COLA'S Summer Edition 2023

inSIGHTS

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LETTER FROM THE CHAIR

SUMMER EDITION 2023

I am Keith Davis, MD, FAAFP, the new Board Chair of COLA Inc. I have worked as a family physician in rural/frontier Idaho, working in a Federally Qualified Health Center (FQHC) and previously the Laboratory Director of a POL in an Independent Rural Health Clinic (RHC).

In this edition of inSights, we emphasize the impact that organizational culture has on the laboratory workforce. Fostering a positive organizational culture is paramount in combatting employee burnout and retaining talented personnel. Laboratory professionals demonstrate exceptional dedication, even in the face of challenging workloads and tight deadlines. Establishing a supportive, inclusive culture that values employee well-being can significantly reduce employee burnout and improve the laboratory's overall quality.

In the following pages, you will find articles on important topics relating to culture and quality. Organizations can create an environment that improves patient care outcomes and attracts and retains talented professionals by prioritizing employee well-being and promoting effective leadership within the laboratory. In the face of the laboratory workforce shortage, we must all work together to build a culture that recognizes and supports the needs of laboratory professionals.

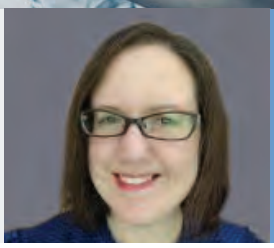
We hope this edition of inSights is a valuable resource for your laboratory. Please share your thoughts with us by reaching out by email at learn@cola.org.

Keith Davis, MD, FAAFP
Chair, COLA Board of Directors

Organizational Culture

By: Jennifer MacCormack, MLS (ASCP) CM

Jennifer is an experienced science and medical writer with a background in clinical laboratory testing, medical & health science and regulatory oversight. She received her Bachelor of Science in Physiology from McGill University.



What Creates Organizational Culture?

Organizational culture can be defined in varied terms. It's the atmosphere of the workplace. It's the relationships between colleagues and interactions with leadership. It's how employees feel every day when they get up and go to work.

Workplace culture is foundational to employee retention, engagement and motivation. A positive culture makes employees want to remain with the organization long-term and even invite friends to work there. On the other hand, a hostile or toxic culture can drain employees' morale to the point where they put in minimum effort on the job while looking elsewhere for work.

Responsibility of Leadership

In many ways, leadership sets the tone of the organizational culture. They ensure the implementation of the organization's mission and core values, which are the backbone of the culture. They define long-term goals for the organization and establish policies and procedures that support those goals. These can include policies around work-life balance, training and development, paid time off and employee recognition; all of these contribute to the general culture of an organization. Do employees have a reasonable work-life balance? Do they feel valued and feel their concerns are heard by their managers? Can they be themselves at work without fear of judgment?

Management styles also come into play in the development of workplace culture. For example, a manager with an authoritative leadership style operates very differently than one with a transformational leadership style. A manager's preferred leadership style establishes the team's tone and can affect how employees perceive and interact with them.

> However, in the medical laboratory, leadership can extend beyond formal titles and the management hierarchy.

Building a Culture From the Roots Up

All employees – not only managers and supervisors – can find multiple opportunities to exhibit leadership qualities in the workplace. Recognizing those qualities, developing them and using them to nudge culture in a positive direction can contribute to the overall success of the team and organization.

Every person on the team can help to build a positive culture by regularly collaborating with their colleagues and maintaining open and honest communication. Sharing successes and failures can strengthen the team and improve camaraderie, encouraging more employees to open up and contribute. Lack of communication can hinder good teamwork when people make assumptions or jump to conclusions without asking clarifying questions. Laboratory staff can avoid this by shifting their perspective in a positive direction and believing that everyone is trying to do their best. This mindset, where team members are inquisitive instead of accusatory and collaborative instead of resentful, builds a positive culture. Small changes can make employees feel seen and included in their work environment. Knowledge-sharing and professional development can also improve culture by encouraging everyone to participate in educational activities and by supporting a growth mindset. Combine communication and knowledge-sharing by hosting regularly scheduled short meetings or huddles run by different personnel.

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This can be an opportunity to share something new; for example, information gained from a webinar or conference or a discussion of a recent problem encountered in the laboratory, including the troubleshooting steps and root cause analysis that led to a solution. Sharing ideas for process improvement in the laboratory benefits everyone and encourages a culture where everyone's ideas are heard and valued.

Team members eager to be mentors or trusted resources for others, especially newer employees, demonstrate leadership qualities and help foster a culture of support and growth within the laboratory. By providing guidance and assistance, personnel can empower each other to reach their full potential in the laboratory and feel connected to the organization's mission.

Collaboration *outside* the laboratory is also a way to build a culture of connection and break down "silos" within the organization.

Laboratory staff who participate in committees and cross-departmental projects can be ambassadors and improve communication between the laboratory and other areas of the organization. It can also represent grassroots efforts to bring awareness to medical laboratory science.

