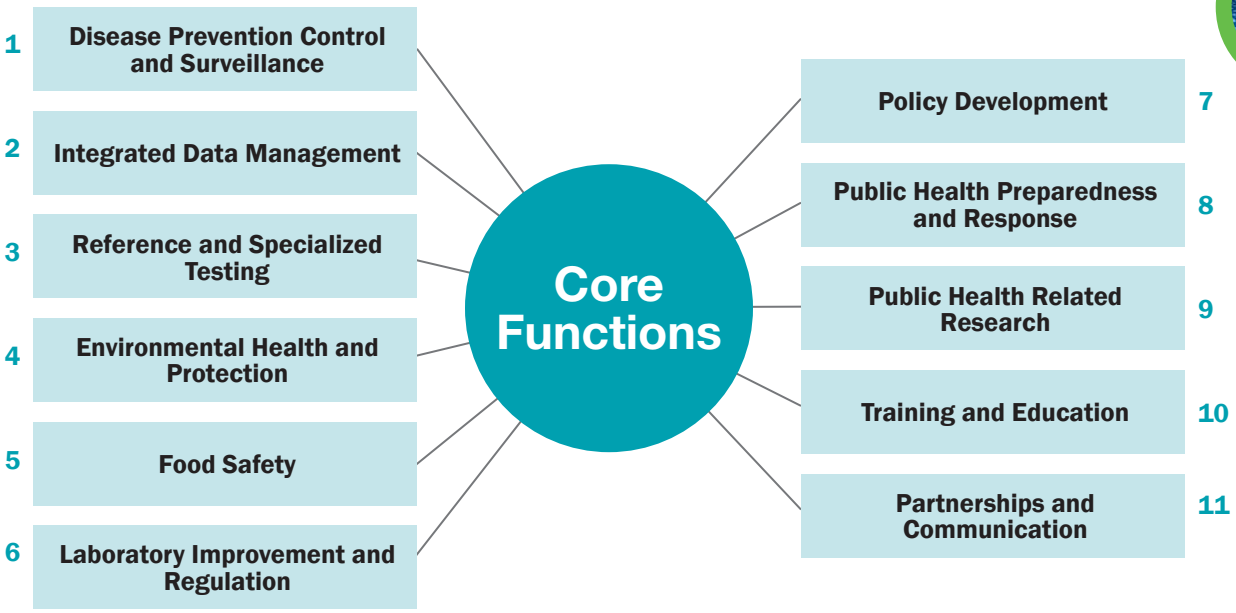
As new public health challenges arise, such as the emergence of new diseases and outbreaks, and environmental exposures, it is important to understand the scope of responsibilities in today's public health laboratories. The traditional role as an institution for testing and analysis, in addition to a leadership role toward prevention and control of disease and health improvement, require today's laboratory leaders to evaluate the functions, responsibilities and capacity of the public health laboratory. These functions provide a practical and complete framework for assessing the specific functions and services provided by the laboratory a core function is defined as essential roles in support of public health activities. APHL published the core functions document in 2002 and updated it in 2014. View the full document: http://www.aphl.org/AboutAPHL/publications/Documents/APHLCoreFunctionsandCapabilities_2014.pdf

One of the first things that a new laboratory leader should do is familiarize themselves with the core functions. By using this framework, the laboratory leader can:

- Determine which core functions the laboratory directly provides.
- Determine which core functions the laboratory does not directly provide, where those functions are provided and how the public health laboratory can assure their provision.
- Become familiar with the laboratory's regulatory responsibilities and authorities related to laboratory improvement.

Once this assessment is complete, the leader will understand how the public health laboratory relates to the parent agency, its programs and its plans. This assessment also provides the basis for strategic planning — integrating short-term transitional actions into the long-term planning and direction of the laboratory. Of note, both core functions documents state that not every public health laboratory will directly provide all essential public health laboratory services or perform all essential public health laboratory activities within a given jurisdiction. However, just as emphatically, the core functions documents assign responsibility to the public health laboratory director for *assuring* that all those services, activities and functions are available within the jurisdiction. This means, for example, that if the public health laboratory does not perform the chemical testing for drinking or waste water, the director should know which agency or laboratory within the political sub-division or jurisdiction does that work.

First, it compels a thorough review of the laboratory's regulatory responsibilities and authorities related to laboratory improvement, a review that will provide insight into the reasons for the current structuring of laboratory services and activities. Second, it provides a basis for prioritizing thinking about possible changes that might be beneficial to the laboratory (e.g., outsourcing clinical tests or bringing core functions in-house) and for determining which changes are probably not feasible because of regulatory mandates. Third, it requires the new leader to look beyond custom or tradition or other superficial explanations for the structuring of laboratory services to concrete laws, regulations and executive or legislative policies.



Core Functions of Public Health Laboratories*

1. **Disease Prevention, Control and Surveillance** — *Provide accurate and precise analytical data in a timely manner in support of the following*:
   - Prevention and control of infectious, communicable, genetic and chronic diseases, and environmental exposure. This may include testing for emerging and re-emerging microbial agents, immune status, antibiotic resistance, inherited neonatal metabolic disorders, environmental toxins and heavy metals like blood lead.
   - Recognition of outbreaks and other significant public health events, by identifying and characterizing the causative agents of disease and their origin.
   - Population-based surveillance for conditions of public health importance and to guide programmatic decisions.
   - Early detection of congenital disorders in newborns leading to timely diagnosis and treatment.
   - Monitoring of low incidence and/or high risk diseases, such as antibiotic-resistant tuberculosis, influenza, botulism and rabies.
   - Investigation and control of communicable or environmental diseases when testing is not available in the private sector.

2. **Integrated Data Management** — *Serve as the conduit for scientific data and information in support of public health programs through the following:*
   - Capturing of laboratory data essential for public health analysis and decision making, including detecting trends and sentinel events.
   - Use of standardized data formats.
   - Influencing public health policy.
   - Participation in statewide disease reporting networks.
   - Linkage with CDC and other national and international surveillance databases.
   - Collaboration with state and national laboratory systems.
   - Continuous improvement of laboratory data systems.

3. **Reference and Specialized Testing** — *Serve as centers of excellence using their expertise, reference and resources in the areas of biological, chemical and radiologic issues of public health importance to the following*:
   - Support the diagnosis of and surveillance for unusual and emerging pathogens.
   - Confirm atypical laboratory test results.
   - Verify results of other laboratories' tests.
   - Provide reference services to laboratories that may not have the capability to fully identify disease agents of public health importance.
   - Provide diagnostic testing for diseases of public health importance directly to providers when testing is not readily available.
   - Test for diseases of public health importance that are too rare.

4. **Environmental Health and Protection** — *Collaborate with partners to coordinate and ensure scientific analysis of environmental and human samples to identify, quantify and monitor potential threats to health by*:
   - Testing for toxic chemical, radiological and microbiological contaminants in air, water, soil and hazardous waste
   - Conducting biomonitoring of human specimens in the assessment of toxic chemical exposure.
   - Testing of environmental samples in support of federal and state regulations, aiding in the compliance with those regulations.
   - Industrial hygiene/occupational health testing to assist in efforts to protect indoor air quality and worker health, such as routine analysis of asbestos, lead, pesticides and radon.
   - Participating in the Chemical Laboratory Response Network (LRN-C) and the Environmental Response Laboratory Network (ERLN).

5. **Food Safety** — *Collaborate in the detection, monitoring and response to food safety issues by*:
   - Testing samples from persons, food and beverages implicated in food-borne illness outbreaks to detect and identify potential food-borne pathogens.
   - Characterizing isolates and participating in national strain characterization databases, such as PulseNet, to inform epidemiologic investigations.
   - Analyzing food specimens to detect, identify and quantify toxic contaminants such as pesticide residues, heavy metals and volatile organic compounds.
   - Monitoring for radioactive contamination.
   - Participating in the Food Emergency Response Network (FERN).

6. **Laboratory Improvement and Regulation** — *Provide leadership for laboratory improvement in areas of public health importance by*:
   - Promoting quality improvement programs for partner laboratories through activities such as training, consultation, and proficiency testing.
   - Developing and overseeing statewide laboratory improvement programs to ensure the reliability of laboratory data used for environmental monitoring and communicable disease surveillance and control.
   - Promoting safe laboratory practice through education, training, and consultation.
   - Assessing and improving the State Public Health Laboratory System by implementing the Laboratory System Improvement Program (L-SIP).
   - Guiding the creation of and supporting enforcement of regulations and laws that contribute to laboratory improvement.

7. **Policy Development** — *Helping to develop state and federal health policy by*:
   - Generating scientific evidence that informs public health practice and law.
   - Monitoring the impact of public health laboratory practice on health outcomes.
   - Serving as centers of expertise, reference and resources in the areas of biological, chemical and radiologic issues of public health importance.
   - Participating in the development and evaluation of standards related to the operation and performance of laboratories involved in public health testing.
   - Advocating for the use of sound reasoning in the application of laboratory science and system infrastructure sustainment.
   - Engaging in strategic planning at local, state and national levels.

8. **Public Health Preparedness and Response** — *Fulfill a key partnership role in local, state and national disaster preparedness and response by*:
   - Functioning as a Laboratory Response Network (LRN) Reference laboratory for biological agents and as an LRN Chemical Laboratory at a level designated by CDC.
   - Assuring the triaging of environmental samples for the rapid identification of threat agents (chemical, biological, radiological, and nuclear — CBRN), and food samples as a part of the Food Emergency Response Network (FERN).
   - Planning and ensuring that surge capacity is available in a public health emergency.
   - Having a Continuity of Operations Plan during a disruption of laboratory services.
   - Participating in the Environmental Response Laboratory Network (ERLN).

9. **Public Health Related Research** — *Engage in research to improve and expand the scientific and policy basis of public health laboratory practice and assure their optimal application in support of the public health system by:*
   - Developing, evaluating and implementing new technologies and methodologies.
   - Partnering with other public health disciplines.
   - Collaborating with academic institutions to carry out clinical and translational science.
   - Conducting public health systems and service research.
   - Working with the private sector to foster scientific innovation.

10. **Training and Education** — *Facilitate access to training and education by:*
    - Sponsoring training opportunities to improve scientific and technical skills within the public health laboratory system.
    - Supporting management and leadership development opportunities.
    - Participating in the training of both domestic and international scientists.
    - Partnering with academia to provide experiential learning opportunities.
    - Providing continuing education in the area of laboratory practice.

11. **Partnerships and Communication** — *Support their respective state public health laboratory systems by*:
    - Highlighting the importance of laboratory contributions to support public health.
    - Maintaining a strong communication plan that links all system partners.
    - Utilizing information technology for robust connectivity.
    - Engaging traditional and non-traditional partners.
    - Coordinating activities through the use of a laboratory program advisor, (i.e., laboratory system coordinator).
    - Linking the State Public Health Laboratory System to appropriate national surveillance networks.

**Defined as essential roles in support of public health activities, from updated 2014 Core Functions*

“If your actions inspire others to dream more, learn more, do more and become more, you are a leader.”

JOHN QUINCY ADAMS

Administrative Functions in the Laboratory

Key Points

- **The fundamental components of financial management**
- **The budgeting process**
- **The importance of HR management/understanding HR processes**
- **The ongoing process of performance management**
- **Facilities management — coordinating the physical workplace**

Key management activities surrounding safe and efficient laboratory practices involve planning, organizing, directing, coordinating and controlling. A good laboratory leader is expected to possess skills in each of these areas. A key priority for the new laboratory leader is to establish a relationship with the managers of the administrative areas of the laboratory including finance, human resources and facilities. If your laboratory does not have managers for these functions, you could expand the current role of staff who are willing to take on additional responsibilities or create a position to cover this where appropriate.

Financial Management

The laboratory community is often not prepared to deal with the financial side of business. However, the laboratory leaders do not have the luxury of focusing just on science. An effective laboratory leader must manage budgets, find adequate resources, identify where funds originate, show how they could be allocated to the laboratory and justify expenditures.

While most of the laboratory managers are familiar with determining budgets, financial management is more than developing budgets and tracking expenditures. It requires full knowledge of funding sources for the laboratory. Financial management may also require identifying new funding sources or presenting logical and evidence-supported justification to agency decision-makers for additional funding. Return on investment data is becoming increasingly important for justification of expenditures. Conversely, when inadequate funding is available, it is the laboratory leaders' responsibility to decrease expenses to maximize laboratory services with the funding available.

RETURN ON INVESTMENT

The role of the laboratory is not only to conduct laboratory testing, but also to produce results so that appropriate action can be taken, e.g. patients can receive appropriate treatment and epidemiologists can initiate disease investigations. When looking for sources of funding (or when justification is needed to maintain current funding), providing information on the ultimate outcome, produce appropriately and timely test results to minimize spread of disease, more effective use of funds for treating patients and better patient outcome would be critical to have. Documentation of these costs and system-wide savings, whenever possible, helps justify the costs of laboratory testing.

It is important to understand the total costs for which the laboratory is responsible. All components of costs — direct, indirect, variable and fixed — are included in cost accounting. The laboratory may only be responsible for direct costs or it may also be responsible for indirect costs. If indirect costs are included, it is important for the laboratory leaders and directors to know how these costs were determined. The increased funding for one of the laboratory areas may have impact on testing another area. Thus, it is imperative to keep all sections affected by funding sources involved in possible funding planning in anticipation of changes.

