Master of Public Health

Integrative Learning Experience Report

Development and implementation of a tracer tool for infection prevention in clinical laboratory settings

by

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MASTER OF PUBLIC HEALTH

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Abstract

This Applied Practice Experience project was completed with the Infection Prevention and Control department at The University of Kansas Health System and focused on strengthening infection prevention practices within clinical laboratory settings. While the Infection Prevention and Control team routinely conducts tracers in patient-facing areas such as inpatient units, operating rooms, and outpatient clinics, laboratory environments had not previously been included in standardized audits. To address this gap, I independently designed and piloted a laboratory-specific tracer tool grounded in evidence-based guidelines from the Association for Professionals in Infection Control and Epidemiology, the Centers for Disease Control and Prevention, and The Joint Commission. By expanding tracer methodology to laboratory settings, this project supported a more comprehensive, population-level approach to infection prevention and healthcare quality assurance.

The tool was implemented through direct observation of laboratory practices and structured staff engagement, with compliance documented using a standardized scoring system. Tracer data were analyzed by location and domain to identify both recurring patterns and site-specific issues. The tracer was piloted across three cancer center laboratories and assessed compliance in six domains: hand hygiene, personal protective equipment/staff safety, clean supply storage, soiled item management, environmental safety, and cleaning/disinfection. Findings highlighted strong performance in sharps safety, personal protective equipment availability, and disinfection practices, alongside recurring deficiencies in supply storage and hand hygiene. Site-specific issues, such as cluttered workspaces and improper sink use, were also identified. Results were communicated directly to laboratory leadership, with actionable recommendations provided to address areas of noncompliance.

This integrative project applied foundational public health competencies in population-based project design, evaluation, data interpretation, leadership, and communication to address a systemic gap in infection prevention. The project strengthened laboratory safety by developing and implementing a sustainable tracer tool, while enhancing collaboration between Infection Prevention and Control and laboratory medicine. Laboratory safety supports infection control across healthcare systems by preventing cross-contamination and protecting vulnerable populations, such as immunocompromised cancer patients. In this way, the project not only contributed to system-wide quality improvement and compliance with external standards but

also advanced the broader public health mission of reducing infection risk and strengthening healthcare capacity.

Subject Keywords: infection prevention, laboratory safety, compliance, infection control

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Chapter 1 - Literature Review

Infection prevention and control (IPC) as a practice plays a critical role in healthcare delivery by limiting the spread of infections between patients, staff, and the community. The field incorporates evidence-based practices aimed at reducing healthcare-associated infections (HAIs), ensuring workplace safety, and strengthening overall public health preparedness (World Health Organization [WHO], 2021). Traditionally, infection prevention efforts have centered on patient-facing environments such as inpatient units, operating rooms, and outpatient clinics. However, laboratories also represent an area of significant risk that often receives less attention. Extending IPC oversight into laboratory settings presents both an opportunity to strengthen safety measures and a challenge due to historical gaps in practice.

Risks in Laboratory Medicine

Laboratory medicine is essential to modern healthcare, with estimates suggesting that up to 70% of clinical decisions rely on laboratory data (Centers for Disease Control and Prevention [CDC], 2020). However, laboratories are inherently high-risk environments, as staff routinely handle blood, body fluids, and potentially infectious pathogens. Oversight of laboratory safety is often distributed across multiple departments, rather than being integrated under infection prevention teams. This fragmented responsibility creates gaps, especially in the context of exposure to high-consequence infectious diseases (HCIDs), potentially impacting workflow and healthcare delivery. While not well-defined, HCIDs are those with high mortality, low infectious dose, no/limited effective treatment, and pose a significant public health risk. Examples of HCIDs include viral hemorrhagic fevers (VHFs), Middle East Respiratory Syndrome (MERS), Smallpox, novel and emerging threats, and engineered antimicrobial resistance (National Emerging Special Pathogens Training & Education Center [NETEC], 2025).

Laboratory-acquired infections (LAIs) can occur through accidental needlesticks, inhalation of aerosols, contact with contaminated surfaces, or lapses in personal protective equipment (PPE) use. Advances in biosafety and engineering controls have reduced risk, but exposures still remain a concern. For example, in October 2024, a patient suspected of having Lassa fever, a viral hemorrhagic fever, was seen at three different hospitals in Iowa and had specimens processed at five separate laboratories. The investigation identified 180 contacts, including 23 laboratorians classified as high-risk due to inadequate PPE use and the nature of testing performed (CDC, 2025). While no secondary cases occurred, this case highlights the

importance of taking appropriate precautions, such as wearing proper PPE, to reduce the risk of exposure to harmful pathogens.

A broader review by Blacksell et al. identified 309 LAIs between 2000–2021, eight of which were fatal. Most were linked to procedural error (62.5%), such as inadequate training, specimen mishandling, inappropriate PPE use, or lapses in hand hygiene. The review also documented 16 accidental pathogen escapes from laboratory settings (APELS), which occur when infectious pathogens are inadvertently released due to containment breaches, equipment failure, or procedural lapses (Blacksell et al., 2025). These events highlight the potential for laboratory incidents to extend beyond personal exposure and pose a risk to the broader public health. These findings demonstrate that many exposures are preventable through consistent infection prevention practices. However, the recurrence of such failures across laboratories exemplifies systemic gaps in oversight and the absence of standardized practices to ensure compliance, illustrating the need for structured audit tools.

Regulatory Oversight and Gaps

Laboratories are subject to a variety of regulations and guidelines published by many oversight bodies. In the United States, the Occupational Safety and Health Administration (OSHA) enforces standards such as the Bloodborne Pathogens Standard (CFR 1910.1030), which requires exposure control plans for laboratory workers (OSHA, n.d.). The Clinical Laboratory Improvement Amendments (CLIA), administered by the Centers for Medicare & Medicaid Services (CMS), establish minimum quality standards for clinical laboratory testing. While CLIA certification is mandatory for all clinical labs, its primary emphasis is on testing quality, validation, and recordkeeping rather than IPC (CMS, 2025).

Accreditation by the College of American Pathologists (CAP) fulfills CLIA requirements through biennial inspections that use detailed checklists to evaluate compliance (CAP, n.d.). Although CAP covers some infection-related areas, such as decontamination procedures and competency assessments, it does not explicitly require infection prevention oversight. In contrast, The Joint Commission (TJC) has published IPC standards that specifically call for coordination between IPC programs and laboratory departments. New TJC requirements effective July 2025 state that laboratories must be under the supervision of professionals trained in infection prevention (TJC, 2025).

Professional organizations such as the Association for Professionals in Infection Control and Epidemiology (APIC) and public health agencies like the CDC further contribute guidance. Resources for implementing IPC practices across diverse healthcare settings are provided by APIC (Luebbert, 2014), while the CDC publishes foundational biosafety guidance, including the *Biosafety in Microbiological and Biomedical Laboratories* (BMBL) manual (CDC/National Institutes of Health [NIH], 2020). Despite this patchwork of oversight, gaps remain where laboratory safety does not align fully with IPC program involvement.

One challenge lies in the distinction between enforceable standards and voluntary recommendations. Though OSHA regulations are required by law, many IPC-specific practices, such as routine tracer auditing, are left to institutional discretion. The checklists used by CAP do not require IPC program engagement, resulting in variable implementation. This reliance on recommendations suggests why laboratory IPC often receives less consistent attention compared to patient-facing settings.

The standards of various agencies provide important guidance but are not always aligned. While CAP accreditation focuses primarily on laboratory testing quality and technical processes, TJC standards emphasize infection prevention and integration with hospital-wide IPC programs. Additionally, OSHA requirements are enforceable by law, but other recommendations (such as CDC or APIC guidance) are advisory and depend on institutional adoption. This inconsistency can create confusion about accountability and contribute to variable implementation of IPC practices across laboratories. The lack of standardization emphasizes the need for expectations that reinforce infection prevention to the same level as testing quality and biosafety.

Tracer Methodology as a Quality Improvement Tool

Tracer methodology is an observational auditing approach in which infection preventionists (IPs) directly follow processes to identify gaps in real time. This method, widely used by TJC for accreditation surveys, has been shown to reveal deficiencies that may not be apparent through policy reviews or static compliance reports. Although performance of mock tracers within the healthcare setting is not a requirement, it is strongly recommended as a proactive strategy to monitor compliance and maintain survey readiness. During accreditation visits, TJC uses individual, system, and program-specific tracers to evaluate care processes in real time (TJC, n.d.).

Infection preventionists have adapted this methodology for routine use by employing tracers to identify noncompliance and correct deficiencies before formal surveys. While tracers under jurisdiction of IPC programs are common in clinical areas, they are far less common in laboratories. A 2025 inquiry submitted through APIC's IP Talk forum revealed no responses from IPC programs currently performing laboratory-specific tracers (Reavis, 2025). The absence of tracer performance in laboratories underscores both the novelty and necessity of this intervention, reinforcing its value as a system-level improvement strategy and a critical safeguard for public health.

Theory of Planned Behavior

The Theory of Planned Behavior (TPB) is a behavioral model that suggests human intention to perform a specific behavior is influenced by three factors: attitude toward the behavior, normative beliefs, and perceived behavioral control. An individual's attitude reflects their own evaluation of the behavior as well as its outcomes, while the feelings of others influence the normative beliefs. Perceived behavioral control defines the intent of performing the behavior based on perceived actionability (Bosnjak et al., 2020). Together, these elements formulate both behavioral intention and actual behavior.