Small Changes Make a Difference

While management and leadership set the tone for the organization's culture, each employee can shape the workplace culture into a positive one. Making small changes can not only benefit a person's well-being by creating a happier work environment but also enhance the productivity and success of the entire laboratory team. By consciously supporting open communication and collaboration, promoting inclusivity and embracing a growth mindset, employees can create an environment where team members feel valued and shared goals of the organization are met. Small cultural shifts over time will also benefit future laboratory staff.

Small cultural shifts over time will also benefit future laboratory staff.

If the laboratory becomes known as a great place to work, there is likely to be an increase in the number and quality of applicants for open positions. At the same time, existing talent is more likely to grow within the organization and continue supporting the mission and goals of the organization.

Email learn@cola.org
or reach out to us on social media to tell us what you are doing to support a positive culture in your laboratory.
We'd love to hear how you are leading change!

Creating a Staffing Plan and Staffing Model

By: Kathy Wilson, HT(ASCP)QLS CM

Ms. Wilson is a ASCP certified Histotechnician with the ASCP Qualification in Safety. She has over 45 years total experience in the laboratory to include the clinical laboratory, EMT, autopsy diener, Histotechnician, inspection processes and progressive leadership experience culminating in operations and project management. Prior to joining COLA, Ms. Wilson was the Operations Manager for Anatomic Pathology and was a key member of the laboratory operations team, Safety Officer and Safety Committee Chair, for local and regional laboratories at Clinical Pathology Laboratories in Austin, Texas. Safety, regulatory compliance, quality and project management have always been key areas of interest. Ms. Wilson is a member of the National Society of Histotechnology and serves on the convention committee and program team.

Staffing shortages impact patient care and patient safety, employee morale and well-being, and overall staff and patient satisfaction. Finding and retaining qualified employees has been a challenge for all of us.

Whether you run ten tests or millions of tests per day, understanding your numbers and building a well-informed staffing plan and staffing model will help you maintain appropriate staffing levels, provided you can recruit and hire staff.

Staffing Models: A Real-life Example

Shortly after taking on the management of a large ,high-throughput laboratory, I was asked over and over by leadership why we had so much overtime, since we had "plenty of staff." Despite over 250 hours of overtime per pay period, equal to three full-time employees, we weren't meeting the expectations of the pathologists and clinicians who were our customers. In addition, I had very unhappy employees on three shifts; employees were burnt out and exhausted. I knew I had to assess the department's staffing and make the right decisions for the team.

My assessments included all sections of the department. I reviewed data by shifts and by assignments, both technical and non-technical. I spent time in the laboratory on all three shifts, making observations about laboratory processes from specimen receipt through reporting, to ensure I understood every aspect of every job and task being performed. I assessed staffing vs. workload/volumes, including productivity per employee, by the hour.

I also performed a thorough financial review. I determined the cost of running three shifts including the less obvious costs such as shift differentials and employee benefits. I investigated whether we could reallocate any technical responsibilities to non-technical staff to save costs. I also assessed how vacation and sick time was accrued, how much each employee had accrued, and what staffing would be necessary to cover scheduled absences and vacation days. I reviewed historical data and developed a staffing model based on all of the above.

When my assessment was complete and my staffing model ready, I met with senior management to share my findings. My statement to the President and Chief Financial Officer was short: I told them that based on my staffing model with proven productivity standards, the laboratory had never had enough staff, ever, to get the job done efficiently and meet customer expectations without overtime. I demonstrated how they could staff properly, re-assign tasks and reduce overtime. Additionally, these changes could stabilize the department, allow the laboratory to take on additional volumes and improve the customer experience. The staffing model I created is still in use today, and modifications are made as needed to meet the laboratory's needs as they change over time.

This table shows the difference in key factors before and after the staffing model was implemented:

	BEFORE	AFTER
Overtime per pay period	250 hours	0-10 hours
Shifts covered	3 shifts Monday-Friday	3 shifts Monday-Friday
Weekend coverage	Full shift Saturday	Saturday STAT coverage
Slides submitted to pathologists	By 2pm	By noon (95% by 10am)
Employee satisfaction	Low	High

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With the implemented changes, the laboratory saved approximately $95,000 annually in overtime costs alone.

Staff were less stressed during their work shifts and were able to be more productive because they were not exhausted from taking on so much overtime. In addition, morale improved as staff were not feeling pressured to sign up for overtime shifts and felt more supported by leadership.

What Affects Staffing Needs?

When developing a staffing plan and model, it is important to understand your organization's goals. You may be in a facility that already has established financial and strategic goals, or you may be given the opportunity to establish your laboratory's own goals. In either case, it is important to ensure that the laboratory is represented when facility goals are developed, so that the goals for the laboratory are realistic and achievable.

Employer expectations and goals will vary depending on the type of facility.