Fiscal accountability is a cornerstone of financial management. Responsibility and accountability of resource use can be monitored by review of routine reports created for the laboratory management and financial systems accounting personnel. Financial accounts should be audited periodically per agency needs to measure the success of control over the budget. The processes for accountability may differ from place to place, but the laboratory leaders must work with senior management and assign responsibilities to monitor and report on expenditures and status of other resources.

A key aspect of fiscal accountability is to establish adequate internal controls. Thus measures can be taken to:

- Protect resources against waste, fraud and inefficiency
- Ensure accuracy and reliability in accounting and operating data
- Secure compliance with policies of the organization
- Evaluate the level of performance in all levels of the organization

Internal controls should consider:

- If access to supplies/materials is limited to appropriate personnel
- If purchase requisitions/orders are used to authorize purchases (inventory control)
- If purchase requisitions/orders are tied to an accounting system with appropriate authorization of purchases (multiple people are assigned to approve purchases and document receipt of supplies)
- If an effective inventory control system is in place and functioning, including inventory records maintained and periodic physical inventory is taken to verify quantities
- Accurate time and attendance records maintained

TYPES OF COSTS

Direct Costs: All charges associated with performing a test

Indirect Costs: All charges linked with doing business but not directly tied to the test (overhead)

Variable Costs: Expenses that change according to changes in the volume of work

Fixed Costs: Expenses that do not change with the volume of work produced

Budgeting

Budgeting is a critical function for a laboratory director. Laboratory managers may prepare budgets for their units and coordinate with the laboratory director for the preparation of the overall budget. While laboratory leaders must make budget decisions to match available funds with priority activities to lead to achieving the laboratory's goals, budget office and financial personnel would be involved in finalizing budget.

A budget may be short-term (e.g., a year) or long-term (budget for multi-year project). The laboratory director must understand any potential differences in the planned and actual expenses and work to control differences, thus control against shortfalls by planning and cutting budgets as needed to align with available funding and redistribute resources effectively.

BUDGETS

A budget is a financial action plan or an expression of the expected financial resources needed and revenues (or sources of funding) anticipated over a certain period of time. Effective budgets help control resource utilization by allotment and monitoring of expenses.

Since budgets work in cycles (usually a year-long cycle), the laboratory needs to determine the costs for one cycle. If the costs are steady for a cycle, then the budget is "fixed." If the costs are variable during the cycle, then the budget is variable and planning becomes more difficult. Since the laboratory's workload is dependent on the number of specimens submitted for testing, the workload can often be variable. A review of the workload over a period of several years can provide a good indication of the expected workload for the upcoming budget cycle to allow for better estimations of need.

There are several types of budgets, including operating, capital, revenue and zero-based. The budget development process is on-going but the key is to be aware of the budgeting cycle and the windows of opportunity to enter the cycle. Accountability throughout all stages of the budgeting cycle is vital to the budget's effectiveness. Differences in budgeted and actual expenses should be identified and resolved immediately.

Key Budgeting and Fiscal Management Activities for Laboratory Leaders

A. Studying the current fiscal year budget to learn:

1. The amount of money available for laboratory operations
2. The origin of the funds (fee for service programs, learn the methods used for setting and collecting fees)

B. Becoming familiar with systems for tracking expenditures and monitoring budgets:

1. Know the various budget and expenditure reports available
2. Understand the cost accounting systems
3. Know the fiscal calendar

C. Always prepare a budget backed by complete accurate data to capture all laboratory expenses.

1. Prepare for possible funding shortfalls — explore alternate funding options.
2. Develop a contingency plan to prioritize services

D. Develop a "wish list" of items for the laboratory (often consisting of capital equipment that does fit into the annual budget) in case the laboratory is asked to help programs spend un-obligated funds at the end of the fiscal year.

E. Explore grant opportunities to fund projects towards public and community health and consider following sources, but not limited to:

1. Government/semi-govt. (competitive & non-competitive)
2. Not-for-profit foundations (e.g. Robert Wood Johnson, Gates or GE foundations)
3. Private or Industry

OPERATING BUDGET
An overall plan that identifies the expected resources and expenditures of an organization for a given period of time, usually one year. This may also be used as a communication tool with internal and external customers, allowing others to see the financial needs of the organization.

CAPITAL BUDGET
A plan for raising large and long-term funds for investment in assets (e.g., equipment, information systems or new construction), usually over a period greater than the period considered in an operating budget. The operating and capital budgets often intersect in these last areas. Program area specific funds must be available to purchase a piece of equipment (capital), and for maintenance and supplies (operations).

REVENUE BUDGET
A document that identifies each of the different types of revenue to be earned, according to the period in which it will be earned. The operating and capital budgets for a given year should not exceed the revenue budget.

BASE BUDGETING
A recurring budget assuming that the same services will be provided as during the previous time period. The amount programmed in the previous budget year for conducting the same program and services act as a base for the new budget and may change due to inflation, increased wages, etc.

ZERO-BASED BUDGETING (ZBB)
A process that does not use the past to guide the future. Every expense must be justified as if it were a new expense, thus creating a more rigorous budgeting process. Each year, the director must review all processes to determine needs and the best use of funding, and often used when starting a new program or testing procedure when there is no budget history to use as a comparison.

If the laboratory budget is rolled into the parent organization's budget, the responsible laboratory leaders can still exercise control by requesting timely and complete budget reports. Keeping good contact with organization's budget director and the analyst may assist assignment of critical funds to oversee the laboratory budget. This coordination will enable full understanding of the activities identified above in relation to the laboratory.

Human Resources Management

It is important for the laboratory leader to understand and recognize that no matter how large or how small their laboratory is, the leader has the ultimate responsibility for the laboratory. This includes not only understanding the science involved and the critical issues around quality laboratory results, but the administrative and staffing needs of the laboratory. The leader must assure that the laboratory has the resources it needs to meet its objectives. Laboratory staff are the most valuable resources for the laboratory. The laboratory leader must assure quality staff through hiring, training, evaluating performance and providing appropriate feedback, and opportunities for development.

KEY WORKFORCE ISSUES

- Policies and procedures for employee complaints of unfair treatment or promotion
- The laws and rules that support fairness in hiring, promoting and assigning work
- The steps in progressive discipline

The key laboratory asset, the workforce, requires a meaningful time investment to develop. The laboratory's success depends on its highly trained workforce. It is essential to attract and retain personnel who are skilled and invested in the success of the laboratory. Understanding why personnel stay with an organization will help retention efforts.

The laboratory leaders should work very closely with other senior staff and HR managers to establish a work environment that will maximize staff retention. Measuring staff turnover, periodic review of job description, and comparing salaries per government or civil service rules relative to similar institutions, can be an effective indicator of the laboratory leaders' success in this arena.

Keys to human resource management are to establish and use formal Human Resources (HR) policies and processes provided by the agency. These include hiring, creating new positions, performance evaluations, discipline, salaries and promotion. Laboratory leaders must understand of all of these policies. The laboratory may have additional policies and procedures which should be included in a personnel manual and any other relevant personnel policies. It is useful to meet with and develop a strong relationship with the HR management to identify current policies and procedures and to discuss key laboratory workforce issues.

It is critical that new laboratory leaders understand the capabilities of their staff. This includes becoming familiar with the names, backgrounds, skills, job functions and performance reviews of individual staff members. The first step to gather this information is a review of current position descriptions and performance evaluations. Ensure that existing position descriptions are up-to-date and that routine performance evaluations are being conducted. If position descriptions do not accurately reflect job duties or if routine meetings are not being conducted between supervisors and their subordinates to discuss performance, these problems must be rectified. As time permits, conduct a workflow analysis to determine whether staffing levels are appropriate and whether positions are effectively aligned with laboratory services and core functions.

It is important that the laboratory leaders remain consistent with the formal policies of the organization and that staff perceive policies are enforced equitably across the laboratory. Creating a career ladder would be an effective way of performance measurement, staff recognition and incentive for increments or other means for support to future success for critical staffing assets. Reviewing the PHL competency standards, domains and matrices would be critical resource to use and refer, as competency-based evaluation would likely be critical for future staff evaluation and performance measurement.

It is important that the laboratory leaders remain consistent with the formal policies of the organization and that staff perceive policies are enforced equitably across the laboratory.

Performance Evaluation

Performance management is a combination of leadership and motivational practices that are tied to clear expectations. The development of a reproducible monitoring system is critical because if performance cannot be measured, it cannot be improved. The performance evaluation system should be an agency policy; supported at the highest levels. The HR management can provide the policy for the organization if there is not a specific policy for the laboratory.

PERFORMANCE MANAGEMENT SYSTEMS SHOULD INCLUDE:

- A consistent structure for authority and responsibility
- A balance in long- and short-term focus/goals
- Focus on measurement factors and clarity in prioritizing objectives
- Tying compensation to performance
- A competency-based career ladder structure

Performance management maintains an atmosphere that both encourages and rewards excellence. The traditional approach was to have an annual evaluation that provided a retrospective analysis of the employee's performance. The system separated performance from reward (e.g., validation, encouragement, recognition) and attempted to manage employee performance at only one point in the year. The current approach provides ongoing coaching with real-time feedback (prospective and retrospective).

It encourages two-way communication between the laboratory leaders, managers and staff member. The approach also takes into consideration the employee's values and motivational factors. If the manager knows an individual's or group's values and is able to link those values to the organizational goals, staff will be motivated to succeed. An employee's performance is an integral part of organizational performance management. If employee and organizational expectations are aligned, both the organization and the individual will succeed. This also provides ongoing feedback so that performance can be addressed immediately and improved year-round and not only during the formal annual performance review process.

A new laboratory leader needs to provide clear and timely feedback to staff in order to encourage positive performance and address negative ones. New employees should be made aware of the performance management process and performance expectations. Gaps in knowledge and goals of the performance evaluation process should be identified and corrected among established employees. When performing an employee evaluation, both parties should come to the table with an assessment of performance. Discordance between the employee's and manager's evaluations needs to be discussed. Low performance must be identified clearly and a plan for improvement agreed upon by both parties. It is critical to assess whether previous goals have been met prior to setting new goals.

During the appraisal process the manager should:

- Engage employee in the process by listening and asking open-ended questions
- Provide honest, fair feedback to employee
- Address all of the employee's responsibilities
- Provide feedback on "successes," "failures" and "areas for improvement"
- Identify performance gaps and identify the root cause of gaps
- Provide balance (not all criticism or all glowing recommendations)
- Identify next steps for employee development (plan to close performance gaps)
- Identify training and continuing education
- Re-visit performance goals for the next evaluation period

Facility Management

A common definition of facility management from the *Clinical Engineering Facility Management Guide* is, "the practice of coordinating the physical workplace with the people and work of the organization; integrating the principles of business administration, architecture and the behavioral and engineering sciences." Laboratory leaders must understand the existing facility and need to work closely with the facility management office to provide smooth operations and scheduled maintenance, or necessary drills and exercises.

Program Evaluation

Public health laboratory program evaluations are conducted by the laboratory director and senior managers by systematic investigations to demonstrate the relationship between the laboratory and the needs of the community. Periodic laboratory evaluations are important to assure community partners feedback and identify improvement or modification of program areas.

Those may include:

1. Data for policies and decisions
2. Monitoring laboratory effectiveness and efficiency
3. Establishing the impact of the laboratory on health outcomes
4. Making the laboratory accountable for standards of quality and public investment
5. Investing laboratory resources toward the community-wide needs and equitably

COMMON FUNCTIONS OF FACILITY MANAGEMENT

Facility Management

- Management of the organization
- Facility planning and forecasting
- Space planning, allocation and management
- Lease administration
- real estate acquisition and disposal

Facility Operations and Maintenance

- Operation, maintenance and repair
- Security and life-safety management
- General administrative services

Construction Management

- Architectural/engineering planning and design
- Construction project management
- Alteration, renovation, and workplace
- Workplace planning, allocation, and management

Coordinated Efforts with Other Hospital Administration Offices

- Telecommunications, data communications, wire and network management
- Budgeting, accounting and economic justification

Program Evaluation Questions — Does the Program:

- Possess scientific expertise to assure the highest level of appropriate quality testing?
- Use its combined resources efficiently, including staff, equipment, technology, methodology and supplies to respond to health problems and hazards?
- Assure the necessary system capacity with the appropriate level of containment (e.g., biosafety level 3 capacity, lead containers for radioactivity, etc.)?
- Have two-way communication with customers and stakeholders to support diagnosis and investigations?
- Support public health investigations through active participation of epidemiologists, laboratorians and other system partners?
- Have the capacity to test unknown samples that may contain potential biological, radiological, or chemical threats, including a process that provides for laboratory specimen tracking, results reporting, coordinated interpretation and use of laboratory information?
- Understand the Laboratory Response Networks (biological, chemical, radiological, food, other) and individual roles in public health preparedness and response?
- Include a representative cross-section of SPH Laboratory System members in the development and definition of partner roles, Continuity of Operations Plan (COOP), preparedness, emergency communication, surge capacity plans, drills and exercises?