The TPB is frequently applied in healthcare to explain and predict health-related behaviors. This model provides a valuable framework for understanding adherence to PPE use and hand hygiene practices. According to the TPB, an individual's ability to perform these behaviors depends on their attitudes toward infection prevention, if colleagues and leadership consistently demonstrate compliance, and the availability and accessibility of necessary resources. When healthcare workers operate in a positive environment with standardized expectations and minimal barriers, they are more likely to consistently use PPE and perform proper hand hygiene (Ahmadi Marzaleh et al., 2025; Sin & Rochelle, 2022).

Agency Context: The University of Kansas Health System

This project was conducted within The University of Kansas Health System (TUKHS), a large academic medical center and home to a National Cancer Institute (NCI)-designated comprehensive cancer center. The Infection Prevention and Control (IPAC) department at TUKHS is responsible for surveillance of HAIs, outbreak investigation, policy development, staff education, and quality improvement initiatives. The team, composed of 16 direct reports,

ensures compliance with CDC, OSHA, and Joint Commission standards across the entire health system.

Recognized as a Level 3 Assessment Center by the National Special Pathogen System (NSPS) TUKHS is equipped and prepared to care for patients with HCIDs for 36 hours or until they are stable enough to be transferred to the Region 7 Regional Emerging Special Pathogen Treatment Center (RESPTC). The system's partnership with NSPS emphasizes the necessity for strict infection prevention practices, including within laboratory settings where specimens from persons under investigation (PUIs) may be present. Every sample received in the laboratory should be processed under the assumption that the specimen contains an infectious pathogen, requiring consistent adherence to appropriate precautions.

The laboratories within TUKHS process over 2.5 million specimens and conduct more than 5 million billable tests annually (KUMC, n.d.). These laboratories span multiple subspecialties, including chemistry, hematology, microbiology, blood bank, molecular microbiology, flow cytometry, and others. IPAC involvement had historically focused on inpatient and outpatient clinical areas, leaving laboratory spaces without standardized infection prevention auditing. This gap created the rationale for the Applied Practice Experience (APE) project. Given the complexity and volume of laboratory operations at TUKHS, improvements in infection prevention practices here are likely to produce scalable models applicable across large health systems.

Preceptor and Mentorship

The project was guided by Maggie Reavis, MPH, BSN, RN, CIC, CPHQ, FAPIC, an Infection Preventionist III with more than a decade of experience in surveillance, outbreak response, and healthcare quality improvement. Her mentorship provided support in tracer tool design, observational auditing, and effective communication with leadership.

Project Rationale and Public Health Impact

In response to the identified gap, my APE project developed and piloted a laboratory tracer tool to systematically evaluate compliance with infection prevention practices such as hand hygiene, PPE use, sharps safety, and workflow separation. The tool provided standardized baseline data, which enabled identification of both site-specific and system-wide vulnerabilities.

Collaboration between IPAC staff and laboratory leadership was also strengthened by this project. By framing this initiative as a partnership rather than a punitive audit, the project encouraged a culture of continuous safety improvement and reinforced the importance of adherence to best practices. These improvements reduce the risk of healthcare-associated infections, protect laboratory personnel and patients, and ensure the reliability of diagnostic testing.

At a broader level, this project demonstrates how structured evaluation tools can contribute to population-level public health outcomes. Improving compliance with infection prevention practices allows laboratories to become less likely to serve as sources of pathogen transmission, supporting outbreak mitigation within healthcare facilities and the surrounding community. In this way, the initiative bridges the gap between operational laboratory practices and public health impact, translating compliance data into meaningful strategies that safeguard both individual and population health.

Chapter 2 - Learning Objectives and Project Description

For my APE, I completed an internship with the IPAC department at TUKHS, where my project focused on improving infection prevention practices within clinical laboratory settings. The IPAC team plays a critical role in auditing areas across the health system to ensure compliance and safety in relation to infection prevention standards. Many clinical spaces, such as inpatient units, operating rooms, and ambulatory clinics, already had tracer tools designed to meet their specific needs. However, laboratories had historically received little direct engagement from IPAC. This gap stemmed in part from the fact that most members of the IPAC team come from nursing backgrounds and are less familiar with the workflows and risks unique to laboratory medicine.

To address this need, my APE project involved developing and piloting a laboratory-specific tracer tool based on standards and guidelines from the APIC, CDC, TJC, as well as general best practices per hospital policies. The tool was designed to assess compliance across domains including hand hygiene, PPE and staff safety, clean supply storage, and general environment. I piloted the tracer at three cancer center laboratories within TUKHS, chosen for their comparable size and workflows, which allowed for more meaningful analysis. Data from the audits were then summarized to identify patterns of noncompliance and opportunities for improvement. This project produced both a standardized tracer tool and a baseline dataset that the IPAC team can use to continue laboratory audits and monitor trends over time.

Learning Objectives

The learning objectives for this APE were developed collaboratively with my preceptor, Maggie Reavis, to ensure the project provided practical, skills-based experience aligned with my Master of Public Health (MPH) training. The objectives were as follows:

1. **Develop and pilot a laboratory-specific infection prevention tracer tool** and use it to conduct audits at a minimum of three cancer center laboratory locations, ensuring the tool reliably captures compliance with infection prevention standards.
2. **Compile findings and communicate results** to laboratory leadership through both written summaries and verbal feedback, providing at least one actionable recommendation per site to improve compliance and safety.

3. **Conduct a summary analysis of tracer data** from at least three cancer center laboratory audits to identify a minimum of three common areas of noncompliance.
4. **Create a standardized tracer tool template** that can be used by the IPAC team for ongoing audits across TUKHS, ensuring sustainability and continued relevance of the project.

These objectives emphasized the development of technical skills in infection prevention, data analysis, and communication, while also contributing directly to quality improvement at TUKHS.

Responsibilities

My responsibilities throughout this project reflected the full cycle of developing, piloting, and evaluating a laboratory-specific infection prevention tracer tool, providing many opportunities to strengthen my skills as a public health professional. I began by reviewing existing guidelines and best practices to compile the tracer content, translating evidence-based recommendations into measurable and practical assessment criteria. This process enhanced my ability to connect scientific knowledge with operational practice, which is a key skill in program development. I then designed the tracer tool in Microsoft Excel and Office, ensuring it was easy to use and capable of automatically calculating compliance rates. This work reinforced my technical proficiency in creating structured evaluation tools that support consistent data collection.

Once finalized, I conducted in-person audits at three cancer center laboratory locations, systematically documenting observations, photographs, and commentary. This hands-on experience strengthened my skills in structured data collection and observation, while also deepening my understanding of workflow, environmental factors, and operational challenges that impact compliance of infection prevention practices. Following each audit, I met with laboratory leadership to communicate findings. I structured these discussions to begin with positive observations, followed by addressing areas of noncompliance with actionable solutions, and concluding with additional strengths. This communication strategy enhanced my ability to present information in a constructive and collaborative manner that fostered cross-departmental engagement and shared accountability. Completed tracer forms were then finalized and shared with leadership.

Finally, I analyzed the data across all three sites, summarized common themes, and documented recommendations for system-wide improvement. This stage strengthened my skills in data analysis, interpretation, and program evaluation. These responsibilities collectively advanced my professional growth while supporting safer laboratory environments and contributing to broader public health outcomes.

Development of the Laboratory-Specific Tracer Tool

Purpose

The primary purpose of developing a laboratory-specific tracer tool was to create a structured method for assessing infection prevention practices in laboratory environments, which is a space that had historically received less direct oversight from IPAC. Unlike other clinical tracers already in use, this tool was specifically designed to capture infection prevention practices that impact both laboratory staff safety and the broader healthcare system. The tool also aimed to be practical for use by any member of the IPAC team, even those without laboratory experience, so that auditing could be sustainable long-term.

Methodology

The tracer tool was developed based on a thorough review of established infection prevention and laboratory safety standards. Resources included the CDC/NIH BMBL manual, TJC accreditation standards, APIC guidelines, and CDC infection control recommendations. In addition, existing tracer tools already used by the IPAC team for other clinical departments were referenced to ensure consistency and support standardization across infection prevention practices. The categories included in the tracer were intentionally selected to strike a balance between comprehensiveness and practicality. Domains such as hand hygiene, PPE adherence, clean supply storage, and environmental cleanliness were prioritized because of their direct impact on preventing cross-contamination between laboratory staff and the broader healthcare environment. More technical processes, falling under CAP oversight, were excluded to avoid redundancy and keep the audit feasible for IPAC staff. This balance ensured the tracer could be completed in approximately one hour while still capturing meaningful information within the IPAC team's scope of responsibility.

The final tool consisted of 45 questions organized into categories including:

- Clean Supply/Items

- PPE/Staff Safety
- Soiled Items
- Hand Hygiene
- General Environment
- Cleaning/Disinfection

Each question was evidence-based and worded for clarity. The Excel-based format included automated compliance percentage calculations to provide immediate feedback, as well as fields for qualitative data in the form of comments and photographs. Regular check-ins with my preceptor ensured that the tool aligned with the needs and priorities of the IPAC team.
See Appendix 1 for the formal tracer template.