Laboratories may be small or large, and can be located in physician offices, hospitals or external sites such as regional specialty or reference laboratories. Schedules will also vary, depending on the number of days and shifts that must be covered weekly and whether staff rotate between shifts, benches or physical locations. Turn-around-time expectations differ between routine, priority and STAT testing. Keep in mind that automating the laboratory's testing does not necessarily translate to a reduction in staffing. With automation comes validation, quality control, calibration, maintenance and troubleshooting – all of which require well-trained personnel. While the testing process itself may be more efficient with instrumentation, the time saved ends up being allocated to other tasks.

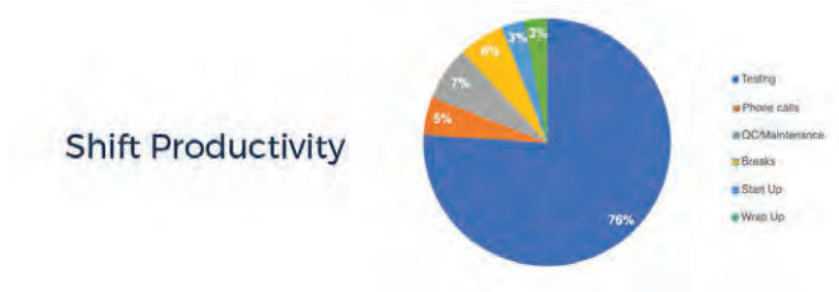
Developing a Staffing Plan

Analyze current state	Set Goals	Address the gap
• Workload • Staff responsibilities • Turnaround times • Costs • Time spent on tasks	• Budget • Productivity • Shift coverage • Turnaround times • Customer satisfaction	• Redistribute workload • Hire or cross-train staff • Standardize and streamline workflows • Consider automation

To develop a staffing plan, you must first assess your current situation, which will include collecting data. Identify all laboratory processes, their costs and the time required to complete each step. Assess your current personnel roster: are there enough people trained on the right tasks to fill required shifts, complete the current workload and handle coverage for vacations and absences?

Next, determine the goals for your staffing plan. Who are your customers and what are their expectations for the laboratory's turnaround time? What is your budget? What positions must be filled for which shifts, and by what level of personnel (technical or non-technical), in order for the laboratory to operate optimally?

Finally, develop a plan to fill the gaps. This can include hiring new personnel or cross-training personnel you already have. You may redistribute workload so that more tasks are performed by non-technical personnel so the technical staff are freed up for more complex work. Work with staff to develop more streamlined workflows and eliminate duplication of efforts wherever possible. Be realistic: what is a reasonable level of productivity to expect from staff? Remember that their daily workload includes more than running tests. You must account for breaks, start-up, wrap-up time at the end of a shift and any other tasks that are part of their usual day. Build that time in when deciding how many people you will need to cover each shift.



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Developing a Staffing Model

A staffing model is a long-term plan developed from your staffing plan and needs. Staffing models provide evidence of a laboratory's staffing needs and provide guidance for recruiting and hiring. The key to building a staffing model is to know your numbers – all of them. Collect data and analyze it carefully to determine how many people you will need.

- **Productivity standards:** tests per hour
- **Testing volumes:** broken down to number of tests per shift and/or tests per employee, including testing involved in usual QC and maintenance, manual or automated
- **Time:** how long each step takes, from accessioning to entering results (both technical and non-technical steps)
- **Cost per test:** include supplies (e.g., pipettes, gloves, tubes), reagents, kits, QC, proficiency testing and specimen transport
- **Personnel cost:** include wages (including overtime, as applicable), benefits, differentials and responsibilities for technical and non-technical staff

Note: Your human resources department can generally give you a percentage to use for benefits on top of an hourly wage or salary (e.g., 33%)

Once a staffing model is developed, it can be reassessed as needed when circumstances change in the laboratory. For example, if additional testing is added to the laboratory's test menu, or if a laboratory previously operating Monday through Friday now needs testing performed over the weekend.

Presenting Your Case

If you are developing a staffing plan as a response to ongoing staffing shortages, be sure to emphasize the many negative effects of long-term understaffing. Not only does it cause inefficiency and lower productivity in the laboratory, but running things with too few personnel can also compromise turn-around-time expectations, resulting in loss of business. In addition, the impact on employee health and morale is significant: burnout can result in errors and injury, and illness can lead to increased absenteeism or use of long-term medical leave. Ultimately, low morale and burnout can lead to employee resignations.

Be prepared to present your case by carefully developing your staffing plan and staffing model and comparing the current state of the laboratory with what could be possible if the model is implemented. If you're considering reorganizing staff and reassigning tasks to non-technical personnel, be realistic about what can be delegated.

Test complexity dictates the qualifications of laboratory personnel, so ensure you have sufficient – and sufficiently qualified – technical staff to manage the laboratory's workload. When preparing justifications, be confident in your decisions and data. Seek and acquire approval to implement your plan.