The APHL Laboratory System Improvement (L-SIP) is a great tool to assist new PHL leaders understanding 10 Essential Services and define standards for the laboratory to use to measure its ability to provide that essential service. The L-SIP Tool can also be a resource to generate data to improve operations. Laboratory leaders can convene a group of laboratory users (community and public health physicians and other health care workers, epidemiologists and other public health program personnel, policy makers, clients, etc.) periodically to discuss and measure the laboratory's capabilities (Focus the Evaluation, Gather Credible Evidence).

The process of engaging the laboratory stakeholders and discussing current levels and types of service delivery will reveal PHL systems strengths and weaknesses and identify areas for improvement and investment. The critical final step for the success of the program evaluation would be to record the survey data and share with the laboratory staff and the stakeholders.

This report should ultimately help in strategies to improve strength and weaknesses identified in the evaluation. Periodic status reports on progress in addressing the issues should also be developed and shared. The laboratory staff will play a critical role in identifying how to improve and to make the changes needed. When the team is involved in the evaluation process, they will be more likely to commit to implementing the improvement plan.

PROGRAM EVALUATION

New laboratory directors should meet with managers and evaluate where they are in the accomplishing the core functions as part of their organizational capacity and mission:

- **NONE:** 0% or absolutely none of the performance described is met within the PHL system
- **MINIMAL:** Greater than zero, but no more than 25%, of the performance described is met within the PHL system
- **MODERATE:** Greater than 25%, but no more than 50%, of the performance described is met within the PHL system
- **SIGNIFICANT:** Greater than 50%, but no more than 75%, of the performance described is met within the PHL system
- **OPTIMAL:** Greater than 75% of the performance

Three of the essential laboratory services addressed in L-SIP are universal amongst public health laboratories:

1. Diagnosing and investigating health problems and health hazards in the community,
2. Linking people to laboratory testing services
3. Evaluating the effectiveness, accessibility and quality of laboratory services.

Essential Service: *Diagnose and investigate health problems and health hazards in the community*

A laboratory that meets this Essential Service can provide high quality testing services and the capacity to provide these services to meet the needs of the community on a routine and expanded need emergency situation. The laboratory will need adequate resources (facility, testing materials, trained personnel, equipment, informatics and communications pathways), and the ability to coordinate with epidemiology and emergency response programs.

It is critical for new laboratory leaders to measure the ability of PHL to provide these services. The following may provide ensuring individual laboratory's capability:

1. Does the laboratory provide appropriate testing using an accepted standard of quality?
2. Does the laboratory provide timely diagnosis and investigation of health problems and hazards?
3. Is there a mechanism to evaluate the quality of services that meets standards or regulations?
4. Can the laboratory respond to a significant emergency?
5. Are outbreak investigations conducted through a partnership approach to assure needed expertise?

Essential Service: *Link people to health services to assure the provision of health when otherwise unavailable*

Measurement of this Essential Service will determine if individual and public health programs have access to laboratory services, especially when services are otherwise unavailable. The laboratory must establish processes to identify critical laboratory services that are needed, collaborate with other laboratories and public health programs to fill any identified gaps.

The following may provide ensuring individual laboratory's capability:

1. Does the laboratory have and distribute an up-to-date list of laboratory services?
2. Are the necessary systems (sample transport, laboratory consultative services, etc.) in place to support the laboratory work?
3. Does the laboratory establish turnaround times for submitters to assure timely results reporting?
4. Are the turnaround times regularly monitored?
5. Do all individuals and public health programs have access to critical testing? If not, what are the barriers to service delivery?
6. Does the laboratory engage stakeholders to determine what testing capacity and test menu?
7. Do laboratory stakeholders collaborate to seek resources to fill gaps in laboratory services?

Essential Service: *Evaluate effectiveness, accessibility and quality of personal and population-based services*

Measurement of this Essential Service will determine if the laboratory has established and uses its mission and purpose to regularly examine services and operations to assure that the needs of the community continue to be met, the quality of services provided are high, and changes are made when quality and access objectives are not met.

To measure laboratories ability to provide these services, following points may be considered:

1. Does the laboratory have a mission statement?
2. Does the laboratory regularly evaluate its mission, the services and the technologies used?
3. Are there key laboratory personnel available to provide consultation and advice?
4. Are objectives and plans developed on goals and how those will be achieved?
5. Are the goals and plans monitored?
6. Is progress shared with laboratory partners and stakeholders?

An evaluation of the laboratory program is challenging, time-consuming and might lead to criticism of laboratory quality and even individual laboratory personnel. Laboratory leaders may make effort in this investment and should focus on program improvement to assure building the strongest, highest quality laboratory practices engaging stakeholders. Willingness to be open to evaluation shows a commitment to quality and will be recognized by fellow laboratory staff, partners and stakeholders. Participating in generating performance data and exploring options for improvement with the laboratory will encourage stakeholders to increase commitment to PHLs and cooperate in development of realistic expectations based on current resources.

> **A genuine leader is not a searcher for consensus but a molder of consensus.**
>
> MARTIN LUTHER KING, JR.

Leadership

Key Points

- **The characteristics of a good leader and how to assess your leadership skills**
- **Time management, delegation and decision-making**
- **The strategic planning process**
- **The importance of networking and partnerships**
- **Mentorship, coaching and staff development**

Characteristics of a Leader

A leader promotes change, opportunity, growth and defines the future. In comparison, a manager controls a set of processes that help to keep a complex system of people and technology functioning smoothly. Public health laboratory leaders are required to be both good managers and good leaders. They must empower staff to perform to their maximum potential. Building positive relationships with staff and partners is fundamental to successful leadership.

Some important leadership qualities include:

- Strategic thinker
- Problem solver
- Strong communicator
- Teacher and mentor
- Decision maker

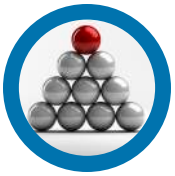
Ethical behavior at all levels of an organization: Ethical behavior tends to be good for business and involves demonstrating respect for key moral principles that include personal accountability and credibility, honesty, fairness, forthrightness, striving for excellence, transparency, impartiality, respect for colleagues and partners, relationship building, diversity and inclusiveness, social responsibility, environmental responsibility, upholding privacy and confidentiality, and adhering to policies regarding conflict of interest. A leader with integrity will demonstrate good ethical behavior since they serve as a role model for staff. Kouzes and Posner describe good leaders as those who: model the way, inspire a shared vision, challenge the process, enable others to act and encourage the heart (The Leadership Challenge by James M. Kouzes and Barry Z. Posner, published by Jossey-Bass, 3rd edition).

Personality Types and Their Influence in the Workplace

By understanding an individual's personality, a manager may better determine the appropriate roles and responsibilities for that person as well as determine the best methods of motivation and reward. There are many evaluation tools that can be used to assess personality types.

EVALUATION TOOL

- Myers-Briggs Type Indicator (MBTI), which can be accessed on line at www.MBTIComplete.com



Self-Assessment

A successful leader not only assesses and evaluates the organization, the individuals that comprise the team, and the team itself, but also uses objective measures for self-assessment. To be effective, one must maintain the courage to face one's own limitation, and the strength and wisdom to make improvements. When this reflection is done, performance improves, and ultimately, the mission of the organization becomes much more attainable.

SELF-ASSESSMENT TOOLS

1. 360° Evaluations (staff, peers, supervisors performing standardized evaluations)
2. Myers-Briggs° Type Indicator
3. Leadership and Team Self-Assessment Tools

RESOURCES

Boston University's Medical Campus Assessment Tool

- http://www.bumc.bu.edu/facdev-medicine/files/2010/10/Leadership-Matrix-Self-Assessment-Questionnaire.pdf

Center for Creative Leadership Assessment Services

- http://www.ccl.org/Leadership/assessments/index.aspx

UK's National Health Service Leadership Academy

- http://www.leadershipacademy.nhs.uk/discover/leadership-framework/leadership-framework-self-assessment-tool/

Kellogg School of Management

- http://www.kellogg.northwestern.edu/faculty/uzzi/htm/teaching-leadership.htm

Assessing Your Laboratory

Find Your Advisors

This means developing a slightly different — and sometimes more personal — network. Mentors, those more advanced in their careers or predecessors, are one important type of advisor. Another way is to establish an informal advisory committee of colleagues and peers from outside the laboratory. This can include leaders from academia, hospitals, clinical laboratories, healthcare, government or environmental, agricultural or enforcement sectors.

Understand Your Budget

Being the advocate and fundraiser for your laboratory is one of the most important positions of the laboratory leader. This role includes staying up-to-speed on the jurisdiction of elected officials and any changes within them. Furthermore, working with and within state budgets is becoming increasingly difficult. Effective interactions with state legislatures will help make that process less challenging. Because legislative operations vary from state to state, understanding those intricacies can help you affect the budget process. In many situations, there's an office or department within public health whose job it is to interact with the legislature: Use it. These people not only act as liaisons, but can fill you in on what questions you should be asking. Go to hearings, learn the key players and meet regularly with key funders. Even if you don't have much pull in your position, the best leverage you can have is to understand the legislative process inside and out. APHL has resources on how to cultivate funding outside of state budgets.

Government/Media Relations

A good leader should find effective, timely ways to stay informed. As spokesperson, you must keep well versed on the public health issues going on outside your laboratory. Know the political hot spots and how to address specific political leaders. Tap your public information officers who can steer you in the right direction on the media and communications side: whom to talk to, whom to avoid, what questions varying reporters typically ask and the like.

TIME MANAGEMENT TIPS

1. **Use a time log to identify and categorize use of time over a period of several days. Rating each item's value from high to low may eliminate unnecessary tasks**
2. **Identify goals/objectives and prioritize them. Instead of spending time on low-priority tasks, spend time focused on high value and priority tasks**
3. **Keep track of goals and progress towards those goals**
   - A prioritized "To Do" list helps avoid procrastination. Don't start a second task until the first is complete.
   - In some instances, a smaller task may be completed first to fill in small time slots. Divide large complicated tasks into smaller pieces.
4. **Use a scheduling tool to plan daily, weekly and long-term tasks/projects**
   - Leave sufficient unscheduled time to address unanticipated events without derailing programmed time. This also allows for reflection and uninterrupted work.
   - Make the time to develop leadership skills
5. **Have well-managed and productive meetings or delegate them to staff**
   - Create a standardized format for meetings, preparing agendas and after action items to be completed for all meetings.
6. **Avoid wasting time**
   - Don't take on too much and overfill your schedule — learn to say no
   - Don't do a subordinates work (assist the subordinate in the task through training or coaching)
   - Reduce unnecessary interruptions (phone calls, paperwork, personnel)
7. **Concentrate on results and outcomes, not just the activities**

Programs and Resources

Supplement your own onboarding process with existing pointers and guidance. Outside resources can help you better see the big picture. APHL offers a host of onboarding resources for laboratory directors to use in their first few months. Professional and lab development programs can also help you service your entire laboratory system. For example, APHL's Laboratory Systems Improvement Program (L-SIP) is a way laboratory leaders can get all laboratory partners and stakeholders together and involved — and collaboratively enhance the laboratory. This also helps connect multiple laboratories in the same state, gets partners talking about needs and gaps, and adds to the overall dialogue of the public health laboratory system evaluation.

Time Management, Delegation and Decision Making

Time Management

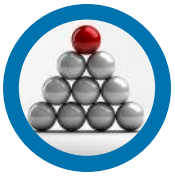
Leadership requires the judicious use of time according to priorities and the ability to multitask. Being busy does not necessarily equal being productive. The first step to effective time management is to assess how much time is being used to complete various tasks and then plan accordingly.

Delegation

Delegation is a key leadership characteristic, but a leader should remember not to delegate the critical tasks of planning, directing, controlling or motivating staff (e.g. do not delegate hiring and firing). Delegation empowers staff, but also allows additional time for the laboratory leader to complete other tasks.

Decision Making

Making good decisions, sometimes in less than optimum conditions, is one of the necessary actions of an effective leader. When you start in a new leadership position or in a new environment, it is important to know the laboratory's formal and informal organizational structures, including lines of authority and decision-making processes. Understanding the different decision making styles and when they can be effective in different situations is helpful.



Decision-making Process

In the ideal situation, decision makers will have full access to the information required to make the decision. In this case, quality is more important than speed, and decision makers can take the time necessary to objectively determine the options and make a decision. However, the ideal situation often does not occur in the complex laboratory environment. For example, if the decision is critical, speed may be necessary and therefore limited information is collected and not all alternatives are considered or are only viewed sequentially.

Decision-making Tools

Brainstorming is a decision-making tool that can assist in developing creative solutions. This is an open process that generates, clarifies and evaluates numerous ideas, problems or issues. If done properly, all persons feel free to make suggestions and all suggestions are considered in generating a list of possible solutions. Once the realistic options have been prioritized, objective evaluation criteria are used to select the best option.

Follow-through

Once a decision has been made, action must be taken. The Plan-Do-Study/Check-Act Cycle (PDSA/PDCA Cycle) will assist in this process. The do and check in the cycle tests the hypothesis by doing and then collecting and measuring data to check.