Implementation of the Tracer Tool Through Audits

Purpose

The implementation phase tested the tracer in real-world laboratory environments, generated baseline compliance data, and initiated new connections between IPAC and laboratory leadership. Conducting in-person audits allowed me to evaluate the practicality of the tool and identify common areas of noncompliance.

Methodology

The tracer was piloted at three cancer center laboratories within TUKHS: Green Hills Cancer Center (GH), the Clinical Research Center (CRC), and Olathe Cancer Center (OCC). These locations were selected because of their similarity in operations, which allowed for fair comparisons. The main campus core laboratory was intentionally excluded from the pilot phase due to its size, advanced complexity, and higher level of existing regulatory oversight. Including it in the initial trial would have made it difficult to evaluate the tool's usability in a standardized way, as its scale and processes differ greatly from those of smaller laboratories. By focusing on cancer center laboratories with similar operations and staff size, the pilot generated more comparable data and allowed the tracer to be refined before considering expansion to larger, more complex facilities.

The audit process followed a consistent sequence at each site:

- **Introduction and explanation**. I met with the laboratory manager to explain the purpose of the tracer and the scope of the project.
- **Tracer completion**. I conducted a walkthrough of the laboratory, recording observations, comments, and photographs in real time. Each tracer took approximately one hour.
- **Debrief with leadership**. I met immediately with the laboratory manager to review findings. These conversations were structured to highlight positive practices, followed by deficiencies and solutions, and concluded with additional strengths. This balanced approach helped maintain constructive communication.
- **Formal documentation**. I finalized the tracer form and emailed it to the manager, providing a written record of the audit that could be used for follow-up conversations.
- **Cross-site analysis**. After completing all three audits, I compiled and analyzed the data to identify recurring areas of noncompliance and consistent strengths.

Sustainability

The tracer was intentionally structured to support long-term sustainability within the IPAC department. Its modular format allows for straightforward updates as regulatory requirements or organizational priorities evolve, ensuring continued relevance. Because tracers of this format are already a standard practice of the IPAC department at TUKHS, no formal usage instructions were required. However, a formal handoff presentation was conducted with the IPAC team to encourage questions and confirm that staff felt confident applying the tool. The design does not require laboratory-specific training, which increases accessibility and reduces barriers to ongoing use.

These measures, combined with early review and feedback from my preceptor and IPAC colleagues, were intended to ensure the tracer remains both practical and adaptable. The ongoing use of the tool can also strengthen emergency preparedness by enabling rapid assessment of laboratory safety related to infection prevention standards. In this way, the tracer is positioned to guide immediate infection prevention improvements as well as serve as a reliable component of the quality assurance and emergency response processes well beyond the scope of this project.

Summary

The APE provided the opportunity to design and pilot a laboratory-specific tracer tool, filling an important gap in the infection prevention auditing processes at TUKHS. The project established a structured approach for monitoring infection prevention practices by grounding the tracer in evidence-based guidelines from the CDC, APIC, and Joint Commission, and piloting it across three cancer center laboratory sites. The implementation process also facilitated collaboration with laboratory leadership, strengthened communication channels, and generated preliminary data to guide quality improvement. The tracer tool has been structured for sustainability, ensuring that IPAC staff without laboratory backgrounds can reliably use it moving forward.

Chapter 3 - Results

A total of three cancer center laboratory locations were assessed using the newly developed tracer tool. The tracer was designed to capture compliance across six domains central to infection prevention and laboratory safety: clean supply/items, PPE and staff safety, soiled items, hand hygiene, general environment, and cleaning/disinfection. Data were recorded in real time once per location during each audit and later summarized into compliance rates by both site and category. These results provide both a snapshot of current practices as well as insight into areas where targeted improvements might be necessary.

Compliance by Category and Location

Overall compliance rate was calculated for each location as well as an average of the three cancer center locations to represent a system-wide evaluation (Figure 3.1). The GH laboratory had an overall compliance rate of 62.50%, compared to 76.19% at the CRC and 83.72% at OCC. The combined system-wide laboratory compliance rate was 74.40%, indicating that over 25% of observed practices did not meet established standards, revealing opportunities for improvement.

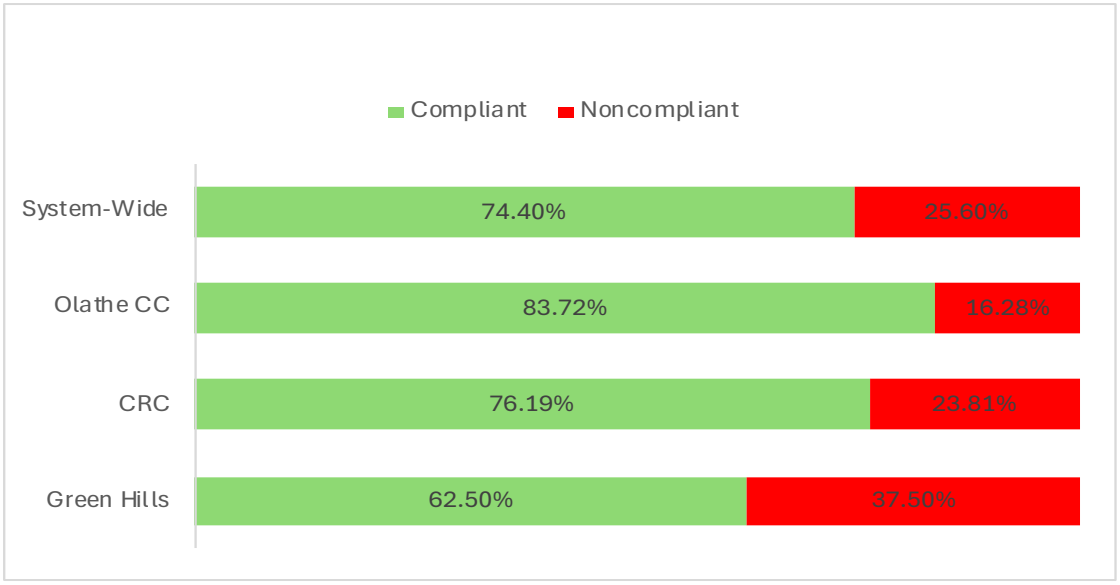

Figure 3.1 Compliance Rates by Location

Variation in compliance rates showed distinct strengths in cleaning and disinfection practices, but significant gaps were identified in clean supply/items, which demonstrated the lowest compliance overall, with a system-wide average of 50%. Deficiencies noted in this category included supplies stored directly on bottom shelves without protective liners, inappropriate use of biohazard bags for clean item storage, and the presence of primary shipping containers in clean supply spaces. In contrast, cleaning and disinfection practices demonstrated the highest compliance across all locations, with an overall rate of 90%. This reflected strong knowledge of cleaning protocols, availability of appropriate disinfectants, and consistent staff adherence to established procedures. Moderate levels of compliance were observed in PPE and staff safety (74.1%), hand hygiene (76.2%), and general environment (80%), while soiled item practices scored consistently high at 83.3% at all three cancer center locations.

Differences became more pronounced when the categories were analyzed by location (Figure 3.2). General environment compliance was only 40% at GH, compared to perfect scores at the CRC and OCC. Hand hygiene compliance was also lower at GH (57.1%) compared to CRC and OCC (85.7%). Clean supply compliance was found to be the highest at OCC (75.0%), while the other two locations were only at 37.5% compliance. In these sites, the variations suggest that site-specific practices, resources, and workflow design influence adherence to infection prevention standards.

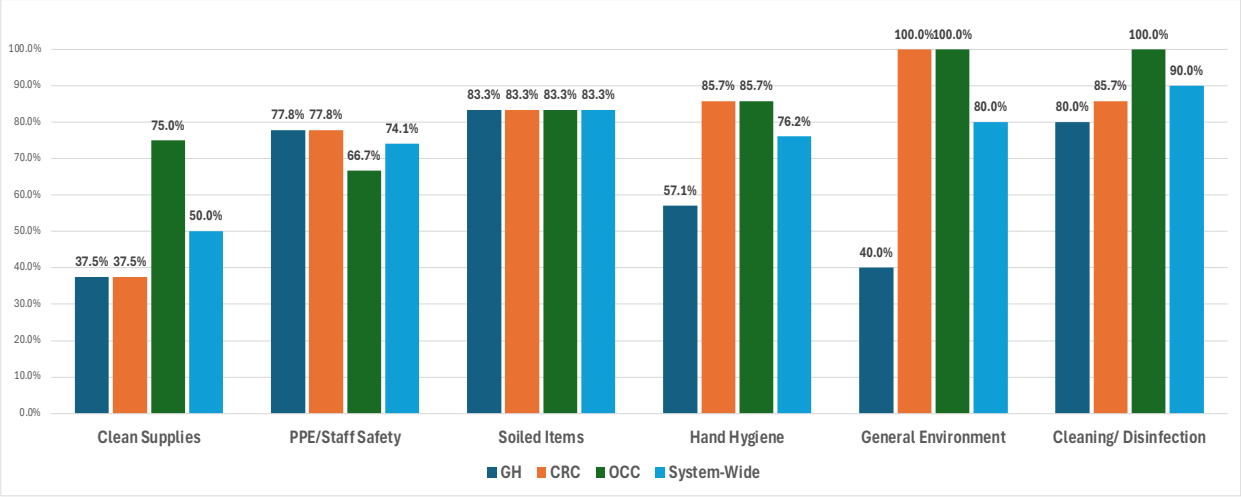

Figure 3.2 Compliance Rates by Category

Site-Specific Findings

Green Hills (GH) Laboratory

The GH laboratory demonstrated the widest variability in compliance. General environment practices were a major weakness, with only 40% adherence. Observed issues included cluttered work areas, lack of PPE usage, supplies stored within sink splash zones, and improper sharps disposal into biohazard bags rather than puncture-resistant containers. Staff were also observed disposing of urine down hand hygiene sinks, creating contamination risks. Hand hygiene compliance was similarly low (57.1%), with inconsistent adherence to established policies, including artificial nail restrictions. Recommendations included redirecting disposal of bodily fluids to nearby toilets, relocating clean supplies outside of splash zones, standardizing sink labeling to reduce confusion, and reinforcing staff education on artificial nail and PPE use policies, especially the proper wearing of lab coats.