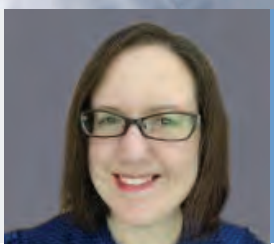
Finally, once you've recruited and hired competent and qualified staff, keep them!

Employees will leave positions for sign-on bonuses, better pay or benefits, opportunity for advancement, flexibility and work-life balance. Recruiting and hiring is an expensive process; companies may want to reconsider their offerings to be more competitive in the job market and assess what is necessary to retain good employees.

Coming Back From Burnout

By: Jennifer MacCormack, MLS (ASCP) CM

Jennifer is an experienced science and medical writer with a background in clinical laboratory testing, medical & health science and regulatory oversight. She received her Bachelor of Science in Physiology from McGill University.



Professional burnout is undoubtedly a familiar concept for our inSights readers. Even before the COVID-19 pandemic took its physical and emotional toll on medical professionals, staffing shortages and overwork had affected the clinical laboratory for some time. Many articles have been written about the impact of burnout on physical and mental health, and how it can affect team morale and job performance. However, it's essential to recognize that the adverse effects of burnout extend beyond the laboratory walls and can affect the quality of patient care.

Burnout and Patient Care

Burnout in the clinical laboratory can decrease the quality and accuracy of test results, increase turnaround times and reduce laboratory safety and efficiency. All of this has a direct downstream effect on the quality of patient care.

Laboratory work requires significant concentration and attention to detail, but a disengaged mind is easily distracted. Exhausted, overwhelmed and overworked laboratory professionals may be more prone to errors in critical areas such as sample identification and data entry. Specimen mix-ups, missed steps in manual tests and incorrect transcription of results into the computer are common sources of error.

The laboratory's Quality Assessment Plan likely has measures in place to minimize such errors.

Still, mistakes are more likely when staff cannot focus on their work due to fatigue and burnout. Incorrect results caused by inattention during testing can lead to misdiagnoses or delayed treatment, potentially compromising patient safety and health outcomes. Lack of focus can also lead to shortcuts or non-compliance with laboratory policies and regulatory standards. For example, rushed testing personnel may neglect to complete required documentation, potentially affecting the laboratory's accreditation status.

The laboratory's efficiency and productivity are also affected when staff are burned out. Fatigue, lack of motivation and emotional exhaustion can affect the speed and accuracy of testing and extend turnaround times. Mistakes can lead to re-work and may require additional specimens to be collected from patients. Longer turnaround times for test results can lead to delays in diagnosis, treatment and patient management.

Burnout can also significantly affect communication and collaboration within the laboratory team.

Fatigued laboratory staff may have a difficult time effectively communicating important information to the next shift, which could cause breakdowns in continuity. For example, tired laboratory personnel need to accurately describe troubleshooting steps they have already taken for an instrument problem, then the next shift may repeat some of those steps unnecessarily, wasting time and delaying patient testing. Communication with other healthcare professionals may also suffer, leading to department misunderstandings and frustration.

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What Can Individuals Do?

Laboratory personnel are used to being stretched thin. Overtime shifts often necessary, and laboratory budgets are often tight, leading to a need to "do more with less." While resilience and commitment to work are both commendable traits in laboratory personnel, it is important that this does not go too far; when burnout is seen as a source of pride, the quality of the laboratory can suffer.

Managing boundaries is important to conserving energy and mental health: one person cannot carry the burden of the entire laboratory alone. Airline safety videos instruct passengers to put on their own oxygen masks first, before attempting to assist anyone else. This concept translates well to any clinical laboratory where burnout may be imminent. It is difficult to succeed as a functional team if the individuals on that team are pushing themselves too hard. For example, a person who takes on too many overtime shifts and needs to get enough sleep will not perform at their best, ultimately hurting the team. Time off from work can help reset and recover, but often, staff foregoes taking days off because of worry that the team is being left to work short. However, it is much easier for a team to endure one or two short-staffed days while a coworker takes a break than to work understaffed for months after a coworker leaves the job due to chronic stress.

Knowing one's value and impact as a clinical laboratory professional can also help to push back the apathy of burnout. Engaging in continuing education and other professional development activities can be valuable if time allows. Staying updated with advancements in the field and exploring new areas of interest can contribute to a greater sense of purpose.

Engaging in team learning opportunities can also help build support systems among colleagues and foster camaraderie.

Organizational Responsibility

It's important to note that while individual strategies can help alleviate burnout symptoms in the short term, organizations must address systemic issues to effect widespread and sustainable change. There are many ways for management and leadership to reduce burnout in the laboratory. Keeping the lines of communication open between staff and leadership is important to reduce friction and resentment. Staff must advocate for themselves and their colleagues and bring issues to management's attention.

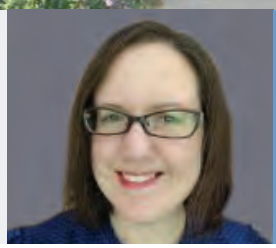
Conversely, employee engagement can improve when management shows empathy and maintains transparency about their plans to address staff concerns.