TIPS FOR DELEGATING

1. **Delegate to the right individuals, based upon capabilities, which will help to develop staff and improve trust between management and staff**
   - Evaluate staff skills and when possible delegate to the lowest possible level in the organization
   - Delegate tasks that are interesting to staff
   - Assure that tasks are completed (monitor, follow-up and provide feedback) and are not delegated further unless appropriate
2. **Communicate clearly**
   - Provide clear instructions and outcomes and define metrics
   - Set reasonable deadlines and ensure they are understood
   - Provide ongoing communication, training and coaching as needed
3. **Assure the needed resources are available**
4. **Recognize staff contribution and appreciate their value**

DECISION-MAKING STYLES

- **Autocratic Decision-making:** One person makes the decision without input from others ("this is the decision I want from the group"). The information used to make the decision is limited to available information or the group's information. Any alternative solutions are generated and evaluated without group input.
- **Consultative Decision-making:** The leader obtains suggestions and ideas from the group and decides with the available information. The final decision may or may not reflect the team members' influence.
- **Joint Decision:** The problem is shared with the relevant team members who together evaluate the alternatives and attempt to reach a consensus agreement. This style generates the most buy-in from the team, but costs the most in time and potential energy.
- **Delegation:** The problem and solution are in the team's hands. The guidelines are set and the team must generate and evaluate alternative solutions then reach agreement without the leader's involvement or influence.

Strategic Planning

For long-term planning and direction of the laboratory and for continual assessment, strategic planning is an important process. It should be used to determine where an organization is going over the next three to five years, how it will get there and how it will know if it has arrived on target. This process allows a better understanding of the potential impacts of decisions. Good strategic planning involves continuous program assessment in alignment with an organization's goals and objectives.

Strategic Planning Process

The strategic planning process is complex and is important to involve the right people. In addition, seeking counsel from external sources can be beneficial. Key steps include:

1. Starting with vision and mission statements creates a framework and allows the different parts of the organization to:
   - See vision and achieve common goal
   - Reflect on common direction
   - Improve ownership and belonging
   - Respond to changing environment
   - Move forward
2. Setting the goals and objectives
3. Assigning responsibilities, timelines and budgets
4. Producing written document

Strategic Planning Tools

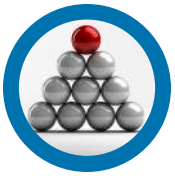
SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis: A tool used to organize and analyze the factors that will impact organization effectiveness.

SWOT success requires:

- Objectivity — involve all stakeholders
- Involvement of all levels of leadership and operations of your institution
- Involvement of customers
- An open atmosphere where there is no fear of expressing viewpoint

Using SMART(ER) objectives/goals in your strategic planning:

- Specific
- Measurable
- Achievable
- Realistic
- Time
- [Extending capabilities (challenging)]
- [Rewarding the challenge]



Strategic Partnerships

Strategic partnerships are part of the Core Functions (see Environmental Scan, page 5). They involve communicating and partnering with managed care organizations, academia, private industry, legislators, public safety officials, and others to participate in policy planning and to support the core functions. The laboratory leader must develop strategic partnerships beneficial to their organization, the partner organization and the patient whose specimen is tested. Ultimately, the strategic partnerships are utilized to create and maintain an effective laboratory system.

DO THE PARTNERSHIPS:

- Possess scientific expertise to assure the highest level of appropriate quality testing?
- Use their combined resources efficiently, including staff, equipment, technology, methodology and supplies to respond to health problems and hazards?
- Assure the necessary system capacity with the appropriate level of containment (e.g., biosafety level 3 capacity, lead containers for radioactivity, etc.)?
- Have two-way communication with customers and stakeholders to support diagnosis and investigations?
- Support public health investigations through active participation of epidemiologists, laboratorians and other system partners?

Key Laboratory Partnerships

Epidemiology and Beyond

Communication and partnership with epidemiology leadership and managers of the various programs, e.g. STD control, TB control etc., that the laboratory supports is important. The laboratory director needs to open lines of inclusive communication. While it may be obvious to talk with the epidemiologists because of the natural link between the laboratory and disease control, the dialogue cannot end there. Even if the public health laboratory only supports infectious disease control activities, it probably provides services for the TB, STI, veterinary/ zoonotic, immunization, disease control, and water, food and dairy programs. As with any high-level manager, the epidemiologist who may be in charge of these programs may not be aware of as many program details as the categorical program managers.

While it may be obvious to talk with the epidemiologists because of the natural link between the laboratory and disease control, the dialogue cannot end there.

Furthermore, these programs rely on and inter-relate with other major public health programs such as nursing services, local health agencies and targeted population-based programs for minorities or women and children that are also the customers or clients of laboratory services. Thus, the necessary communication needs to go beyond the epidemiologists.

Emergency Response

The laboratory leader should position the laboratory to work seamlessly with partners, especially in terms of the high-priority area of emergency response. Familiarity with the laboratory's emergency response plan, the state or local emergency response plan, the jurisdiction's BioWatch plan (if applicable), memoranda-of-understanding with other jurisdictions and any other emergency response documents should be one of the first tasks of a new leader. Review of these materials should determine the strategic partnerships:

- Emergency contacts within the laboratory's parent organization and the specific individual to whom you report during an emergency. Find out their 24/7 contact information.
- The respective (and possibly overlapping) roles of local, state and federal authorities during an emergency. For example, under what circumstances would laboratory samples be routed to federal facilities?
- The laboratory resources available in your region (possibly including Mexico or Canada). Such resources include sentinel, veterinary, agricultural, environmental and academic/research laboratories, in addition to surrounding public health laboratories. (Craft laboratory partner lists with contact information.)
- Arrangements with other jurisdictions for surge testing and/or testing under BioWatch or the BDS. Under what circumstances do you perform testing for other jurisdictions and under what circumstance might they perform testing for you?
- Arrangements with other laboratories/jurisdictions for Continuity of Operations Plans (COOP).

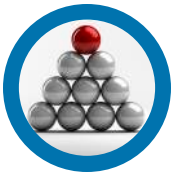
You must also contact key emergency response personnel outside the laboratory: the state homeland security officer, the local FBI WMD coordinator, state or local HAZMAT officials, local Federal Emergency Management Agency (FEMA) staff, state civil support teams, state or local emergency operations center staff, the state postal inspector, the state or local police chief and local Department of Defense (DoD) officials, if any. (The laboratory may have DoD responsibilities if federal weapons or chemical stockpiles are located in the state.) Assess the laboratory's relationship with each party and clarify their role and their expectations.

COMMUNICATION BUILDS RELATIONS

When terrorists sent anthrax through the mail in 2001, Norman Crouch, director of the Minnesota state laboratory, said the laboratory's most important asset was "our relationship with epi." Throughout the crisis, epidemiologists handled all related phone calls. State epidemiologists and laboratorians met with first responders to set out a triage scheme that reduced SPHL testing to only about 30 specimens. "Having those relations in place beforehand allowed that to happen quickly and easily," says Crouch.

Today, Minnesota SPHL staff and epidemiologists meet briefly every morning to discuss current news and calls fielded the previous night. The relationship is bolstered by a mutual understanding of each partner's role. "The lab is not just a place where epidemiologists get data," Crouch reports.

Laboratorians and epidemiologists share an emergency response mentality. With the application of new molecular methods "we're looking all the time for something that might signify an outbreak." The Minnesota state laboratory also enjoys good communications with clinical laboratories thanks to a state rule requiring all laboratories to send isolates of certain reportable disease organisms to the SPHL. "We try to keep our epidemiologists from interacting with the clinical labs; that's our job," Crouch says. "And if you have a close relationship with epi, you can do that."



Laboratory Network

The relationship with laboratory partners and stakeholders goes beyond emergency response. A core function for PHLs is to provide or facilitate the access to important laboratory testing services. If a laboratory does not perform specific testing important to public health programs (e.g. newborn screening, food testing, water testing), these services may be provided by another laboratory. PHLs work together to test for diseases of public health concern and contribute to state and national surveillance programs (e.g. PulseNet, CaliciNet, Respiratory Laboratory Network). Regional or local public health laboratories may provide surge capacity for testing during widespread outbreaks. Leaders should build partnerships with other public health laboratories and become familiar with their testing capacity. Memoranda-of-understanding or other contracts may need to be implemented if these laboratories are to perform referred testing services (especially if fees are involved). Partnerships with clinical or commercial laboratories are also important beyond their role as sentinel laboratories in emergency response. Exchange of best practices, surge testing, networking and educational opportunities are just a few of the benefits.

If a laboratory does not perform specific testing important to public health programs (e.g. newborn screening, food testing, water testing), these services may be provided by another laboratory.

Academic Institutions

A core function of public health laboratories is to “engage in research to improve and expand the scientific and policy bases of public health laboratory practice and assure their optimal application in support of the public health system.” Partnering with academic institutions is one way that public health laboratories can contribute to public health-related scientific research and also have access to interdisciplinary experts or other resources. In addition to research, academic institutions may have educational programs for which public health laboratories may contribute education and training opportunities.

Policymakers

Public health laboratories and their partners in the communities are continually challenged by the dynamic nature of regulations, laws, funding and policy decisions at the local, regional and national levels. The involvement of representatives of this group is vital for assuring that good scientific data yield sound public health policy.

Laboratory leaders and their staff should interact with legislative bodies, administrative councils, agency officials, and representatives of professional societies in the development of policies and procedures that determine their provision of services. Funding decisions by governmental bodies affect how the resources of government laboratories are used and what services will be offered. Fiscal decisions are often the result of legislative hearings in which representatives from advocacy groups have significant input.

Associations and Networks

Relationships with associations and networks are extremely beneficial to the public health laboratory as they can bring many opportunities, support and resources to their laboratory. See page 59 for more information on APHL’s offerings.

Create Your Professional Network

After analyzing your reporting structure, ask yourself who among these will help you get things done. Who makes the decisions? Likely, they'll be your sources of funding. Though these people can be outside your direct network — and reporting to different higher-ups — it's important to discover their needs and address them. This network could include those from universities, hospitals, CDC and APHL.

Staff Development

To assure successful laboratory operations, the laboratory leader must support their staff's work and job development. Perhaps with the exception of budget preparation and oversight, the greatest amount of time must be devoted by the laboratory leader to workforce relations/human resource management. Staff development is a part of human resource management.

The laboratory workforce is a critical asset that requires a meaningful time investment to develop. Establishing a work environment that fosters staff retention and development is essential to human resource management, along with following formal HR policies and processes (see Administrative Functions in the Laboratory on page 13 for more on human resource management).

STAFF DEVELOPMENT TIPS

- Foster the leadership aspirations of the laboratory staff by coaching and mentoring
- Begin or continue a long-term program for staff development through education and training opportunities
- Perform succession planning (see more in The Next 100 Days and Beyond on page 53)

Coaching and Mentoring

Coaching should be a part of performance management, and is a means for a manager/supervisor to provide ongoing coaching with real-time feedback (prospective and retrospective) since it encourages two-way communication. The approach also aligns the employee's values and motivational factors and aligns them with those of the organization. If coaching is provided on an ongoing basis, issues can be addressed immediately and not just during the annual performance review process (see The Next 100 Days and Beyond on page 53 for more on mentorship).

A Long-Term Program for Staff Development

Staff training is an important issue and the laboratory leader should become familiar with policies, if any, on remedial training, emerging technology training, supervisory training, continuing education, university educational opportunities, etc. In general, however, staff development is a long-term project, best addressed slowly and logically with fiscal planning as part of the process. If your laboratory has a designated training officer/coordinator, you are on a productive path. If you do not have access to a training officer/coordinator, you may contact APHL. Our training professionals have laboratory backgrounds and can help you begin the training process using a variety of aids, including organized workshops.

Succession Planning

Recognizing that all laboratory leaders have an end of tenure due to retirement or resignation, succession planning is the process to prepare the current workforce to assume the duties of the directors/leaders on a permanent or short term basis. (For more on succession planning, see The Next 100 Days on page 53).

“A leader takes people where they want to go. A great leader takes people where they don’t necessarily want to go, but ought to be.”

ROSALYNN CARTER

Systems Thinking

Key Points

- **Continuity of Operations Plan (COOP)**
- **Emergency preparedness**
- **Laboratory safety**
- **Quality assurance**
- **Information management**
- **Core competencies**

Laboratories performing public health testing generate critical data used to inform decisions for patient treatment, implementation of preventative measures and development of effective policies that protect the public from unforeseen events. Laboratories have resources such as staff expertise, specialized equipment and facilities that cannot be easily replaced. This makes planning challenging but also essential. Consequently, the ability to continue the laboratory's core mission despite disruptive conditions is imperative.

Continuity of Operations Plan

A Continuity of Operations Plan (COOP) establishes priorities and procedures to sustain operations of the laboratory and provide for alternate methods and locations of operations for an extended event.

Scope

The COOP has two main features. First, it provides a comprehensive list of all core testing and support activities that must be continued if the laboratory experiences a partial or complete operational disruption. Second, it provides a plan of action to ensure that all core activities are continued with minimal delay. If the laboratory facility or any portions of it are involved in a crisis or emergency, or declared unusable for its normal operation, the COOP is activated immediately. COOP activation can be caused by natural or manmade disasters, such as floods, winds, or disease preventing operations, such as an epidemic among the laboratory staff.

Situation Overview

The probability that the laboratory will experience an event disruptive to its operation is related to its vulnerability. Laboratory leadership should assess vulnerability to determine what type of disaster is most likely to happen and what measures can be taken beforehand to prevent laboratory service disruption in that situation.