Despite these gaps, GH scored highly in cleaning and disinfection, reflecting staff familiarity with appropriate products, contact times, and schedules. With this strong foundation in place, recommendations for targeted improvements in the environment and hand hygiene practices were made and can be implemented (Appendix 2).

Clinical Research Center (CRC) Laboratory

The CRC laboratory demonstrated strong overall performance, with 100% compliance in both general environment and hand hygiene. Workspaces were orderly, sinks were clearly labeled, and staff consistently performed hand hygiene at appropriate times. Cleaning and disinfection practices were another clear strength, with staff adhering to schedules and articulating the importance of disinfectant contact times. Staff safety and access to PPE scored well, with gloves and protective eyewear consistently available. However, PPE usage remained inconsistent, with staff often leaving lab coats unbuttoned or omitting them entirely. Recommendations focused on reinforcing PPE policies during staff training.

Opportunities for improvement were identified in clean supply storage practices. Some supplies were found on the bottom shelf without protective liners, which does not align with best practices. Recommendations included adding shelf liners and reinforcing storage protocols to protect clean items. Overall, CRC displayed a strong culture of compliance, with only minor adjustments needed (Appendix 3).

Olathe Cancer Center (OCC) Laboratory

The OCC laboratory demonstrated strong infection prevention practices across most categories. General environment compliance was 100%, and hand hygiene compliance was relatively high at 85.7%. One factor affecting hand hygiene was the inconsistent sink labeling, which led to confusion about proper use. Standardizing labels was recommended to address this issue.

Soiled item management scored highly, with sharps containers used appropriately and replaced when full. Despite this, PPE use remained a concern, as staff frequently failed to wear lab coats properly. Recommendations included re-educating staff on PPE expectations. However, clean supply storage again emerged as a challenge. At OCC, some supplies were stored in splash zones or kept in their original shipping containers. Recommended actions included relocating items outside sink splash zones, removing shipping containers before storage, and reinforcing clean–dirty separation policies.

Cleaning and disinfection practices were a highlight of OCC's performance. Staff demonstrated strong product knowledge, compliance with schedules, and awareness of contact times. These practices reinforced the site's strengths, even as supply storage practices required additional attention (Appendix 4).

Cross-Site Themes

Common Strengths

Across all three sites, several consistent strengths were identified. High compliance was observed in availability of sharps containers, access to PPE and disinfectants, and adherence to phlebotomy procedures. Cleaning and disinfection practices were also well established, and staff demonstrated knowledge of appropriate products and procedures by speaking to contact times. These findings suggest that the laboratories have strong foundational practices in place to minimize infection risks.

Common Deficiencies

Several recurring deficiencies were noted across all three sites. Clean supply storage was a major area of noncompliance, particularly related to the use of bottom shelves without liners, improper storage of items in biohazard bags, and presence of primary shipping containers.

Hand hygiene was noted as an area needing improvement, with issues such as items stored in sink splash zones, inconsistent sink designations, and lack of adherence to artificial nail policies. These findings highlight opportunities for targeted interventions that address environmental and behavioral factors.

In addition to supply storage and hand hygiene challenges, PPE usage emerged as a consistent gap across all sites. While PPE such as gloves, lab coats, and eye protection were readily available, staff did not always use them correctly. The most common issue involved lab coats, which were either left unbuttoned or not worn at all during laboratory procedures. This apparent disconnect between access and adherence indicates the need for reinforced expectations around PPE use, as well as stronger accountability measures to ensure staff consistently follow infection prevention standards.

Cross-Cutting Themes

- Clean supplies had multiple areas of noncompliance across all locations. Proper storage and labeling appear to be systemic challenges.
- PPE/staff safety compliance issues (staff not wearing appropriate PPE, food/drinks in restricted areas) reflects behavior/training gaps more than resource gaps.
- Hand hygiene sinks not designated “clean” vs. “dirty”, which signals a universal infrastructure/policy gap.

While the tracer identified clear deficiencies across sites, the findings also point to underlying systemic and behavioral factors that contribute to these recurrences. Several cancer center locations, including both GH and OCC, were designed having only one sink within the laboratory space. This lack of infrastructure contributes directly to faults in compliance as staff are not provided with distinct, functional areas for both clean and contaminated tasks. The CRC laboratory was designed with two sinks incorporated into the space but only the hand hygiene sink was labeled as “clean.” The absence of a corresponding “dirty” label may lead to confusion and misuse. Involvement of the IPAC team throughout the design process of future laboratory spaces could mitigate these barriers by ensuring infection control principles are incorporated into the physical environment.

Summary

Overall, the tracer tool was successful in identifying both strengths and opportunities across the three laboratory sites. High compliance in areas such as cleaning, disinfection, PPE availability, and sharps safety demonstrated strong foundational practices that minimize infection risks. At the same time, site-specific gaps, particularly in hand hygiene, clean supply storage, and PPE usage, revealed areas where targeted interventions are needed. The findings provide a clear direction for improvement through focused staff education, standardized policies, and adjustments to the physical environment.

Chapter 4 - Discussion

This project demonstrated that a laboratory-specific infection prevention tracer tool can be an effective method for assessing compliance with IPC practices in clinical laboratory environments. By quantifying compliance rates and identifying common strengths and deficiencies, the tracer provided actionable insights that extend beyond individual site performance and contribute to system-wide understanding of infection prevention practices.

Behavioral and Environmental Contributors to Noncompliance

Several recurring deficiencies observed during the tracers reflected behavioral and environmental contributors to noncompliance. Clean supply storage issues, for example, illustrated how unclear policies and inconsistent training can lead to lapses in environmental infection control. Supplies were frequently stored within sink splash zones or placed on bottom shelves without protective liners, suggesting that staff may lack understanding of infection control principles or procedural guidance on proper storage. Future education provided by the IPAC team could address these issues by clarifying storage expectations and explaining the rationale behind them. As noted by Blacksell et al. (2025), procedural errors are among the most common contributors to laboratory-acquired infections, underscoring the importance of consistent training and oversight.

Similarly, PPE usage, particularly lab coat and glove compliance, was influenced by behavioral and cultural norms rather than knowledge gaps. While staff were aware of PPE policies and the associated risks, compliance tended to decrease in the absence of surveyors. Some perceived lab coats as redundant or uncomfortable, and others believed gloves were unnecessary when hand hygiene was performed regularly. These insights suggest that noncompliance often stems from perceived practicality and workplace culture, emphasizing the need for behavioral and environmental interventions rather than solely policy reinforcement.

Based on these observations, site-specific and system-wide recommendations were developed to address identified deficiencies. Environmental modifications included adding shelf liners, reorganizing storage areas, and removing inappropriate containers. Policy reinforcement efforts focused on standardizing sink labeling and reemphasizing artificial nail restrictions. Targeted education was recommended to strengthen understanding of supply handling and hand hygiene

practices, while continued monitoring through tracer integration into routine IPAC audits will support sustainability and accountability over time.

Significance of Findings

The findings highlight both areas of strong performance and critical opportunities for improvement. Consistently high compliance in areas such as PPE availability, sharps safety, and cleaning/disinfection reflects a strong foundation of infection prevention practices within the laboratories. At the same time, repeated deficiencies in clean supply storage, hand hygiene compliance, and PPE usage represent ongoing challenges that stem from broader organizational and behavioral factors. These gaps represent vulnerabilities that could increase the risk of contamination, occupational exposure, and patient harm if left unaddressed.

Identifying common themes provide the laboratory leadership and IPAC team with baseline information to guide targeted education, policy reinforcement, and environmental modifications. Additionally, this work demonstrates how a standardized tracer tool can serve as an evaluation method that balances both quantitative data collection and qualitative observations, supporting continuous quality improvement. By addressing these identified gaps, laboratories improve safety as well as strengthen compliance with external standards, including TJC and CDC guidelines. This alignment with national frameworks ensures that infection prevention practices are evidence-based, consistent with best practices, and protective of both staff and patient populations.

Strengths and Limitations

A key strength of this project is the development of a standardized tracer tool tailored specifically to the laboratory setting, which allowed for consistent measurement across multiple sites, supporting both internal quality assurance and broader system-level surveillance. The binary compliance format (compliant/noncompliant) facilitated straightforward quantification, enabling clear comparisons by site and category and supporting system-level analysis. The use of in-person feedback sessions with laboratory leadership enhanced the value of the results by fostering collaborative discussion, which is likely to improve the chances of meaningful change.