When individuals and organizations work together to address healthcare burnout, everybody wins—especially the patients.

Taos Picuris
InSights Interview

By: Jennifer MacCormack, MLS (ASCP) CM

Jennifer is an experienced science and medical writer with a background in clinical laboratory testing, medical & health science and regulatory oversight. She received her Bachelor of Science in Physiology from McGill University.



Laboratories operating in extreme environments sometimes have difficulty maintaining optimal environmental conditions and remaining within instrument manufacturers' parameters for temperature and humidity. We interviewed one such laboratory for this edition of inSights, to understand the problems that they face and the innovative solutions that they implemented.

The Taos Picuris Service Unit (TPSU) is an Indian Health Services clinic located in Taos, New Mexico. The city of Taos is in an arid climate and sits at an elevation of over 6,900 feet. Temperatures can vary considerably between day and night, and humidity varies over the course of the year. We spoke with Brandee Findley, MLT(ASCP), current acting laboratory supervisor, and Kenzie Dean, MLS(ASCP) about their experience managing environmental conditions at the Taos Picuris Health Center laboratory.

Can you tell us a little about your laboratory and some of the challenges that you have faced operating at a high altitude in a desert environment?

The TPSU laboratory employs two full-time staff members: one MLS and one MLT. We serve all eligible Native American patients in the area. Our laboratory is a small moderate complexity laboratory. We offer basic chemistry services on the Roche c311, with 29 tests in-house. We also offer CBCs, erythrocyte sedimentation rate, urinalysis, and Cepheid 4-Plex testing.

Maintaining appropriate humidity and temperatures in the laboratory to meet manufacturers' recommended guidelines for testing is very difficult in the Taos, NM region.

Your COLA Surveyor noted that you performed a study to determine whether the humidity levels in the laboratory were affecting your test results. Can you tell us what made the laboratory decide to perform this study?

Getting the required humidity to stay within the range set by the manufacturer of our chemistry analyzer is quite difficult and costly. In a high-altitude desert environment, it is common in the winter for indoor humidity to be in the low 20% range. We found ourselves logging daily that humidity was low for our analyzer, but Quality Control (QC) was in control. We continued to do this for a few months while we looked for other options to get our humidity up.

We brought in multiple small humidifiers and ran them around the lab, but the only way that you could get a change in humidity using them was to aim the humidified air directly at the hygrometer. Doing this in the winter, one could raise the humidity in close proximity to the chemistry analyzer to the low 30% range.
It was determined that the only way to actually get the humidity up consistently throughout the whole space was to have a large commercial humidifier installed.

This humidifier would be mounted permanently in the lab with a direct water source and drain.

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The laboratory space is small here and already quite loud with the equipment that we are currently running. We discussed the issue with maintenance and the Albuquerque Area Laboratory Consultant Vanessa Vicenti. To install the humidifier would take a fair amount of time and we decided to come up with a more manageable solution for our laboratory in the meantime.

Kenzie suggested that we perform a validation study to prove that we are experiencing the same random variation in our QC when the humidity is within the appropriate range and also when the humidity is too low.

Was it challenging to get key stakeholders' buy-in to conduct your study?

We felt that for the most part our key stakeholders were our Laboratory Director, Paige Gerling, MD, and Clinical Consultant, David Alan Miller, MD. We did reach out to Dr. Miller to discuss what it would look like to set up such a validation study. He advised us to keep it simple: find 20 days where humidity was naturally high and track the QC variances that occurred on those days, then find an additional 20 days with low humidity and track those too.

Once the study was completed, both Dr. Gerling and Dr. Miller were happy to approve it.

What was involved in performing the study and how long did it take?

It was pretty easy really, because we are a laboratory. We have been tracking our humidity every day for years as well as performing our QC on a daily basis and tracking it. We decided to go with a 20-day testing period where the humidity was in the appropriate range and pull all of our QC logs from that time period. We did the same with a 20-day testing period where the humidity was lower than the manufacturer-recommended range.

All data was put into a spreadsheet comparing low humidity days on the left of the spreadsheet to high humidity days on the right. All QC results as well as low or high trending arrows were included for each date. Once all data was entered into the spreadsheet, it clearly showed that it was unlikely that humidity was affecting QC results as long as the QC samples are placed on the analyzers and processed in a timely fashion.

Did the implementation of the study allow for the professional development of staff? Were they able to learn different skills?

Personally, I had not ever completed a study like this and thought that it was an interesting way to break down the data that we collect on a daily basis and look at the trends. It made me see how validations can be a valuable tool for the laboratory.

What were your findings from the study, and what actions did you take as a result?

We found that we are going to have daily variances in the QC regardless of indoor humidity levels. As long as samples are put on and tested right away, humidity should not be a major factor impacting testing at TPSU.

How did this affect your laboratory operations and patient care?

It made us more confident in what we are doing as laboratorians.