The following should be considered:

1. **Laboratory activities are prioritized based on the criticality of completing testing.**
    - The most critical tests should have detailed plans addressing alternative equipment and testing facilities. Multiple testing personnel trained to perform critical testing.
    - The second level of prioritization is those specimens that will be unacceptable if testing is delayed while the facility is brought back to operation.
    - Service that is not time critical and for which delayed testing will not compromise result quality are designated least essential. These services are still important but their disruption will be addressed after the crisis passes.
2. **A roster of personnel trained to perform the most critical tasks is developed to provide direction on who should be relocated to the alternative facility.**
    - The duties of each essential service person should be outlined in a Job Action Sheet.
    - Essential testing personnel should be informed of alternate testing plans in advance and current contact information should be maintained.
3. **COOP should include backup/succession planning in the event that the laboratory director or other key response personnel are not available. Clearly state who is the second and third person designated for these responsibilities.**
    - The person responsible for decision-making is identified in advance.

Additional Considerations for Continuity of Operations Plan

1. Check if your agency has a COOP
2. Create a laboratory COOP, if applicable
3. Let staff know that there is a COOP
4. Exercise and update the COOP regularly

RESOURCE

COOP Template

- http://www.aphl.org/MRC/Documents/PHPR_2011Feb_PHL-Continuity-of-Operations-Guidelines.pdf

Emergency Preparedness

Everything related to emergency response has to be a high priority. Among your first tasks as a new leader should be to familiarize yourself with the incident response plan, the state or local emergency response plan, the jurisdiction's BioWatch plan (if applicable), memoranda-of-understanding with other jurisdictions, and any other emergency response documents. After reviewing these materials and having conversations with the laboratory's BT and CT coordinators, determine the following:

- Emergency contacts within the laboratory's parent organization and the specific individual to whom you report during an emergency. Find out how to reach these people 24/7.
- Laboratory responsibilities during an emergency. For example, is the laboratory an LRN reference laboratory? What is its level of CT response (1, 2 or 3)? What are its responsibilities under the federal BioWatch program, the US Postal Service's Biohazard Detection System (BDS), if any? Identify who is the Select Agent Program responsible official and alternate responsible official.
- The respective (and possibly overlapping) roles of local, state and federal authorities during an emergency. For example, under what circumstances would laboratory samples be routed to federal facilities?
- The laboratory resources available in your region (possibly including Mexico or Canada). Such resources include sentinel, veterinary, agricultural, environmental and academic/research laboratories, in addition to surrounding public health laboratories. (Establish laboratory partner lists with contact information.)
- Arrangements with other jurisdictions for surge testing and/or testing under BioWatch or the BDS. Under what circumstances do you perform testing for other jurisdictions and under what circumstance might they perform testing for you?
- How samples are moved within the laboratory's jurisdiction, i.e., courier systems or other transport arrangements.

Among your first tasks as a new leader should be to familiarize yourself with the incident response plan, the state or local emergency response plan, the jurisdiction's BioWatch plan (if applicable), memoranda-of-understanding with other jurisdictions, and any other emergency response documents.

Once you have covered the basics, it is time to contact key emergency response personnel outside the laboratory: the state homeland security officer, the local FBI WMD coordinator, state or local HAZMAT officials, local Federal Emergency Management Agency (FEMA) staff, state civil support teams, state or local emergency operations center staff, the state postal inspector, the state or local police chief and local DoD officials, if any. (The laboratory may have DoD responsibilities if federal weapons or chemical stockpiles are located in the state.) Assess the laboratory's relationship with each of these individuals and clarify their role and their expectations. If their expectations are unrealistic, you may need to educate them. Finally, ask if there are existing working issues or problems that need to be addressed, such as sample turnaround time. (Don't make promises you can't deliver.)

Prepare Laboratory Staff

Within the laboratory, walk through the incident response plans with your BT and CT coordinators to identify any gaps or problem areas. Assure that the following items are in place:

- List of phone extensions, email addresses, and emergency contact information for all personnel (essential and non-essential)
- Security clearances for designated staff
- Flex-time policy
- Overtime policies (encompassing pay and/or compensation time)
- Weekend call schedule or duty roster
- Built-in redundancy in testing expertise. (This may require a cross-training program.)
- Appropriate safety measures for testing unknown or high-risk samples
- Policies outlining who reports test results and how (i.e., e-mail, other electronic reporting systems, etc.)
- Chain-of-custody forms and procedures
- Emergency purchasing procedures
- Surge capacity protocols and procedures for outsourcing testing
- State and laboratory policies on the use of volunteers (e.g., retired or private sector laboratory scientists) to perform testing in the laboratory during crises
- Description of the services provided by branch laboratories, if applicable
- Triage procedures or special policies for sample/specimen submission during emergencies

If you have a clinical background, do not believe that a stat test approaches the demands of emergency testing; the sheer volume of specimens/samples submitted during a crisis can overwhelm the most organized laboratory staff.

RESOURCES

- http://www.redcross.org/prepare/location/home-family/plan
- http://www.umces.edu/hpl/emergency-preparedness-plan
- http://www.selectagents.gov/resources/RO_Manual_2014.pdf

The APHL Emerging Infectious Diseases Framework Checklist — available on APHL's website or from infectious disease program staff — is a useful resource designed to help public health laboratories prepare for outbreaks and bioterrorism

Laboratory Safety

Laboratory workers are exposed to numerous potential hazards including chemical, biological, physical and radioactive hazards, as well as musculoskeletal stresses. Supervisors, principal investigators and managers who have the primary responsibility for maintaining laboratories under their supervision as safe, healthy places to work and for ensuring that applicable health, safety and environmental regulations are followed.

Administer a Laboratory Safety Program that is Compliant with Regulatory, Accreditation and Licensing Requirements:

- Check if your agency has a Safety Manual or equivalent that documents activities that related to safety policies, procedures and processes
- Learn Injuries and Workers' Compensation policies
- Learn Select Agent polices, if applicable
- Be familiar with drills and requirements

Foster a Safety Culture

- Encourage employees to care about their health and safety and that of others
- Involve every employee in some aspect of the safety program and give each employee specific responsibilities
- Conduct periodic, unannounced laboratory inspections to identify and correct hazardous conditions and unsafe practices. Involve employees in simulated OSHA inspections.
- Make learning how to be safe an integral and important part of your work and your life
- Schedule regular departmental safety meetings for all employees to discuss the results of inspections and aspects of laboratory safety
- Develop plans and conduct drills for dealing with emergencies such as fire, explosion, poisoning, chemical spill or vapor release, electric shock, bleeding and personal contamination
- Require good housekeeping practices in all work areas
- Use warning signs to designate particular hazards
- Maintain a centrally located safety library

RESOURCES

- https://www.osha.gov/Publications/laboratory/OSHA3404laboratory-safety-guidance.pdf
- https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10107
- http://www.cdc.gov/about/pdf/lab-safety/15_253632-j_solker_24-7cdc_lab_safety20215d-final.pdf
- http://www.labsafetyinstitute.org/epubs/LSG_English.pdf
- http://www.cdc.gov/biosafety/publications/bmbl5/BMBL.pdf

Assuring Quality Laboratory Services

Laboratory leaders must recognize early in their tenure that the public health laboratory should provide the highest quality service available.

Regulatory Oversight — Assessing Quality through Regulatory Compliance

One quick indicator of laboratory standards is compliance with all relevant laws and regulations.

As a Regulated Agency

- Compile a list of all the licenses, certificates and permits the laboratory possesses and request the most recent evaluation associated with each
- Seek the counsel of laboratory managers on the successes and challenges they face providing quality service and clearly articulate to managers your expectations for quality assurance and improvement

LABORATORY DIRECTOR

Among the first things the new laboratory director needs to do is review the current CLIA license, state license if applicable, Select Agent registration, any EPA certificates and any correspondence related to these licenses and certificates. These will tell the new director what specialties and activities the laboratory can legally engage in, and assure her that the laboratory has met the minimum applicable requirements to operate.

As a Regulator of Laboratory Services

Learn the laboratory's responsibilities by assuring the quality of laboratories outside the worksite/department. Understand and the organizational and fiscal relationships involved. If the authority to regulate laboratories is not with the public health laboratory, the new leader should acquaint themselves with the staff of the responsible government agency. The purpose is to look for ways in which the public health laboratory can assist or support the efforts of the regulatory agency through training and outreach programs, development of a jurisdictional laboratory response network, or simply facilitating coordination among different public sector laboratories, or between the private and public sectors.

The new laboratory leader needs to set expectations regarding quality assurance and improvement and clearly articulate them to the managers who are responsible for meeting them.

Several national agencies regulate various aspects of public health laboratory testing. The following are significant:

1. ***Centers for Medicare and Medicaid Services*** regulates testing performed on specimens of human origin in accord with the requirements of the Clinical Laboratory Improvement Amendments of 1988.

2. ***US Environmental Protection Agency***, through the Safe Drinking Water Act, oversees public drinking water. The state drinking water program assumes primacy for enforcement of the act in the state, including designation of the "principle state laboratory," which is usually the state public health laboratory.

3. ***US Food and Drug Administration and US Department of Agriculture*** oversees food quality (milk, produce, meat, etc.) once they are transported across state lines.

4. ***Select Agent Program***, collaboration between the Centers for Disease Control and Prevention/Division of Select Agents and Toxins and the Animal and Plant Health Inspection Services/ Agriculture Select Agent Services, oversees the possession, use and transfer of biological select agents and toxins, which have the potential to pose a severe threat to public, animal or plant health or to animal or plant products.

If the laboratory has a quality assurance officer (QAO), the new leader should discuss the laboratory's quality, performance and related issues. If the laboratory does not have a single designated QAO, then the subject of quality assurance practices, policies, procedures and performance has to be addressed in one of the first management staff meetings. The new laboratory leader needs to set expectations regarding quality assurance and improvement and clearly articulate them to the managers who are responsible for meeting them.

Process Improvement

Laboratory Efficiencies

An efficient laboratory can reduce waste and redundancy, increase productivity, enhance service delivery, increase user satisfaction and improve employee morale. The use of LEAN and its concepts, initially used by management in manufacturing settings to analyze and improve operations, is now being implemented in the healthcare sector, including PHLs, to increase efficiencies while improving processes and quality.

Identifying Gaps

While process improvement is important, new laboratory leaders must also identify gaps in their "laboratory system." One tool that many State and Local public health laboratories have used is APHL's Laboratory System Improvement Program (L-SIP). This tool focuses on the essential services of public health laboratories and cultivates communication between the laboratory and its stakeholders to identify gaps in service that may need to be addressed. More information on L-SIP and other performance improvement tools can be found on APHL's website.

RESOURCES

APHL Laboratory System Improvement Program

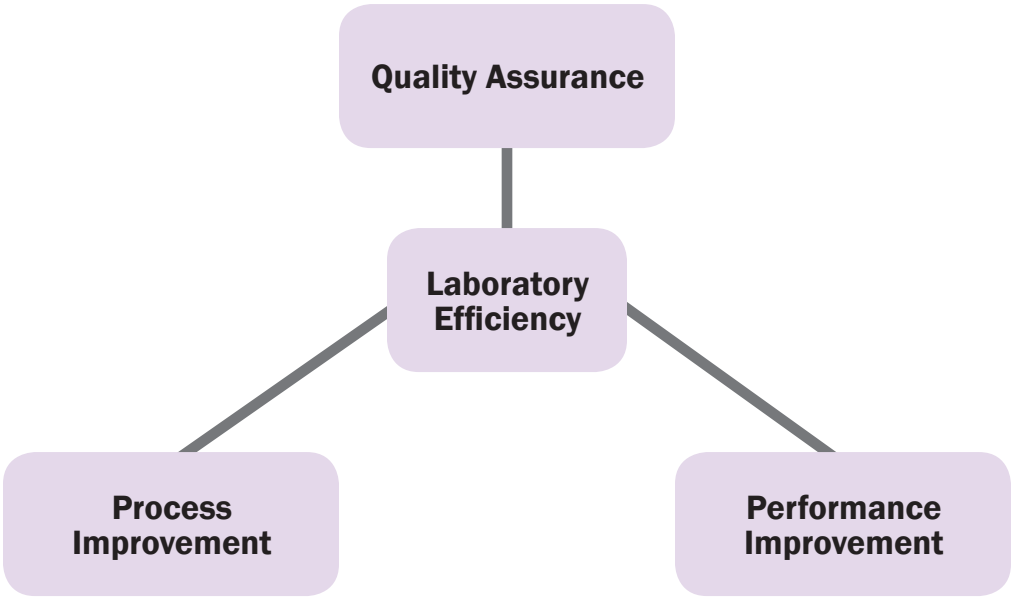
- http://www.aphl.org/aphlprograms/lss/performance/pages/default.aspx

Performance Management

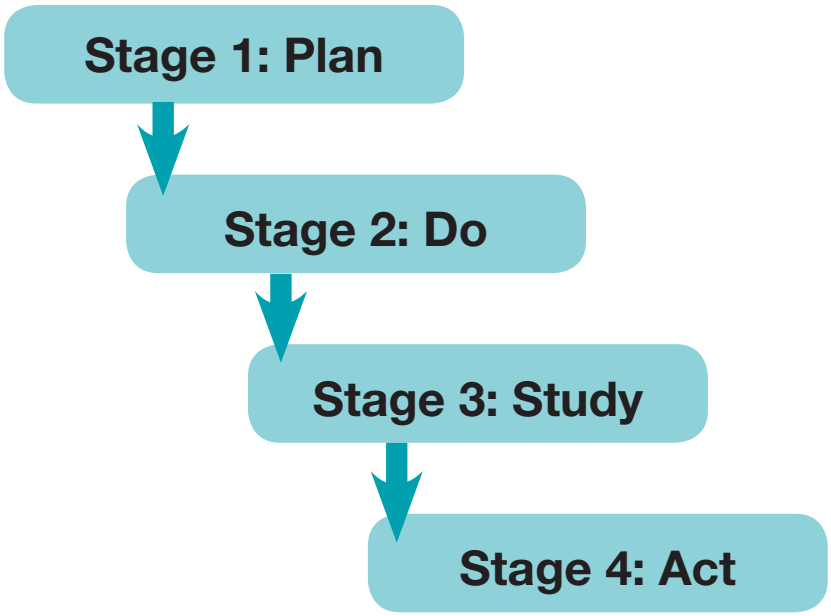
- http://www.aphl.org/resource-centers/orc/documents/turningpointtoolkit0304.pdf

Performance Improvement

Performance improvement efforts result in increased accountability by demonstrating that laboratory resources are used to yield the intended outcome. Data can be used to measure quality and identify opportunities for improvement and determine if improvement efforts are successful.