However, several limitations of this structure should be acknowledged. The audits were limited to three cancer center laboratory locations, which restricts generalizability across the entire health system. The binary nature of the tracer tool, while useful for quantification, may have

oversimplified certain practices that could benefit from a more thorough assessment. Although this project captured only a single point in time, it established a foundation for future work to expand tracer use across additional laboratory sites. Broader implementation could provide useful insight into system-wide trends, support targeted interventions, and evaluate the long-term impact of corrective actions.

New Insights and Implications

Despite these limitations, this project provided new insights into infection prevention in laboratory environments. The variation in compliance across sites suggests that targeted, location-specific interventions may be more effective than broad system-wide policies alone. The tracer tool also revealed that laboratories may perform well in practices tied directly to safety (e.g., sharps, PPE) but struggle with more routine or environmental practices, such as supply storage and sink use, that are equally important for overall safety. These insights reinforce the need for infection prevention strategies that integrate both behavioral and systems-level interventions.

These findings also align with established behavioral science frameworks such as the TPB, which suggests that attitudes, perceived norms, and perceived behavioral control all shape whether individuals follow recommended practices (Bosnjak et al., 2020). For instance, staff may understand the importance of PPE but perceive limited social reinforcement for consistent use or encounter environmental barriers that make adherence impractical. Applying such frameworks can help guide the development of interventions that target knowledge, motivation, and organizational culture.

The feasibility of conducting these tracers demonstrates their potential sustainability as part of routine infection prevention activities. The tool was practical to administer, provided results that were immediately interpretable, and fostered constructive dialogue with laboratory leadership. Embedding tracers into regular quality rounding will help sustain improvements as well as support a culture of accountability and continuous learning.

Conclusion

Overall, the project advanced understanding of how infection prevention can be monitored and improved within clinical laboratories. The tracer tool not only generated baseline compliance data but also served as a mechanism to strengthen collaboration between the IPAC team and

laboratory leadership. By identifying both strengths and gaps, the findings provide a guide for targeted interventions that can enhance laboratory safety and support compliance with regulatory standards. While limited in scope, this project demonstrates the feasibility and value of laboratory-specific tracers as a tool for sustaining infection prevention efforts and building a culture of continuous improvement.

This work contributes to the infection prevention field by filling a documented gap in tools tailored specifically to the laboratory environment. While tracer methodologies are well established in clinical care areas, few standardized approaches exist for laboratories despite their critical role in patient safety and occupational health. By adapting the tracer method to this setting, this project provides both a proof of concept and a practical resource that can be built upon by infection prevention teams in other institutions.

Chapter 5 - Competencies

Student Synthesis and Integration of MPH Foundational Competencies

Throughout this project, I synthesized multiple MPH foundational competencies to advance infection prevention and quality improvement within the health system. Each stage, from tool development to audit execution, data analysis, and stakeholder engagement, required the integration of technical expertise, leadership, communication, and policy thinking. The process unified analytical, behavioral, and systems-level perspectives to generate sustainable improvements in laboratory safety and infection prevention practices. This integration strengthened my professional competencies as well as contributed to the broader goal of enhancing public health protection through evidence-based and collaborative practice.

Table 5.1 Summary of MPH Foundational Competencies

Number and Competency		Description
4	Interpret results of data analysis for public health research, policy, or practice	I integrated quantitative analysis, systems thinking, and interpretive reasoning to transform laboratory compliance data into actionable infection prevention strategies. By synthesizing statistical results with environmental and behavioral observations, I identified system-wide vulnerabilities and developed recommendations that strengthened infection prevention practices and informed institutional policy.
16	Apply leadership and/or management principles to address a relevant issue	I synthesized leadership and management principles to coordinate a multi-site infection prevention project that emphasized collaboration, accountability, and continuous improvement. By integrating strategies from coursework with applied practice, I structured constructive feedback sessions, fostered engagement between teams, and implemented sustainable improvements that enhanced safety and organizational culture.

Competency 4: Interpret results of data analysis for public health research, policy, or practice.

I synthesized quantitative analysis, interpretive reasoning, and systems thinking to transform raw compliance data into actionable insight for infection prevention and control. My training in Fundamental Methods of Biostatistics (MPH 701) provided the foundation for statistical reasoning and data interpretation, where I conducted an independent analysis using RStudio to evaluate Kansas City Chiefs performance metrics. This project strengthened my ability to recognize patterns within large datasets and interpret their implications, which is a skill I later integrated into my APE project.

For my APE, I designed and implemented a laboratory tracer tool across three cancer center laboratories to evaluate compliance with infection prevention practices. I calculated both category-specific and site-specific compliance rates to visualize systemic strengths and weaknesses. Through this analysis, I synthesized quantitative findings with environmental and behavioral observations, uncovering nuanced relationships that extended beyond numerical data. For example, while PPE availability remained consistently high, appropriate PPE use was inconsistent, indicating training gaps than resource shortages. Similarly, variability in hand hygiene compliance often correlated with unclear sink labeling or the absence of sinks within laboratory spaces, revealing structural barriers that directly limited staff adherence.

Rather than presenting data descriptively, I integrated the findings into a framework for institutional improvement. By synthesizing patterns across sites, I was able to differentiate between isolated compliance lapses and system-wide vulnerabilities. This process led to theory-driven recommendations, such as establishing standardized sink labeling protocols and reconfiguring clean supply storage to mitigate contamination risk. The ability to contextualize statistical findings within environmental and behavioral systems elevated the practical utility of the data and transformed it into a strategic decision-making tool.

Through this process, I demonstrated proficiency in interpreting data as well as the capacity to integrate analytical, environmental, and behavioral insights to inform policy and practice. The work exemplified how biostatistical reasoning can be synthesized with applied infection prevention science to strengthen laboratory safety, improve compliance, and ultimately enhance public health protection.

Competency 16: Apply leadership and/or management principles to address a relevant issue.

I synthesized leadership and management principles developed through coursework and professional practice to guide the design, implementation, and evaluation of this project. In Administration of Health Care Organizations (MPH 720), I strengthened my ability to assess community needs, evaluate programs, and lead collaborative initiatives through the Community Needs Project. These skills directly informed how I structured and executed my applied practice experience, particularly in managing stakeholders, fostering collaboration, and maintaining accountability within a complex health system environment.

During this project, I designed and implemented a standardized laboratory tracer process across multiple cancer center locations, coordinating efforts between the IPAC team and laboratory leadership. This required independent decision-making, prioritization, and the ability to balance encouragement with accountability when presenting tracer findings. For example, I structured follow-up meetings to begin with observed strengths, transition to identified deficiencies, present specific, actionable recommendations, and end with additional strengths. This "high–low–recommendation–high" format was intentional, and it created a positive, solutions-focused tone that encouraged open discussion and fostered collaboration between departments. One example of this was recommending that staff redirect disposal of bodily fluids from handwashing sinks to appropriate receptacles to reduce infection risk and improve workflow safety.

By integrating leadership strategies from coursework with practical experience, I created an environment that promoted continuous quality improvement rather than punitive correction. I facilitated communication between IPAC and laboratory teams, negotiated feasible changes, and maintained engagement through collaborative problem-solving. This synthesis of academic and applied leadership strengthened organizational trust, improved compliance with infection prevention standards, and advanced the broader goal of safer laboratory practice within the health system.

Table 5.2 MPH Foundational Competencies and Course Taught In

22 Public Health Foundational Competencies Course Mapping	MPH 701	MPH 720	MPH 754	MPH 802	MPH 818
Evidence-based Approaches to Public Health					
1. Apply epidemiological methods to settings and situations in public health practice	x		x		

22 Public Health Foundational Competencies Course Mapping	MPH 701	MPH 720	MPH 754	MPH 802	MPH 818
2. Select quantitative and qualitative data collection methods appropriate for a given public health context	x	x	x		
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate	x	x	x		
4. Interpret results of data analysis for public health research, policy or practice	x		x		
Public Health and Health Care Systems					
5. Compare the organization, structure, and function of health care, public health, and regulatory systems across national and international settings		x			
6. Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community, and systemic levels					x
Planning and Management to Promote Health					
7. Assess population needs, assets and capacities that affect communities' health		x		x	
8. Apply awareness of cultural values and practices to the design, implementation, or critique of public health policies or programs					x
9. Design a population-based policy, program, project or intervention			x		
10. Explain basic principles and tools of budget and resource management		x	x		
11. Select methods to evaluate public health programs	x	x	x		
Policy in Public Health					
12. Discuss the policy-making process, including the roles of ethics and evidence		x	x	x	
13. Propose strategies to identify relevant communities and individuals and build coalitions and partnerships for influencing public health outcomes		x		x	
14. Advocate for political, social, or economic policies and programs that will improve health in diverse populations		x			x
15. Evaluate policies for their impact on public health and health equity		x		x	
Leadership					
16. Apply leadership and/or management principles to address a relevant issue		x			x
17. Apply negotiation and mediation skills to address organizational or community challenges		x			
Communication					
18. Select communication strategies for different audiences and sectors	DMP 815				
19. Communicate audience-appropriate public health content, both in writing and through oral presentation to a non-academic, non-peer audience with attention to factors such as literacy and health literacy	DMP 815				
20. Describe the importance of cultural humility in communicating public health content		x			x
Interprofessional Practice					

22 Public Health Foundational Competencies Course Mapping	MPH 701	MPH 720	MPH 754	MPH 802	MPH 818
21. Integrate perspectives from other sectors and/or professions to promote and advance population health		x			x
Systems Thinking					
22. Apply a systems thinking tool to visually represent a public health issue in a format other than standard narrative			x	x	

Student Synthesis and Integration of MPH Emphasis Area Competencies

Through coursework and practical experience, I synthesized advanced knowledge across bacteriology, immunology, environmental health, and surveillance to develop a comprehensive understanding of infectious disease prevention and control within both clinical and public health contexts.