Also, performing this study has allowed us to save a lot of money. As a result of this study, we have decided that we do not need to install more equipment for humidification in the lab. This study is also now being recreated at other Albuquerque Area Indian Health Services laboratories.

What is your advice to other laboratories facing challenging obstacles unique to their environment?

Don't be afraid to think outside of the box and always listen to suggestions made by colleagues. Even if it is not the perfect solution it opens a dialogue to help find the correct solution.

From left to right:
Kenzie Dean, MLS(ASCP);
Brandee Findley, MLT(ASCP);
and our Laboratory Director Paige Gerling, MD.

Writing a Chemical Hygiene Plan

By: Kathy Wilson, HT(ASCP)QLS℠

Ms. Wilson is a ASCP certified Histotechnician with the ASCP Qualification in Safety. She has over 45 years total experience in the laboratory to include the clinical laboratory, EMT, autopsy diener, Histotechnician, inspection processes and progressive leadership experience culminating in operations and project management. Prior to joining COLA, Ms. Wilson was the Operations Manager for Anatomic Pathology and was a key member of the laboratory operations team, Safety Officer and Safety Committee Chair, for local and regional laboratories at Clinical Pathology Laboratories in Austin, Texas. Safety, regulatory compliance, quality and project management have always been key areas of interest. Ms. Wilson is a member of the National Society of Histotechnology and serves on the convention committee and program team.

Writing or maintaining a Chemical Hygiene Plan (CHP) for your facility can be a daunting task, especially for new laboratories

OSHA's Occupational Exposure to Hazardous Chemicals in Laboratories standard (29 CFR 1910.1450), referred to as the Laboratory Standard, describes mandatory safety and health standards for the laboratory including the mandatory elements of a Chemical Hygiene Plan.

The laboratory's CHP is a written plan defining the policies and procedures that protect workers from the health hazards associated with any hazardous chemicals used in their particular workplace.

According to OSHA, a hazardous chemical is any chemical that is "classified according to its potential to cause one of the following hazardous effects: acute toxicity (any route of exposure), skin corrosion or irritation, serious eye damage or eye irritation, respiratory or skin sensitization, germ cell mutagenicity, carcinogenicity, reproductive toxicity, specific target organ toxicity (single or repeated exposure) or aspiration hazard".

Each laboratory covered by the Laboratory Standard must appoint a Chemical Hygiene Officer (CHO) to develop and implement a Chemical Hygiene Plan. A designated Chemical Hygiene Officer must be qualified, by training or experience, to provide technical guidance in developing and implementing the requirements of the Chemical Hygiene Plan. The Chemical Hygiene Officer's contact information must be readily available to personnel.

The Chemical Hygiene Officer's responsibilities include:

- Developing and implementing the appropriate chemical hygiene policies and practices
- Managing the procurement, use, storage and disposal of chemicals in the laboratory
- Ensuring that audits are regularly performed
- Assisting in planning for upgrades to facilities
- Advising administrators on improvements to chemical hygiene policies and practices

Other duties may also be assigned to the CHO by the Laboratory Director.

Additional defined roles and responsibilities for activities described in the Laboratory Standard can be found in OSHA's Laboratory Safety Guidance.

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What Are the Requirements of a Chemical Hygiene Plan?

1. Standard operating procedures

2. Criteria that the employer will use to determine and implement control measures to reduce worker exposure to hazardous materials,

- Engineering Controls
- Personal Protective Equipment
- Hygiene Practices
- Selection of additional control measures for extremely hazardous materials

3. Requirements for fume hoods and other protective equipment

- Measures to be taken to ensure proper and adequate performance of protective equipment, including, as applicable, annual preventative maintenance and certification

4. Requirement for prior approval of laboratory procedures

- Defines the circumstances under which a particular laboratory operation, procedure or activity requires prior approval from the Laboratory Director before being implemented

5. Designation of personnel responsible for implementation of the CHP, including the assignment of a Chemical Hygiene Officer

6. Provisions for additional worker protection to be used when working with particularly hazardous substances

7. Information for workers:

Personnel must be provided with information and training on the hazards of the chemicals present in their workplace. Training must be provided at the time of initial assignment in the workplace and prior to new assignments involving potential new exposures. Employees must know:

- The content of the OSHA Laboratory standard and appendices
- The location and availability of the Chemical Hygiene Plan
- Permissible exposure limits for OSHA regulated substances or recommended exposure limits for other hazardous chemicals where there is no applicable standard
- Signs and symptoms of exposures to hazardous chemicals in the laboratory
- The location and availability of references such as Safety Data Sheets regarding the hazards, safe handling, storage and disposal of hazardous chemicals used in the laboratory

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8. Worker Training MUST include:

- How to detect the presence or release of a hazardous chemical, (e.g. monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released)
- The physical and health hazards of chemicals in the workplace
- Measures workers can take to protect themselves from these hazards, such as:
- Procedures the employer has implemented to protect workers from exposures to hazardous chemicals, such as work practices and emergency procedures
- Personal protective equipment to be used
- The written approved Chemical Hygiene Plan and all components.