There are many approaches to performance improvement, but they all use data to identify problems, generate possible solutions and measure the success of the solutions. One performance improvement model that is frequently used in public health is the Plan-Do-Study-Check-Act (PDSA) cycle. This cycle is a tool that helps clarify the intent of the effort, identifying changes that will improve and measuring the success of the implemented change.



Stage 1: Plan

- **Identify the problem or opportunity for improvement.** Ideas for this can come from your own observations, experiences and assessments of laboratory users, from the laboratory personnel or from a program evaluation or quality survey.

- **Assemble a team of individuals in and outside the laboratory who have knowledge about the problem or opportunity for improvement.** Include laboratory users, testing personnel, support staff (e.g., if this is an effort to improve specimen delivery, include the drivers who deliver the specimens). The team should be given authority and resources to collect the data and make recommendations. Laboratory leaders should be prepared to seek the resources needed for improvement trials and implementation. The first thing the team will do is develop an "aim" statement to articulate what issues will be addressed and what the measures of success will be.

Example: *We will decrease rejection of HIV viral load plasma specimens by 20% by coordinating specimen collection and shipment times.*

- **Examine the current approach.** The team will examine existing efforts in order to determine what might be done to improve the process. This process is accomplished by diagramming the steps in the process and identifying who is involved at each step and what they do. This chart will reveal waste and inefficiency. One effective way to identify why a problem is occurring is to ask "why?" five times.

Example: *Rejected HIV viral load specimens require nursing staff to collect another specimen (time and materials costs); the clients must make another visit to the clinic (lost wages, transportation costs incurred); laboratory staff must register specimens that cannot be tested; patient prescription changes are delayed (viral resistance develops, viral transmission occurs). The last result shows how the process affects the health outcome.*

- **Identify potential solutions.** Based on what the team has learned as the root cause of the problem and identifying wasteful steps in the process, they will identify possible solutions. The solutions must be practical and possible to implement.

Example: *Rejection of HIV viral load plasma specimens will be decreased by 20% by coordinating specimen collection and shipment times. This will be accomplished by 1) providing courier schedules to nursing staff, 2) comparing specimen collection hours with courier schedules and 3) reviewing specimen acceptability standards with laboratory users.*

- **Develop an improvement hypothesis.** This statement is a prediction of what will happen when each proposed change is implemented.

Example: *If clinic staff is aware of the courier schedule, then they will schedule patient appointments on days and times that will prevent storage of specimens prior to pick up.*

Stage 2: Do

- **Test the hypothesis.** This step is a pilot or small scale implementation of the change. During this step of the improvement process, collect data on the effect of the change. Be sure to record any problems that might have been inadvertently introduced by the change.

Example: *Visit the nurses at Zinder Clinic to review the specimen acceptability policy and courier schedule. Record the number of rejected specimens from this clinic before and after the visit.*

Stage 3: Study

- Study the results. In this step of the process, the data collected in the pilot are analyzed. The team should revisit the initial aim statement to determine if the change has had the intended impact. Unintended impacts, both positive and negative, should also be reviewed.

Stage 4: Act

- **Standardize the improvement or develop a new hypothesis.** If the analysis of the pilot data indicates that the solutions had the intended effect, the change should be incorporated in a laboratory policy or standard operating procedure. Sharing the results of the pilot study and the new policy or procedure with everyone who involved with the operation is an important step in the improvement process. However, if analysis of the pilot study indicates that the change did not have the intended effect, the team should go back to Stage 1 to develop a new hypothesis.

- **Baseline data that was not representative may have been collected.** An unsuccessful pilot should not be considered a failure. Since PDSA is a cycle, even successful trials are revisited to push further improvement.

- **Establish plans for increasing improvement potential.** The team should identify a timeline for revisiting the issue to determine if further progress can be achieved.

Quality Management Systems Essentials

Quality management in the laboratory includes accuracy, reliability and timeliness of the reports produced. Errors in the laboratory are costly and:

- Require retesting
- Cause mismanagement of patients
- Allow the continued transmission of disease
- Waste the limited resources of the laboratory

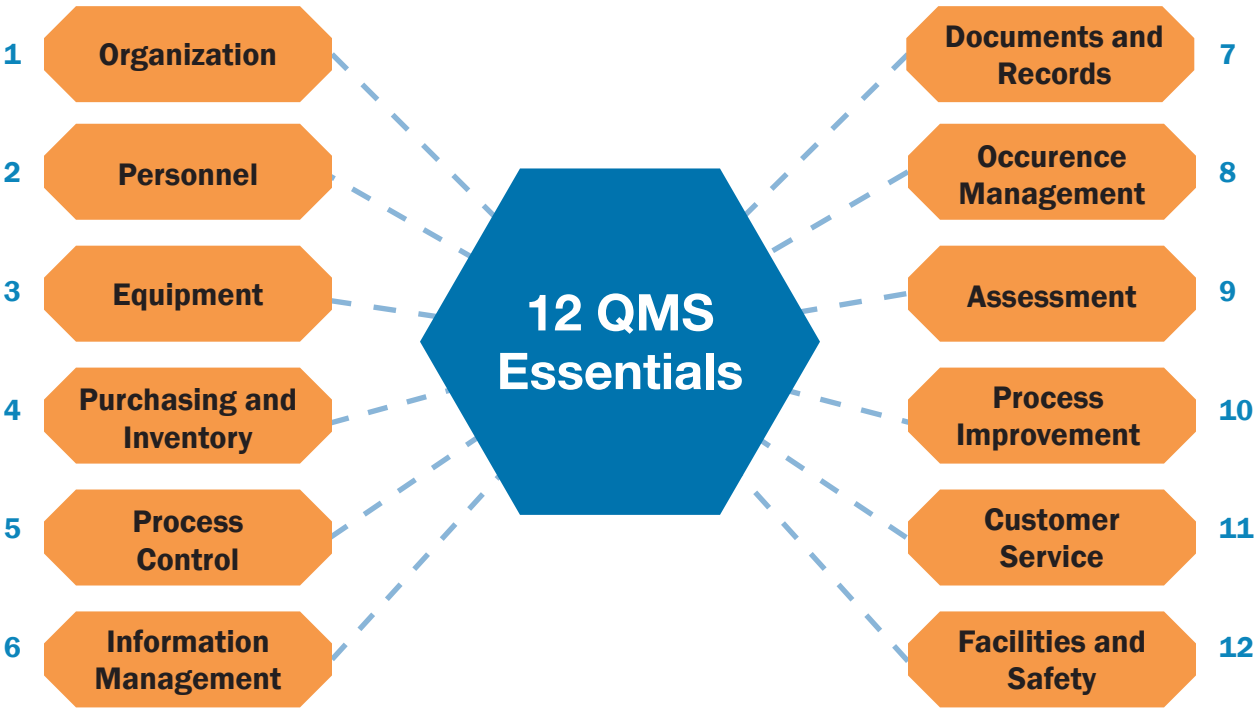
Implementing a quality management system (QMS) in the laboratory or laboratory system is more important than adding new, high technology testing. A QMS will not guarantee that testing is error-proof, but it will help detect errors and lead to prevention of future errors.

The Clinical Laboratory Standards Institute (CLSI) identified 12 essential issues in a quality management system; in International Organization for Standardization (ISO) these issues are organized into clauses. No matter how they are numbered or organized, both CLSI and ISO provide a framework for quality. Before one of these documents is consulted, check with the agency that accredits the laboratory to determine if one of the documents is required to meet accreditation standards.

Quality management includes both quality control and quality assurance. The system should also address all phases of testing — pre-analytic, analytic and post-analytic. This focus assures that the entire pathway of testing and using results is monitored and continually improved by implementation of a quality plan. The quality plan addresses each of the 12 quality system essentials. If a new laboratory leader plans to develop one quality essential or a comprehensive quality management system, they should access the *Laboratory Quality Management System Handbook* for specific guidance.

RESOURCES

- https://wwwn.cdc.gov/cliac/pdf/Addenda/cliac0907/AddendumP.pdf
- http://clsi.org/blog/2013/01/31/clsi-releases-new-guideline-on-quality-management-system/



Information Management

A laboratory information management system (LIMS) should collect, store and provide data that can influence public health policy making. Other functions include: participating in disease reporting networks, connecting with national and international surveillance systems and contributing to local, regional, national and international laboratory systems.

KEY QUESTIONS TO ASK ABOUT LIMS

- What LIMS does the laboratory use?
- What critical data that a LIMS should collect?
- How well the existing LIMS meet the laboratory and customers' needs?
- What are the developmental phases of the LIMS if new LIMS is in development?
- What is the plan when the LIMS is down?
- How frequently the data is backed up?
- How accessible and retrievable is the data?

RESOURCES

Informatics Self-Assessment Tool

- http://www.aphl.org/MRC/Documents/LEI_2013Jun_Informatics-Self-Assessment-Tool-for-PHLs.pdf

Core Competencies

Core competency guidelines summarize the knowledge, skills and abilities necessary for public health laboratory professionals to efficiently and effectively deliver the services that are essential to the functioning of a public health laboratory. Competencies for 15 domain areas were developed, three of which are essential for public health laboratory leadership to develop and promote the laboratory's culture of quality and to maximize staff's capabilities to achieve the laboratory's goals and to communicate effectively. The competencies of these areas are evaluated in a Beginner-Competent-Proficient-Expert scale. The competencies of the applicable domains are listed below.

Quality Management System

1. **Organization:** ensures the laboratory's organizational structure is committed to achieving and maintaining quality
2. **Customer focus:** ensures customer needs expectations, and requirements are consistently met
3. **Facilities and safety:** ensures the laboratory's physical environment, maintenance, and safety programs meet applicable requirements
4. **Personnel:** ensures recruitment and retention of a qualified, well-trained, and competent workforce
5. **Purchasing and inventory:** ensures requirements for supplies and services are consistently met
6. **Laboratory equipment:** ensures laboratory equipment selection, installation, use, maintenance, and troubleshooting meet performance standards
7. **Process management:** ensures operational processes meet organizational requirements
8. **Documents and records:** ensures there is an effective system to control and manage documents and records
9. **Information management:** ensures the confidentiality, security of generated and disseminated information
10. **Nonconforming event, management:** ensures processes are in place for detecting and managing nonconforming events
11. **Assessments:** ensures processes are in place to perform internal audits and external assessments
12. **Continual improvement:** ensures mechanisms for continuous quality improvement

Management and Leadership

1. **General management:** ensures sound management of laboratory operations
2. **Policy development:** ensures the development, implementation and review of internal policies
3. **Financial management:** ensures sound financial management
4. **Human resource management:** ensures effective management of human resources
5. **Leadership:** models leadership behavior

Communication

1. **Communication techniques:** deploys formal written and oral communication strategies
2. **Active listening skills:** displays active listening skills when interacting with others
3. **Comprehension of materials:** demonstrates comprehension of written documents and directions
4. **Communication technology:** utilizes technology to communicate information to internal and external partners
5. **Communication professionalism:** ensures professionalism in communication with external clients and stakeholders
6. **Professional reports:** prepares professional written reports and oral presentations
7. **Risk communication:** applies emergency and risk communication principles and techniques to explain technical information to a non-technical audience
8. **Public health laboratory value:** promotes the value of the public health laboratory
9. **Media relation:** works with the media to provide information about public health laboratories and public health issues

RESOURCE

Public Health Laboratory Competency Guidelines

“Great leaders are almost always great simplifiers, who can cut through argument, debate, and doubt to offer a solution everybody can understand.”

GENERAL COLIN POWELL

Communication

Key Points

- **Interpersonal communication**
- **Managing meetings**
- **Public communication and dealing with the media**
- **Risk communication**

Interpersonal Communication and Relationships

Effective communication within the laboratory and between the laboratory and stakeholders is important to the laboratory's success. It is essential to develop effective working relationships with staff, officials within the parent organization and with other partners and customers. There are some essential communication skills and pointers that laboratory leaders should utilize to help facilitate communication.