Table 5.3 Summary of MPH Emphasis Area Competencies

MPH Emphasis Area: Infectious Disease and Zoonoses		
Number and Competency		**Description**
1	Pathogens/pathogenic mechanisms	Evaluate modes of disease causation of infectious agents
2	Host response to pathogens/immunology	Investigate the host immune response to infection
3	Environmental/ecological influences	Examine the influence of environmental and ecological forces on infectious diseases
4	Disease surveillance	Analyze disease risk factors and select appropriate surveillance
5	Disease vectors	Investigate the role of vectors, toxic plants, and other toxins in infectious disease

Through Veterinary Bacteriology and Mycology (DMP 814), I integrated microbiological, immunological, and clinical concepts to deepen my understanding of pathogen biology and host–pathogen interactions. This course addressed emphasis area competencies 1 (pathogens and pathogenic mechanisms) and 2 (host response to pathogens and immunology). I synthesized knowledge of microbial etiology, virulence factors, and host immune responses to interpret how infections develop, persist, and spread across populations. I reconstructed the link between pathogen characteristics and disease outcomes, strengthening my ability to evaluate infectious risks and interpret diagnostic data within both veterinary and human health

frameworks. This synthesis of microbiological principles provided the scientific foundation for my APE, where I evaluated infection prevention practices and identified environmental and procedural factors contributing to contamination risk in clinical laboratories.

In Introduction to One Health (MPH 710), I synthesized knowledge across disciplines to understand the interconnectedness of human, animal, and environmental health. This course fulfilled emphasis area competencies 3 (environmental and ecological influences on health), 4 (disease surveillance), and 5 (disease vectors). I integrated ecological and epidemiological frameworks to examine how environmental changes, animal health, and human activity collectively shape disease emergence and transmission. I incorporated surveillance system concepts into my understanding of infection prevention, aligning laboratory practices with the broader framework of public health monitoring and response.

My APE project directly addressed emphasis area competency 3 by assessing how environmental and structural factors within clinical laboratories influence infection prevention and control practices. Through this project, I analyzed how elements such as airflow, surface sanitation, and sink placement contribute to contamination risks, integrating One Health concepts into a healthcare setting. By synthesizing these environmental insights with applied infection control principles, I demonstrated how laboratory environments represent a critical intersection of human and environmental health, reinforcing the need for cross-sector collaboration to reduce infectious disease transmission.

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Appendix 1 – Lab Tracer Tool Template

Tracer Observation Detail Report
2025 IPAC Laboratory Environmental Tracer

Site: The University of Kansas Health System
Program: Hospital

*Compliance percentage and totals display data from all questions in the observation.

Total Numerator: **Total Denominator:** **Not Applicable Count:** **Total Question Count:**

Observation Header	
Observation Title:	
Observation Status:	**Location:**
Observation Date:	**Department:**
Total Completed Observations:	
Note:	

Clean Supply/Items			
1. There are no expired or compromised supplies.			
	Num:	Den:	Comp%:
2. Bottom shelves are solid or have a liner.			
	Num:	Den:	Comp%:
3. Only clean supplies are found in clean utility area.			
	Num:	Den:	Comp%:
4. Primary shipping containers and corrugated cardboard are not used to store clean supplies.			
	Num:	Den:	Comp%:
5. All items are stored at least 18 inches below the ceiling.			
	Num:	Den:	Comp%:
6. No clean supplies are stored directly on the floor.			
	Num:	Den:	Comp%:
7. No clean supplies are stored in biohazard bags.			
	Num:	Den:	Comp%:
8. Open control solution bottles are labeled with open date and a discard date according to manufacturer's recommendation or per policy and are not expired or beyond the discard date.			
	Num:	Den:	Comp%:
PPE/Staff Safety			
9. Reusable lab coats are processed by an accredited healthcare linen company.			
	Num:	Den:	Comp%:
10. Staff have access to personal protective equipment for standard and BSL guidelines.			
	Num:	Den:	Comp%:
11. Staff are wearing and utilizing appropriate PPE to prevent exposure. **a. Gloves are worn when handling specimens and changed when contaminated, integrity has been compromised, or when otherwise necessary.** b. **Lab coats are worn and closed while handling hazardous materials.**			
	Num:	Den:	Comp%:
12. Lab coats are not worn in clean spaces. PPE is not worn outside of the laboratory space.			
	Num:	Den:	Comp%:
13. No food, drinks, or personal items in areas where body fluids could be located. Such items are stored in appropriate, designated locations.			
	Num:	Den:	Comp%:

Page: 1 of 3

14. Emergency eyewash solutions/plumbed eyewash station are readily available. Solution is not expired and/or plumbed stations are checked weekly by department and annually by maintenance.			
	Num:	Den:	Comp%:
15. Eye and face protection (goggles, mask, face shield or splatter guard) is used for anticipated splashes or sprays of infectious or biohazardous material when handled outside the BSC.			
	Num:	Den:	Comp%:
16. No mouth pipetting is performed. All pipetting is done via mechanical methods.			
	Num:	Den:	Comp%:
17. Phlebotomy procedures are exclusively performed using safety devices.			
	Num:	Den:	Comp%:
18. Biological Safety Cabinets are functioning properly, and HEPA filters are not expired.			
	Num:	Den:	Comp%:
19. All procedures involving the manipulation of infectious materials that may generate an aerosol are conducted within a BSC.			
	Num:	Den:	Comp%:
Soiled Items			
20. Reagent and Specimen refrigerators: **a. Refrigerators or freezers containing blood, body fluids, or other potentially infectious materials are marked with biohazard sticker.** **b. No food, drink, medication, or clean items stored in same refrigerator or freezer as specimens and/or reagents.** **c. Inside of the reagent/specimen refrigerator is clean and defrosted.** d. **Reagent/specimen refrigerator is within temperature range and recorded on log if indicated.**			
	Num:	Den:	Comp%:
21. Sharps containers are readily available and used. Containers are puncture resistant, not overfilled, labeled with a biohazard label, and are secured to wall or in a caddy.			
	Num:	Den:	Comp%:
22. Biohazardous material is disposed of in appropriate containers (red bags in solid, red containers with tight fitting lid).			
	Num:	Den:	Comp%:
23. No biohazardous material is stored in break rooms.			
	Num:	Den:	Comp%:
24. Manual differential droppers are properly disposed of after single use.			
	Num:	Den:	Comp%:
25. All completed samples are capped and properly stored.			
	Num:	Den:	Comp%:
Hand Hygiene			
26. No items are stored in sink "splash zone" (18" from either side of faucet), or a splash guard is in place.			
	Num:	Den:	Comp%:
27. Supplies needed for hand hygiene are readily available. Includes soap and water, alcohol-based hand rub, and paper towels. Access is unimpeded.			
	Num:	Den:	Comp%:
28. Paper towels and other paper hygiene products are stored in a matter that prevents contamination.			
	Num:	Den:	Comp%:
29. Sinks are clearly designated as "clean" and "dirty" sinks.			
	Num:	Den:	Comp%:
30. Nothing is stored under sinks.			
	Num:	Den:	Comp%:
31. Artificial nails are not worn by direct care providers as defined in Hand Hygiene policy.			

	Num:	Den:	Comp%:
32. Phlebotomists don new gloves for each patient after performing hand hygiene.			
	Num:	Den:	Comp%:
General Environment			
33. Area is free from visible leaks, stains, cracks, visible moisture, or evidence of mold growth.			
	Num:	Den:	Comp%:
34. Area is free of dust, dirt, soil, trash, clutter, and hazards (fixtures, walls, ceilings, floor).			
	Num:	Den:	Comp%:
35. Ceiling tiles are not stained; walls and paint are in good condition.			
	Num:	Den:	Comp%:
36. Chairs and other furniture are free of tears and in good condition			
	Num:	Den:	Comp%:
37. No carpet or rugs are present in the laboratory space.			
	Num:	Den:	Comp%:
Cleaning/Disinfection			
38. Hospital approved disinfectants are readily available, appropriately labeled, and not expired.			
	Num:	Den:	Comp%:
39. Other disinfectants are formulated and utilized per the manufacturer's instructions. Disinfectants are readily available, appropriately labeled, and not expired.			
	Num:	Den:	Comp%:
40. Environmental surfaces are cleaned between patients.			
	Num:	Den:	Comp%:
41. Staff can speak to contact time of disinfectants being used.			
	Num:	Den:	Comp%:
42. Laboratory spaces have surfaces that are easily cleanable.			
	Num:	Den:	Comp%:
43. All analyzers, including Point of Care instruments (unit and base), are clean and free of dust and stains.			
	Num:	Den:	Comp%:
44. Point of care instrument control solutions and test strips are dated and not expired.			
	Num:	Den:	Comp%:
45. Centrifuges are free of visible contamination by blood or body fluids. Specimens are capped while centrifuging.			
	Num:	Den:	Comp%:

Appendix 2 – Green Hills CC Tracer

07/28/2025

Tracer Observation Detail Report
2025 IPAC Laboratory Environmental Tracer

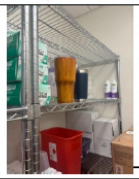
Site: The University of Kansas Health System
Program: Hospital

*Compliance percentage and totals display data from all questions in the observation.