9. Medical Exams and Consultation:

- Employers must provide provisions for medical examination and/or consultation and follow-up when needed, when exposure to a hazardous chemical has or may have taken place:
- When a worker develops signs or symptoms of possible exposure
- After a spill, leak, explosion or other occurrence with likelihood of exposure
- When exposure monitoring shows exposure levels routinely exceeding the OSHA action level or, in the absence of an action level, the permissible exposure limit for an OSHA regulated substance (e.g., formaldehyde and xylene)
- Provide the physician with the identity of the hazardous chemical and the conditions under which the exposure may have occurred
- All medical examinations and consultations must be performed by or under the direct supervision of a licensed physician and be provided without cost to the worker, without loss of pay, and at a reasonable time and place

10. At least annually, review and evaluate the effectiveness of the Chemical Hygiene Plan and update as needed

This is a very high-level overview of the content required in your laboratory's Chemical Hygiene Plan. There are numerous resources available for sample plans and templates. It is recommended that you review the full content of OSHA's Laboratory Standard and develop a CHP that is adequate for the needs of your particular facility.

OSHA-approved State Plans

State Plans are OSHA-approved workplace safety and health programs that are operated by an individual state or U.S. territory. These plans are assessed and monitored by OSHA and must be at least as effective as OSHA in protecting workers and in preventing work-related injuries, illnesses and deaths.

There are currently 22 states with approved plans that cover the private sector and state and local government workers. In addition, there are seven states with plans that cover only state and local government workers.

The OSHA Laboratory Safety Guidance should be the primary resource used when developing a Chemical Hygiene Plan; however, some states may have more stringent requirements in their State Plans. Always refer to any applicable State Plans to ensure that the Chemical Hygiene Plan meets all federal and state requirements.

References:

For additional information on developing a Chemical Hygiene Plan consult the following sources:

OSHA Laboratory Safety Guidance: https://www.osha.gov/sites/default/files/publications/OSHA3404laboratory-safety-guidance.pdf

Chemical Hygiene Plan (CHP): https://www.osha.gov/sites/default/files/publications/OSHAfactsheet-laboratory-safety-chemical-hygiene-plan.pdf

State Plans: https://www.osha.gov/stateplans

Working Together to Address the Laboratory Workforce Shortage

By Kathy Nucifora, MPH, MT(ASCP)

Kathy Nucifora joined COLA as the Accreditation Division Manager in November 2009 and in 2019 became COLA's Chief Operating Officer. Kathy was recruited from a COLA accredited lab, Hutchinson Clinic, to join Maryland General where she was responsible for creating and implementing new quality processes and procedures. In addition to managing the day to day operations of the lab, she developed and led a multidisciplinary task force to implement molecular testing for MRSA; she proposed and implemented a positive patient identification system via handheld computers; and helped lead the Laboratory and Nursing Process Improvement Committee. Kathy has also served as adjunct faculty at the Community College of Baltimore County for their Medical Laboratory Technician program.

By: Tammy Zinsmeister

Tammy Zinsmeister has dedicated two decades of her life to COLA's mission serving in a variety of roles as both a staff member and external advisor. While working for a physician organization in the early 90's, Tammy became an expert in the federal CLIA law and regulations. In 1993, she joined COLA to launch the first Government Relations Office.
Today, in her role as Chief Innovation Officer, Tammy combines her economics, policy, business and entrepreneurial knowledge and skills to guide the development of new business ideas to advance COLA's mission.

Everyone can now clearly see that the healthcare sector is experiencing a professional shortage across many scientific and caring professions. Professional burnout and other negative effects of adapting to the pandemic's demands are frequently highlighted in the news. As the public health emergency comes to an end, we now have the chance to pause and consider how the pandemic has affected medical professionals across the country.

The Senate Committee on Health, Education, Labor and Pensions (HELP) also pays attention to the healthcare staffing crisis and has scheduled hearings on the subject. In early March, the Committee issued a request for information (RFI) inviting all stakeholders to share their views on the shortage's key drivers and proposed solutions that can be considered for the development of bipartisan legislation. Concerned parties in the laboratory industry, including COLA, have written letters to the Senate HELP Committee to ensure that the issue facing the laboratory profession is preserved in the broader conversation concerning the scarcity of healthcare professionals.

> This will be a significant effort but organizations are already working together to ensure the laboratory profession is remembered.

Excitingly, the first Workforce Action Alliance Summit ("Summit") was held in Fort Worth, Texas on May 2, 2023, the day before COLA's 2023 Laboratory Enrichment Forum (LEF).

The workforce panel discussion that took place at the 2022 LEF just one year ago sparked the notion that key stakeholders should be brought together in order to explore ways we could work together to address the crisis. Understanding that so many great organizations were already working independently on this issue, we asked the Executives of a number of well-known laboratory organizations to assist us in organizing and hosting the Summit. We were delighted that almost all of our invitations to participate were accepted, leading to the formation of the 2023 WAA Summit Planning Committee.