- Speak in a non-technical language that will be understood throughout the organization. The communication challenge for the laboratory leader is to be conversant in the technical language but able to articulate complicated science and technology to any audience.
- Craft content that is concise and without technical embellishment
- Establish a regular schedule to communicate with your staff as a whole, as well as with smaller subgroups
- Understand what information your supervisors need and find the most effective way of providing it
- Begin a dialogue, based on a core functions assessment, with laboratory clients to ascertain how well the laboratory is meeting their needs and then formulate a plan to address deficiencies
- Communicate regularly with laboratory stakeholders, understand the various agency programs and talk with program directors who utilize laboratory services and programs
- Build effective communications skills via a structured course or other means
- Consult with your public information officer to learn the rules for communicating with the media

COMMUNICATION TYPES

A communication type is a way in which one communicates needs and objectives to others. There are five types of communication important for leaders: informative, expressive, imaginative, persuasive and ritualistic.

1. **Informative communication** is used to share knowledge (hard facts). For example, describing a change in policy or a new job description. Job-related messages should be informative and examples include:

2. **Expressive communication** is an expression of personal feelings, not hard fact. Expressive communication is important in the formation of one's self-concept (for self and employee). "What do you think of yourself?"

3. **Persuasive communication** attempts to influence another person's beliefs or actions. For a leader, persuasion is an important tool. He can use persuasion to reach group consensus. One is more likely to be able to persuade someone to their way of thinking if data and facts are easily available and understood.

4. **Ritualistic communication** meets social expectations. Violation of the rules and customs of social interaction may cause offense. A ritualistic communication meets social and cultural expectations and individuals are expected to remain within the bounds of the expectations.

Communication with Staff

Effective communication helps laboratory management and bench scientists understand the leader's vision or direction, clarifies responsibilities, and ultimately improves morale and productivity. Being comfortable with the complexity of human interactions and knowing all the ways that people send and receive messages (verbal and non-verbal) is the art and science of communication.

The new laboratory leader needs to become familiar with, and familiar to, the entire laboratory staff. A staff meeting within the first few weeks of assuming a leadership role is one way to start to establish lines of communication. Laboratory leaders must find a way to make all parties feel that they have a stake in a collective enterprise, with continual opportunities to contribute to projects and develop ideas.

COMMON COMMUNICATION BARRIERS

Environmental barriers to communication include such things as being too hot or too cold. Improper dress can act as a barrier to communication. Personal hygiene and an improper use of cologne or perfume may distract and impede effective communication.

Over-communication provides too much information or repeats it unnecessarily. Clear and concise communication is ideal; under-communicating is not. Don't assume your listener knows everything and have the listener repeat the information back to you through questioning.

Inappropriate timing or the venue for communication may lead to miscommunication. Be sure private conversations are held in privacy (not in a hallway or elevator).

A distracted listener will not hear the message relayed. Listeners should be engaged and paying attention to what is being said. Speakers should ensure the listener is engaged and if not, end or delay the communication until the listener is able to pay attention.

Communication Style

There are four basic communication styles.

The Four Basic Communication Styles

1. **Concrete Sequential "Thinking"**
2. **Abstract Sequential "Listening"**
3. **Abstract Random "Creating"**
4. **Concrete Random "Doing"**

Conflict Management

Conflict is inevitable. It is in general a disagreement through which parties perceive a threat to their needs, interests or concerns. A laboratory leader can facilitate managing conflict within the laboratory organization by understanding the types of conflicts and learning strategies for resolution.

The causes of conflict are numerous and varied and may include:

- Poor communication
- Competition for resources
- Distrust and suspicion
- Qualification and knowledge
- Previous experiences
- Power and privilege
- Differences in age, gender, culture, race and ethnicity

To minimize conflict caused by managerial actions, the following steps may be taken:

1. Review job descriptions
2. Build relationships with all subordinates
3. Regular written status reports
4. Conduct basic training
5. Develop procedures for routine tasks
6. Regular management meetings
7. Anonymous suggestion box

While conflict resolution is no easy task, there are five steps that the laboratory leader may take to facilitate resolution.

1. Formulate a statement of the problem
2. Clarify dimensions of conflict
3. Brainstorm all possible solutions
4. Identify consequences of each possible solution
5. Choose mutually acceptable solution

DESTRUCTIVE VS. CONSTRUCTIVE CONFLICT

The laboratory leader must be aware of both the destructive and constructive sides of conflict.

Destructive conflict includes:

- Diversion of attention and energy to the conflict
- Emphasis of differences, demoralization of the team or individual
- Break-down of communication paths
- Making cooperation very difficult

Constructive conflict includes:

- Clears up important problems or issues
- Facilitates clear communication
- Broadens perspectives and alternatives
- Provides solutions
- Leads to involvement and understanding
- Releases emotion, anxiety and stress
- Develops skills

Leaders/managers can unwittingly cause conflict in the workplace by not communicating well, not providing clear guidance on roles and objectives, mismatching resources and expectations and being inconsistent in their leadership of the laboratory team.

Managing Meetings

Meetings are integral to coordination and management of laboratory operations and staff activities. They can help to motivate and unify a team by setting common goals and clarifying roles and responsibilities. Active meeting management can ensure that the time invested in a meeting is productive and the objectives are efficiently met.

To optimize the effectiveness of staff meetings, the meetings should:

- Be scheduled (routine)
- Have a pre-set agenda that is distributed in advance (list items to review, discuss; assign moderator/facilitator for discussion and set time limit)
- Have a defined timeframe (start and end on time to respect people's time; don't wait or recap information for participants who are late)
- Allow delivery of one-time messages
- Encourage interaction among peers
- Allow discussion of items affecting two or more persons present (assign a topic keeper and table sideline discussions for another time)
- Be documented with documentation distributed/stored (minutes)
- Address action items and agree upon action to be taken

THE THREE TYPES OF MEETINGS

1. **Informational meeting:** This usually involves an informal, short one-way communication to deliver a specific message.
2. **Process-oriented meeting:** A standing staff meeting is an example of a process-oriented meeting where knowledge and information are shared. (e.g. staff meetings, QA meeting, committee meeting).
3. **Mission-oriented meeting:** The goal of this is to reach a decision on a particular project of topic.

A meeting facilitator should be assigned in order to keep the meeting on course and moving in the right direction. A staff meeting is an opportunity for the supervisor to get different perspectives and additional data from the group. Leaders should solicit feedback and interaction among participants and should not use the meeting to lecture.

Public Communications/Dealing with the Media

An effective Laboratory System has a structure to support and maintain communication with the public and system partners. It is important to facilitate provision of laboratory services by providing accessible written guidance for testing services, specimen collection and transport, submission criteria, turn-around times and contact information. The information should be presented online through links to the laboratory's website. In addition, it is important to highlight emergency contact information. In some health departments, public health related emergencies are reported through a duty or health officer. Others may have direct emergency contact information that can be provided online through the webpage.

Health departments generally have policies in place regarding communication with the media. These policies vary, but expect that all communications will be closely controlled through the health department or, in some instances, the governor's office. Know your organization's policies for working with the media. Your public information officer (PIO) can orient you to the prevailing rules. In fact, it is probably a good idea to consult your PIO before each and every time you feel a need to speak to the media.

Learn how your department's communications hierarchy is organized and the procedures to respond to a media inquiry. Requests for interviews are typically routed through the public information office within the health agency. If the office approves a request, you may be asked to speak with a reporter.

If you are to give an interview to the media, it is critical that you take time before the interview to prepare what you want to say. Remember: The media wants to capture a story — a narrative with a beginning, middle and end. Think about what you want the reporter to convey. Did your laboratory recently detect a baby with SCID? Test well water following a massive flood? Detect the agent causing an outbreak of foodborne disease? Whatever the point, tell them a story and make it vivid by explaining how the laboratory's hard work saved a child from a lifetime of disability or helped end a nationwide outbreak of *E. coli* O157:H7. Even if you are not the one who is the media spokesperson for your laboratory, understanding what to say and not to say will benefit you in making your case for the laboratory within your agency and to the community surrounding your facility. It is also extremely helpful to participate in a risk communication and/or media workshop to hone these particular communication skills.

Even if you are not the one who is the media spokesperson for your laboratory, understanding what to say and not to say will benefit you in making your case for the laboratory within your agency and to the community surrounding your facility.

Risk Communications

The International Atomic Energy Agency (IAEA) defines risk communication as "actions, words, and other interactions that incorporate and respect the perceptions of the information recipients, intended to help people make more informed decisions about threats to their health and safety." The ability to effectively communicate risk is an important skill, particularly in the event of a public health emergency (e.g. major infectious disease outbreak or contaminated public water supply). CDC has combined crisis and emergency risk communication into a fusion called CERC that uses a basic, easy to remember principle: **Be First, Be Right, Be Credible**. All three aspects are important to gain the trust necessary to implement effective public health measures during times of stress. Training and information on risk communication is available online through CERC. Numerous other resources are available online.

RESOURCES

CDC CERC

- http://www.bt.cdc.gov/cerc/. (Quick Guide: http://www.bt.cdc.gov/cerc/pdf/cerc_guide_basic.pdf)

Johns Hopkins Center for Public Health Preparedness

- http://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-public-health-preparedness/training/online/riskcomm.html

World Health Organization

- 2001 World Health Organization (WHO). Water Quality: Guidelines, Standards and Health. Edited by Lorna Fewtrell and Jamie Bartram. Published by IWA Publishing, London, UK. ISBN: 1 900222 28 0: http://www.who.int/water_sanitation_health/dwq/iwachap14.pdf

“Management is efficiency in climbing the ladder of success; leadership determines whether the ladder is leaning against the right wall.”

STEPHEN COVEY

The Next 100 Days and Beyond

Key Points

- **Training, mentorship and succession planning to ensure a strong PHL workforce**
- **Continuous quality improvement using LEAN**
- **New technologies and research in PHL setting**
- **The role of the PHL leader in developing policies on public health issues**

Training

Ongoing training and education is essential to strengthen the skills and knowledge of all laboratorians and promote excellence in laboratory practice. There are a number of training resources available to laboratory leaders and technical staff through professional organizations, academic institutions and other agencies including, but not limited to, APHL, CDC, ASM, ASCP, FDA and USDA.

APHL sponsors education programs both independently and in collaborations with CDC. These courses generally provide laboratory continuing education credits to laboratorians and focus on priority topics of public health significance, such as hands-on training on molecular techniques, emerging infectious disease detection and laboratory biosafety and biosecurity.

APHL directs the National Center for Public Health Laboratory Leadership (NCPHLL), a resource designed to develop leaders and expand knowledge of public health laboratory management. In addition, the association also manages fellowship (such as EID) and traineeship programs that prepare laboratory scientists for a career in public health and advance the skills of mid-level professionals. Through these efforts, APHL works to ensure future leadership in public health laboratory science at a time when the number of scientists entering the workforce is dwindling. For more on APHL offerings, see page 59.

The Emerging Infectious Diseases (EID) Laboratory Fellowship program is co-sponsored by APHL and CDC. This program prepares laboratory scientists for careers in public health with an emphasis on the practical application of technologies, methodologies and practices related to emerging infectious diseases. Qualified candidates learn to support public health initiatives and conduct high priority infectious disease research in local, state and federal (CDC) public health laboratories.

CDC also provides contemporary professional development programs, training for timely transfer of new laboratory protocols, preemptive emergency response instruction and innovative training programs for the public health and clinical laboratory workforce.

RESOURCES

- www.aphl.org
- http://www.cdc.gov/labtraining

Mentorship

A mentor is defined as a trusted friend, counselor or coach who is usually a more experienced person. The primary role of a mentor is to provide guidance and support to their mentee based on his or her unique development needs. At different points in the relationship, a mentor will take on some or all of the following roles: coach/advisor, source of encouragement/support, resource person, champion or devil's advocate. A mentor will usually have a long-term, more strategic focus on the mentee's development. A primary aim is for the mentee to become independent of the mentor. An excerpt from *Coaching for Commitment: Achieving Superior Performance from Individuals and Teams, 3rd Edition*, is below.

"A mentor:

- Provides advice and support to a person who is interested in career planning or advancement
- Helps develop a person's political savvy and sensitivity to organizational culture and environment
- Provides persons with proactive approaches for managing their own careers
- Suggests an educational course of action or provides information and resources for professional development
- Tells people how to prepare so that one day they can move into the mentor's job"

MENTORSHIP QUALITIES

- Ability to be enthusiastic, positive and optimistic
- Ability to sensitive, compassionate and understanding
- To be unselfish
- To understand individual differences
- To be a good teacher and communicator
- To be able to push boundaries and point in the right direction
- To be respectful and trustworthy
- To instill confidence
- To be a sounding board and advisor
- To be unbiased
- To be knowledgeable and share experiences
- To show sincere interest
- To be a resource provider when you don't have the answers
- To be an advocate
- To be open to feedback from the mentee

As a laboratory leader it is inevitable that you will be mentoring some of your staff during your tenure. In fact, it is likely that you already have been a mentor, maybe in a formal or informal role.