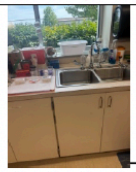
62.50% | 37.50%

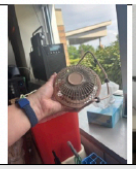
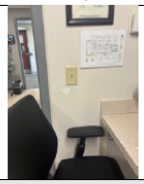
Total Numerator: 25 **Total Denominator:** 40 **Not Applicable Count:** 5 **Total Question Count:** 45

Observation Header	
Observation Title: 2025 IPAC Laboratory Environmental Tracer – Higgins, Kira – 07/28/2025	
Observation Status: Complete	**Location:** Laboratory Locations
Observation Date: 07/28/2025	**Department:** Green Hills Cancer Center
Total Completed Observations: 1	
Note:	

Clean Supply/Items			
1. There are no expired or compromised supplies.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
2. Bottom shelves are solid or have a liner.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
 – No liner on bottom shelves in clean supply area			
3. Only clean supplies are found in clean utility area.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
 – personal cups stored amidst clean supplies			
4. Primary shipping containers and corrugated cardboard are not used to store clean supplies.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
			
5. All items are stored at least 18 inches below the ceiling.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
6. No clean supplies are stored directly on the floor.			

Compliant	Num: 1	Den: 1	Comp%: 100.00
7. No clean supplies are stored in biohazard bags.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
			
8. Open control solution bottles are labeled with open date and a discard date according to manufacturer's recommendation or per policy and are not expired or beyond the discard date.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
Expiration date not indicated on open control solutions; open date rubbed off and not legible on some			
PPE/Staff Safety			
9. Reusable lab coats are processed by an accredited healthcare linen company.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
10. Staff have access to personal protective equipment for standard and BSL guidelines.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
11. Staff are wearing and utilizing appropriate PPE to prevent exposure. **a. Gloves are worn when handling specimens and changed when contaminated, integrity has been compromised, or when otherwise necessary.** b. **Lab coats are worn and closed while handling hazardous materials.**			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
No gloves or lab coats worn			
12. Lab coats are not worn in clean spaces. PPE is not worn outside of the laboratory space.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
13. No food, drinks, or personal items in areas where body fluids could be located. Such items are stored in appropriate, designated locations.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
Drinks not stored in appropriate locations			
14. Emergency eyewash solutions/plumbed eyewash station are readily available. Solution is not expired and/or plumbed stations are checked weekly by department and annually by maintenance.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
15. Eye and face protection (goggles, mask, face shield or splatter guard) is used for anticipated splashes or sprays of infectious or biohazardous material when handled outside the BSC.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
16. No mouth pipetting is performed. All pipetting is done via mechanical methods.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
17. Phlebotomy procedures are exclusively performed using safety devices.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
18. Biological Safety Cabinets are functioning properly, and HEPA filters are not expired.			
N/A	Num: 0	Den: 0	Comp%:
19. All procedures involving the manipulation of infectious materials that may generate an aerosol are conducted within a BSC.			
N/A	Num: 0	Den: 0	Comp%:
Soiled Items			

20. Reagent and Specimen refrigerators: **a. Refrigerators or freezers containing blood, body fluids, or other potentially infectious materials are marked with biohazard sticker.** **b. No food, drink, medication, or clean items stored in same refrigerator or freezer as specimens and/or reagents.** **c. Inside of the reagent/specimen refrigerator is clean and defrosted.** d. **Reagent/specimen refrigerator is within temperature range and recorded on log if indicated.**			
Compliant	Num: 1	Den: 1	Comp%: 100.00
21. Sharps containers are readily available and used. Containers are puncture resistant, not overfilled, labeled with a biohazard label, and are secured to wall or in a caddy.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
22. Biohazardous material is disposed of in appropriate containers (red bags in solid, red containers with tight fitting lid).			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
 – small biohazard containers with needles			
23. No biohazardous material is stored in break rooms.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
24. Manual differential droppers are properly disposed of after single use.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
25. All completed samples are capped and properly stored.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
Hand Hygiene			
26. No items are stored in sink "splash zone" (18" from either side of faucet), or a splash guard is in place.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
 – slide staining setup within 18"			
27. Supplies needed for hand hygiene are readily available. Includes soap and water, alcohol-based hand rub, and paper towels. Access is unimpeded.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
28. Paper towels and other paper hygiene products are stored in a matter that prevents contamination.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
29. Sinks are clearly designated as "clean" and "dirty" sinks.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
Only one sink used as both dirty and clean			
30. Nothing is stored under sinks.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
31. Artificial nails are not worn by direct care providers as defined in Hand Hygiene policy.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
Phlebotomist with artificial nails			

32. Phlebotomists don new gloves for each patient after performing hand hygiene.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
General Environment			
33. Area is free from visible leaks, stains, cracks, visible moisture, or evidence of mold growth.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
			
34. Area is free of dust, dirt, soil, trash, clutter, and hazards (fixtures, walls, ceilings, floor).			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
 			
35. Ceiling tiles are not stained; walls and paint are in good condition.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
			
36. Chairs and other furniture are free of tears and in good condition			
Compliant	Num: 1	Den: 1	Comp%: 100.00
37. No carpet or rugs are present in the laboratory space.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
Cleaning/Disinfection			
38. Hospital approved disinfectants are readily available, appropriately labeled, and not expired.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
39. Other disinfectants are formulated and utilized per the manufacturer's instructions. Disinfectants are readily available, appropriately labeled, and not expired.			
N/A	Num: 0	Den: 0	Comp%:
40. Environmental surfaces are cleaned between patients.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
41. Staff can speak to contact time of disinfectants being used.			
N/A	Num: 0	Den: 0	Comp%:
42. Laboratory spaces have surfaces that are easily cleanable.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
43. All analyzers, including Point of Care instruments (unit and base), are clean and free of dust and stains.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00

 – visible blood on POC INR instrument			
44. Point of care instrument control solutions and test strips are dated and not expired.			
N/A – not seen during audit	Num: 0	Den: 0	Comp%:
45. Centrifuges are free of visible contamination by blood or body fluids. Specimens are capped while centrifuging.			
Compliant	Num: 1	Den: 1	Comp%: 100.00

Appendix 3 – Clinical Research Center Tracer

09/02/2025

Tracer Observation Detail Report
2025 IPAC Laboratory Environmental Tracer

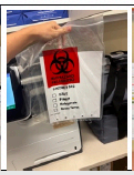
Site: The University of Kansas Health System
Program: Hospital

*Compliance percentage and totals display data from all questions in the observation.

Total Numerator: 32 **Total Denominator:** 42 **Not Applicable Count:** 3 **Total Question Count:** 45

Observation Header	
Observation Title: 2025 IPAC Laboratory Environmental Tracer – Higgins, Kira – 09/02/2025	
Observation Status: Complete	**Location:** Laboratory Locations
Observation Date: 09/02/2025	**Department:** Clinical Research Center (CRC)
Total Completed Observations: 1	
Note:	

Clean Supply/Items			
1. There are no expired or compromised supplies.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
2. Bottom shelves are solid or have a liner.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
 – clean supply storage area			
3. Only clean supplies are found in clean utility area.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
 – boxes of sharps and biohazard trash near clean supplies			
4. Primary shipping containers and corrugated cardboard are not used to store clean supplies.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
 – primary shipping boxes in clean supply area			
5. All items are stored at least 18 inches below the ceiling.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
6. No clean supplies are stored directly on the floor.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
7. No clean supplies are stored in biohazard bags.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00


8. Open control solution bottles are labeled with open date and a discard date according to manufacturer's recommendation or per policy and are not expired or beyond the discard date.

Noncompliant	Num: 0	Den: 1	Comp%: 0.00


– expired QC in fridge

PPE/Staff Safety

9. Reusable lab coats are processed by an accredited healthcare linen company.

Compliant	Num: 1	Den: 1	Comp%: 100.00

10. Staff have access to personal protective equipment for standard and BSL guidelines.

Compliant	Num: 1	Den: 1	Comp%: 100.00

11. Staff are wearing and utilizing appropriate PPE to prevent exposure.
- **a. Gloves are worn when handling specimens and changed when contaminated, integrity has been compromised, or when otherwise necessary.**
- **b. Lab coats are worn and closed while handling hazardous materials.**

Noncompliant	Num: 0	Den: 1	Comp%: 0.00

Lab coats not worn/not closed

12. Lab coats are not worn in clean spaces. PPE is not worn outside of the laboratory space.

Compliant	Num: 1	Den: 1	Comp%: 100.00

13. No food, drinks, or personal items in areas where body fluids could be located. Such items are stored in appropriate, designated locations.

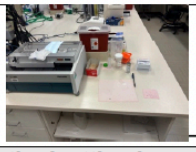
Compliant	Num: 1	Den: 1	Comp%: 100.00

14. Emergency eyewash solutions/plumbed eyewash station are readily available. Solution is not expired and/or plumbed stations are checked weekly by department and annually by maintenance.

Compliant	Num: 1	Den: 1	Comp%: 100.00

15. Eye and face protection (goggles, mask, face shield or splatter guard) is used for anticipated splashes or sprays of infectious or biohazardous material when handled outside the BSC.