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It was apparent from the very beginning that there are already a number of excellent initiatives underway to address the crisis; however, we all had the sense that those efforts would not close the gap on today's crisis. To make the most of a one-day gathering, the Planning Committee developed an inventory of examples of existing initiatives to serve as a reservoir of ideas that could be reproduced, scaled or customized for the benefit of other communities. We also considered a number of other trends, such as the rate of planned and early retirements, the unknown impact of the Great Resignation, the role of technology and the predicted expansion in demand for laboratory testing in the future as major drivers that could make an already bad situation even worse.

Executives from organizations representing employers, public health laboratories, laboratories that serve the military and our veterans, educators, regulators, high school counselors and specialists in recruitment and retention joined together in Fort Worth. Everyone who attended shared concern about the current vacancy rates, the challenges to work-life balance, particularly after heroic efforts during the pandemic, and the need to attract the next generation and those transitioning mid-career into the laboratory science field.

During the day, Executives shared their hopes, new ideas and innovations. We started by looking at the current state of the laboratory profession to ensure that our assumptions and strategies would be based on a shared set of facts. We were also fortunate to have a panel discuss initiatives that are already being tried at the national, regional and local levels. We spent a lot of time coming up with ideas, and in the end, we were able to narrow our focus to three important priorities that will set the stage for future work in the years to come.

First, the group decided that despite all the data we now have about the key factors contributing to the shortage, there are still gaps in what we think we know. It is important that we get on solid ground related to the true capacity of our nation's educational programs if we are to persuade others, such as policy makers, to aid in our cause. For example, we need better data to understand where in the country we have ample, qualified candidates to fill the available academic program slots and where there are too few applicants.

Furthermore, we need to be on more solid footing in terms of the number of professionals needed to staff laboratories now and in the future,

Second, a strong case was made that we need to communicate all the career paths in the field of laboratory science, both as they are now and as they might be in the future. This is important not only to get high school students to consider a degree in medical laboratory science (among all the other options open to them), but also to give people already working in the field hope that they can reach their dreams. Visualizing career paths and sharing them nationally with teachers, counselors and students in high schools and other college/university science department programs are great ways to get more people interested in the field. Also important is creating a digital space for potential candidates to visit to learn about all the exciting developments in the field.

Third, the Summit group discussed the importance of continuing the work towards standardizing titles within the profession.

Obviously, this is a challenge from the perspective of achieving consensus, but we can build upon the existing work to further this idea in a meaningful way. The experience so far is that the variation in nomenclature – for example, medical laboratory scientist (MLS), clinical laboratory scientist (CLS) and medical technologist (MT) – may, in part, have the unintended consequence of undermining professional unity and identity in addition to confusing the public and the employer market. In addition, there are many people who believe that the more casual, day-to-day way in which we refer to ourselves as "med techs," "lab techs," or simply "techs" may cloud understanding of the level of academic knowledge, skill and experience that is required of those who work in the laboratory science field as well as the value of the profession and the scientific discipline within the patient care team.
In addition to these three prioritized initiatives, there were also discussions about the role of workplace culture, diversity, equity, inclusion and belonging (DEIB), licensing, certification, pay, recognition and flexible work hours to creating a sustainable workforce for years to come. Importantly, we saw a lot of potential in community partnerships between grantors, public funding, educators, laboratory professionals and employers to help expand medical laboratory science programs and to create enough clinical rotation sites for students to practice what they learn, which would solve an immediate problem.
The workgroups for the three initiatives are already underway and the Summit group will reconvene by video conference in early August. It is clear that the Summit was an energizing experience and the promise of the Summit and our potential for collaboration will be grounded in three practical action plans with key milestones to achieve.

You can send us an email at waa@cola.org
if you want to find out more about the WAA or would like to join the effort.

Kathy Nucifora, MPH, MT (ASCP), Chief Operating Officer

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COLA®

OUR COMMITMENT TO YOU

We are a physician-directed organization whose purpose is to promote health and safety through accreditation and educational programs.

ABOUT COLA:

COLA, Inc. is a physician-directed organization whose purpose is to promote health and safety through accreditation and educational programs. In 1993, COLA was granted deemed status by CMS to provide laboratory accreditation. As a leading laboratory accreditor in the United States, COLA operates its laboratory accreditation program in accordance with a quality management system certified to ISO 9001. This means we offer our customers a unique, standardized program and staff dedicated to satisfaction and laboratory quality. Our Surveyors and Technical Advisors are guided by a coaching approach and uncomplicated quality engineered processes. Laboratories of all types and sizes are evaluated and mentored to produce the highest quality laboratory services and meet CLIA regulations.

COLA's Board of Directors consists of representatives from three founding member organizations: the American Medical Association (AMA), American Academy of Family Physicians (AAFP) and the American College of Physicians (ACP).

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