GROUNDWORK FOR SUCCESSION PLANNING

1. **Maintain up to date job descriptions, with required qualifications and preferred qualifications that will enable leadership**

2. **Develop, maintain and implement a recruitment process which will include:**

   - Needs gap analysis to forecast needs for three to five years
   - Identifying individuals with leadership potential
   - Identifying formal and informal development opportunities and make them readily available for staff
   - Mentoring staff by creating opportunities for them to participate in leadership activities; allowing staff to participate in external activities such as those provided by APHL, CDC, etc.; involving staff in strategic planning, laboratory-wide leadership activities and meetings/ conferences with partners; promoting cross training; maintaining a culture where mentoring is expected and valued

3. **Identify external factors that might function as constraints**

   - Regulations that might define salary scales, job classifications
   - Hiring freezes
   - Unions, civil service systems, contractor designations that might drive personnel classification
   - Federal and state licensure laws
   - Budgets that are not flexible or sufficient to make laboratory positions attractive
   - Inadequate laboratory workforce

4. **Identify external factors that turn constraints into opportunities**

   - Career ladder traineeships
   - Exemptions to HR mandates
   - Input from other agencies to redefine employee classifications
   - University appointments to justify increased salaries

Succession Planning

The laboratory leaders are responsible for providing opportunities for personnel development. Recognizing that all laboratory leaders have an end of tenure due to retirement or resignation, succession planning is the process to prepare the current workforce to assume the duties of the leaders on a permanent or short-term basis. Succession planning requires that the current laboratory leader pass knowledge (especially institutional knowledge) onto potential successors. This exchange of information can be through informal discussion, shadowing, or assignment of responsibility for e.g. projects or representing the laboratory externally. In addition, to planning for succession, this also creates back- up personnel to step in when the directors/ leaders are not available, and assists in developing a pool of employees to whom tasks can be delegated. Succession planning is not something for a director to do when departure is imminent but throughout his/her tenure. Documenting the administrative activities that are performed as a laboratory leader can be useful for a successor to be more efficient and successful in his/her new role.

LEAN

Public health laboratories are operationally complex entities performing clinical testing, newborn screening, biological and chemical environmental and food testing, and threat testing plus associated preparedness activities. The use of LEAN tools for workflow improvement has been used in manufacturing organizations and healthcare entities, including clinical laboratories and PHLs. The application of LEAN can improve the efficiencies in various PHL processes, contribute to continuous quality improvement programs, and help to sustain improvements.

New Technology

Public health laboratories have increased their roles and responsibilities as reference laboratories with the PHL serving to rule in or rule out threat organisms, to quickly screen for chemical agents, to monitor for emerging and reemerging infectious diseases, to identify and pinpoint the source of pathogens in the US food supply, and to screen newborns for disorders that respond to early intervention. Expertise in laboratory science is critical to understand and implement the advances in laboratory testing that have occurred during this recent time.

While the PHL role to provide testing for programs that monitor diseases in the population continues alongside the traditional PHL testing such as rabies, TB and potable water analysis, now more than ever, laboratory detection and confirmation of a disease causing agent or an environmental contaminant is the cornerstone of effective control and prevention strategies. PHLs must be prepared for the unexpected because the emergence of new diseases is unpredictable. Thus, the advancement of laboratory capacity and capability through the acquisition of cutting edge instrumentation and training of personnel is necessary for PHLs to respond to emerging diseases, public health threats and emergencies inherent in monitoring public health.

Laboratory leaders need to be aware of the advances in new technology and foster an environment that encourages technical staff to bring ideas and knowledge of new testing platforms (technology) to the attention of the laboratory leader.

While the PHL role to provide testing for programs that monitor diseases in the population continues alongside the traditional PHL testing such as rabies, TB and potable water analysis, now more than ever, laboratory detection and confirmation of a disease causing agent or an environmental contaminant is the cornerstone of effective control and prevention strategies.

Research

Research is one of the core functions of PHLs, although within the scientific community, PHLs are generally not perceived as key players in the research process but rather a provider of services. Many PHLs in the US partner with other public health disciplines or academic institutions to conduct applied or practice-based research. In particular PHLs:

- Have personnel who possess expertise and skills with available resources that are applicable to the research process such as assay development and validation
- Support clinical trials, food and environmental testing
- Serve as sample repositories
- Maintain close ties with epidemiologists

Unless research is ongoing in the PHL, it is unlikely that this core function will be implemented during the early days as a laboratory leader. Some challenges include:

- A perception that PHLs provide services and do not perform research
- A culture within the agency that does not encourage participation in research
- An unpredictable fiscal climate
- Priorities and ongoing work load
- Administrative issues (e.g. grants management)

- Staffing (e.g., ability to rapidly hire specialized staff for the duration of a research project)
- Development of new skills
- Understanding of the regulations
- Access to collaborators
- Maintenance of funds once they have been obtained (i.e., they do not disappear into the general fund)
- Competition for external funds

With that in mind, it is important to examine whether your PHL can start a research program in the future and determine how to position your PHL to be competitive and successful. A needs assessment and strategic planning can start the following:

- Identify areas of expertise: what makes your laboratory unique?
- Identify champions, i.e., who will sell applied research to management, staff, policymakers?
- Assess staff skills, e.g., research experience, grant writing, published articles, etc.
- Form workgroups to guide research activities
- Identify research priorities
- Identify existing/potential partners
- Set short- and long-term priorities
- Develop marketing strategy (i.e., brochures, tours)
- Identify funding sources

OTHER RESEARCH CONSIDERATIONS

- Do you need to change the culture in your laboratory?
- Is legislative authority required to perform the research?
- How are fiscal issues handled in your agency? (This includes indirect costing, use of state resources for research, timelines for applying for funding; administrative infrastructure for regulatory issues (IRB, IACUC), grants management, contract development, intellectual property)

If research is going to be a new venture for your PHL, it is important to start small and build gradually but strongly. Research will give the PHL many advantages including a rich scientific environment, opportunities to grow in different areas of science, career opportunities for your staff, fiscal growth and fiscal flexibility. Research can help PHLs establish themselves as significant players in the community, and with academic and industrial partners.

Policy Development

Creating policy, even in the best of conditions, is an arduous task. Communicating complex science in a manner that all parties involved understand is not easy. To avoid unintended consequences, the laboratory leader must play a role in the development of regional and national (at times international) policy. Some methods to profile the institution and operations in a manner that is effective for creating or informing policy include:

- Generating scientific evidence that informs public health practice and law
- Monitoring the impact of public health laboratory practice on health outcomes
- Serving as centers of expertise, reference and resources in the areas of biological, chemical and radiologic issues of public health importance
- Participating in the development and evaluation of standards related to the operation and performance of laboratories involved in public health testing
- Advocating for the use of sound reasoning in the application of laboratory science and system infrastructure sustainment
- Engaging in strategic planning at local, regional and national levels

> **“Laboratory leaders today are positioned to bring public health lab science to new heights that can boldly shape public health outcomes across the globe.”**

SCOTT BECKER, MS, EXECUTIVE DIRECTOR, APHL

APHL: Your Laboratory Resource

As a public health laboratory leader, APHL is your professional association. Its founding members are directors of state and territorial public health laboratories, and members today include laboratory leaders representing public health laboratories at all levels (local, state and national), as well as state and local funded environmental and agricultural laboratories.

During its half century of service, APHL's broad mission has remained unchanged: to safeguard the public's health via leadership-through-science. To this end, the association works to advance laboratory systems and practices and to promote policies that will strengthen its members' ability to carry out core functions such as disease surveillance and emergency response.

In addition to providing specific services (such as "wet" workshops) for laboratory staff, APHL is your link to the policy world. The association conducts research on the status of public health laboratories and disseminates its findings in reports, briefs and web articles. It issues statements on pending legislation and regulations, provides expert testimony, comments on proposed rulemaking and disseminates educational materials on priority issues. APHL offers authoritative information on public health to policymakers, the media, health organizations, government agencies and others.

- Read a copy of the APHL Member Handbook
- Consider joining an APHL committee (the committee application period opens each spring)
- Attend a new director orientation program, the annual meeting and other association-sponsored events
- Attend and encourage staff to attend APHL training and conferences
- Email membership@aphl.org or call APHL's membership department at 240.485.2733

APHL'S HALF CENTURY OF SERVICE

PHL's predecessor organization, the Association of State and Territorial Public Health Laboratory Directors (ASTPHLD), was formed in 1951. ASTPHLD provided a forum for state public health laboratory directors to meet annually to discuss scientific and administrative issues. CDC supported the association by hosting the majority of meetings, providing speakers for the program, and giving financial and administrative support.

Just as CDC was transformed into a more comprehensive agency, with the infectious disease and laboratory sections comprising only a portion of its organization, so did ASTPHLD change. This change resulted from CDC's decision to outsource part of its mission to support state public health laboratories. The mechanism was a cooperative agreement, developed in 1989, whereby CDC provided financial support for an APHL headquarters, thus permitting the organization to carry out many functions not possible with the limited administrative support available to ASTPHLD.

The APHL Member Handbook: Your Key to the Association

If you don't already have one, get a copy of the APHL Member Handbook. The handbook can be found on APHL's website in the Membership section. It describes all of the association's activities in some detail. Sections of particular note are "Member Services" and "Affecting Change." The first explains what APHL can do for you; the second explains how you can help set association priorities and policy goals. This brief section of the Practical Guide does not attempt to duplicate the Member Handbook. Rather, it highlights items that may be of particular relevance to new laboratory leaders.

APHL Committees: A Forum for New Ideas

Much of the association's work — special studies, policy statements, international technical assistance, etc. — is initiated through its 14 committees. Committee membership offers the opportunity to advance issues of particular importance to members, to network with peers and to gain a measure of national recognition.

Committee appointments are for one year, from July 1 to June 30. Each spring, APHL notifies all members of the open application period, during which members can apply to serve on one or two committees. All appointments — including that of committee chairs — are made by the incoming association president.

Some committees have subcommittees, and there are short-term, ad hoc task forces and workgroups are sometimes established during the year when a special need arises. Again, appointments are made by the president (or in some cases through the association board of directors). Finally, the president may appoint members to serve as liaisons with external organizations.

Yearly Events

While APHL offers numerous member events throughout the year — from technical conferences and colloquia to training programs — three are worth special mention. The association's three-day annual meeting and government environmental laboratory conference is held in a different city in May or June. This meeting provides a regular opportunity for members to meet face-to face with one another, stakeholders and partners. It features a keynote session, member-planned general sessions, exhibits and a business meeting. APHL facilitates an Ambassador Program, linking first-time attendees and new laboratory directors with an "ambassador."

Most years, APHL's National Center for Public Health Laboratory Leadership (NCPHLL) hosts an orientation program for new public health laboratory directors. This program is designed to acquaint new directors with the resources available from APHL and CDC, to foster ties among those in the incoming cohort of new directors and to link new directors with experienced public health laboratory leaders.

APHL's annual spring Hill Day is a key element of a broader effort to educate lawmakers about the value of public laboratories as Congressional and national resources. Members are invited to visit members of Congress who serve on the committees most directly responsible for programmatic and appropriations decisions affecting public laboratories (and are briefed by the association's senior director for public policy on key messages to deliver).

Overview of APHL Activities

Leadership Development

APHL directs NCPHLL, established in 2002, to develop leaders and expand knowledge of public health laboratory administration. Activities include a risk communications workshop, an orientation program for new laboratory directors and leadership forums on timely issues.

NCPHLL laboratory assessments bring a team of experts on-site to evaluate the effectiveness of laboratory activities relative to core PHL functions and to document operational changes and enhancements that will improve the laboratory's overall performance.

Laboratory Training

APHL offers low-cost, high-quality laboratory continuing education programs on critical issues in laboratory science, presented by expert faculty. Most of the programs and conferences offer continuing education credit for laboratory scientists, as well as CPH re-certification credit. Types of training include webinars, online courses and programs offered in conjunction with federal agencies. APHL programs provide multi-day hands-on workshops and offers public health laboratory based fellowships for beginning and mid-level professionals.

APHL ADVISORY COMMITTEES

- Biosafety and Biosecurity
- Environmental Health
- Environmental Laboratory Science
- Food Safety
- Global Health
- Infectious Disease
- Informatics
- Knowledge Management
- Laboratory Systems & Standards
- Newborn Screening & Genetics in Public Health
- Public Health Preparedness & Response
- Public Policy
- Workforce Development

Member Recognition

APHL's national awards program recognizes leaders for lifetime achievement and for specific contributions to promote excellence in the public health laboratory field. In addition, there is an award for the healthiest laboratory.

Technical Assistance

APHL is both a member resource center and a liaison among member laboratories, federal officials and other partners. The association researches and responds to inquiries, represents members at national forums, and provides guidance on federal protocols and directives. Additionally, APHL advises federal agencies on development and implementation of national health initiatives that involve public health laboratories. APHL is extremely active in the Global Health arena, providing technical assistance overseas.

APHL Consulting Services is ready to assist your laboratory with anything from quality management assessments to information systems implementation. Visit www.aphl.org/consulting.

Laboratory System Improvement Program (L-SIP)

Dedicated to advancing the vision of APHL which is a healthier world through quality laboratory systems, L-SIP provides a way for APHL members to engage stakeholders and assess the quality and efficiency of their services.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Association of Public Health Laboratories

The Association of Public Health Laboratories (APHL) is a national nonprofit dedicated to working with members to strengthen laboratories with a public health mandate. By promoting effective programs and public policy, APHL strives to provide public health laboratories with the resources and infrastructure needed to protect the health of US residents and to prevent and control disease globally.

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