Noncompliant	Num: 0	Den: 1	Comp%: 0.00


– no splash guard in front of slide staining station

16. No mouth pipetting is performed. All pipetting is done via mechanical methods.

Compliant	Num: 1	Den: 1	Comp%: 100.00

17. Phlebotomy procedures are exclusively performed using safety devices.

Compliant	Num: 1	Den: 1	Comp%: 100.00

18. Biological Safety Cabinets are functioning properly, and HEPA filters are not expired.

N/A	Num: 0	Den: 0	Comp%: _____

19. All procedures involving the manipulation of infectious materials that may generate an aerosol are conducted within a BSC.			
N/A	Num: 0	Den: 0	Comp%: _____
Soiled Items			
20. Reagent and Specimen refrigerators: **a. Refrigerators or freezers containing blood, body fluids, or other potentially infectious materials are marked with biohazard sticker.** **b. No food, drink, medication, or clean items stored in same refrigerator or freezer as specimens and/or reagents.** **c. Inside of the reagent/specimen refrigerator is clean and defrosted.** **d. Reagent/specimen refrigerator is within temperature range and recorded on log if indicated.**			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
No biohazard sticker on reagent/specimen fridge			
21. Sharps containers are readily available and used. Containers are puncture resistant, not overfilled, labeled with a biohazard label, and are secured to wall or in a caddy.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
22. Biohazardous material is disposed of in appropriate containers (red bags in solid, red containers with tight fitting lid).			
Compliant	Num: 1	Den: 1	Comp%: 100.00
23. No biohazardous material is stored in break rooms.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
24. Manual differential droppers are properly disposed of after single use.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
25. All completed samples are capped and properly stored.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
Hand Hygiene			
26. No items are stored in sink "splash zone" (18" from either side of faucet), or a splash guard is in place.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
27. Supplies needed for hand hygiene are readily available. Includes soap and water, alcohol-based hand rub, and paper towels. Access is unimpeded.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
28. Paper towels and other paper hygiene products are stored in a matter that prevents contamination.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
29. Sinks are clearly designated as "clean" and "dirty" sinks.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
No sign designating dirty sink as "dirty"			
30. Nothing is stored under sinks.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
31. Artificial nails are not worn by direct care providers as defined in Hand Hygiene policy.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
32. Phlebotomists don new gloves for each patient after performing hand hygiene.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
General Environment			
33. Area is free from visible leaks, stains, cracks, visible moisture, or evidence of mold growth.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
34. Area is free of dust, dirt, soil, trash, clutter, and hazards (fixtures, walls, ceilings, floor).			
Compliant	Num: 1	Den: 1	Comp%: 100.00
35. Ceiling tiles are not stained; walls and paint are in good condition.			
Compliant	Num: 1	Den: 1	Comp%: 100.00

36. Chairs and other furniture are free of tears and in good condition			
Compliant	Num: 1	Den: 1	Comp%: 100.00
37. No carpet or rugs are present in the laboratory space.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
Cleaning/Disinfection			
38. Hospital approved disinfectants are readily available, appropriately labeled, and not expired.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
39. Other disinfectants are formulated and utilized per the manufacturer's instructions. Disinfectants are readily available, appropriately labeled, and not expired.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
40. Environmental surfaces are cleaned between patients.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
41. Staff can speak to contact time of disinfectants being used.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
42. Laboratory spaces have surfaces that are easily cleanable.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
43. All analyzers, including Point of Care instruments (unit and base), are clean and free of dust and stains.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
44. Point of care instrument control solutions and test strips are dated and not expired.			
N/A – not seen during audit	Num: 0	Den: 0	Comp%:
45. Centrifuges are free of visible contamination by blood or body fluids. Specimens are capped while centrifuging.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
 – blood in centrifuge			

Appendix 4 – Olathe CC Tracer

05/20/2025

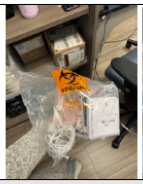
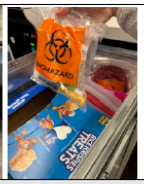
Tracer Observation Detail Report
2025 IPAC Laboratory Environmental Tracer

Site: The University of Kansas Health System
Program: Hospital

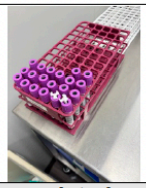
*Compliance percentage and totals display data from all questions in the observation.

Total Numerator: 36 **Total Denominator:** 43 **Not Applicable Count:** 2 **Total Question Count:** 45

Observation Header	
Observation Title: 2025 IPAC Laboratory Environmental Tracer – Higgins, Kira – 05/29/2025	
Observation Status: Complete	**Location:** Laboratory Locations
Observation Date: 05/29/2025	**Department:** Olathe Cancer Center
Total Completed Observations: 1	
Note:	

Clean Supply/Items			
1. There are no expired or compromised supplies.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
2. Bottom shelves are solid or have a liner.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
3. Only clean supplies are found in clean utility area.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
 – personal items stored with clean supplies			
4. Primary shipping containers and corrugated cardboard are not used to store clean supplies.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
5. All items are stored at least 18 inches below the ceiling.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
6. No clean supplies are stored directly on the floor.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
7. No clean supplies are stored in biohazard bags.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
 			
8. Open control solution bottles are labeled with open date and a discard date according to manufacturer's recommendation or per policy and are not expired or beyond the discard date.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
PPE/Staff Safety			

9. Reusable lab coats are processed by an accredited healthcare linen company.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
10. Staff have access to personal protective equipment for standard and BSL guidelines.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
11. Staff are wearing and utilizing appropriate PPE to prevent exposure. **a. Gloves are worn when handling specimens and changed when contaminated, integrity has been compromised, or when otherwise necessary.** b. **Lab coats are worn and closed while handling hazardous materials.**			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
Lab coats not worn/not closed			
12. Lab coats are not worn in clean spaces. PPE is not worn outside of the laboratory space.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
13. No food, drinks, or personal items in areas where body fluids could be located. Such items are stored in appropriate, designated locations.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
Drinks not stored in appropriate locations			
14. Emergency eyewash solutions/plumbed eyewash station are readily available. Solution is not expired and/or plumbed stations are checked weekly by department and annually by maintenance.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
15. Eye and face protection (goggles, mask, face shield or splatter guard) is used for anticipated splashes or sprays of infectious or biohazardous material when handled outside the BSC.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
16. No mouth pipetting is performed. All pipetting is done via mechanical methods.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
17. Phlebotomy procedures are exclusively performed using safety devices.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
18. Biological Safety Cabinets are functioning properly, and HEPA filters are not expired.			
N/A	Num: 0	Den: 0	Comp%:
19. All procedures involving the manipulation of infectious materials that may generate an aerosol are conducted within a BSC.			
N/A	Num: 0	Den: 0	Comp%:
Soiled Items			
20. Reagent and Specimen refrigerators: **a. Refrigerators or freezers containing blood, body fluids, or other potentially infectious materials are marked with biohazard sticker.** **b. No food, drink, medication, or clean items stored in same refrigerator or freezer as specimens and/or reagents.** **c. Inside of the reagent/specimen refrigerator is clean and defrosted.** d. **Reagent/specimen refrigerator is within temperature range and recorded on log if indicated.**			
Compliant	Num: 1	Den: 1	Comp%: 100.00
21. Sharps containers are readily available and used. Containers are puncture resistant, not overfilled, labeled with a biohazard label, and are secured to wall or in a caddy.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
22. Biohazardous material is disposed of in appropriate containers (red bags in solid, red containers with tight fitting lid).			
Compliant	Num: 1	Den: 1	Comp%: 100.00
23. No biohazardous material is stored in break rooms.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
24. Manual differential droppers are properly disposed of after single use.			

Noncompliant	Num: 0	Den: 1	Comp%: 0.00
			
25. All completed samples are capped and properly stored.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
Hand Hygiene			
26. No items are stored in sink "splash zone" (18" from either side of faucet), or a splash guard is in place.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
27. Supplies needed for hand hygiene are readily available. Includes soap and water, alcohol-based hand rub, and paper towels. Access is unimpeded.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
28. Paper towels and other paper hygiene products are stored in a matter that prevents contamination.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
29. Sinks are clearly designated as "clean" and "dirty" sinks.			
Noncompliant	Num: 0	Den: 1	Comp%: 0.00
Only one sink used as both dirty and clean			
30. Nothing is stored under sinks.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
31. Artificial nails are not worn by direct care providers as defined in Hand Hygiene policy.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
32. Phlebotomists don new gloves for each patient after performing hand hygiene.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
General Environment			
33. Area is free from visible leaks, stains, cracks, visible moisture, or evidence of mold growth.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
34. Area is free of dust, dirt, soil, trash, clutter, and hazards (fixtures, walls, ceilings, floor).			
Compliant	Num: 1	Den: 1	Comp%: 100.00
35. Ceiling tiles are not stained; walls and paint are in good condition.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
36. Chairs and other furniture are free of tears and in good condition			
Compliant	Num: 1	Den: 1	Comp%: 100.00
37. No carpet or rugs are present in the laboratory space.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
Cleaning/Disinfection			
38. Hospital approved disinfectants are readily available, appropriately labeled, and not expired.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
39. Other disinfectants are formulated and utilized per the manufacturer's instructions. Disinfectants are readily available, appropriately labeled, and not expired.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
40. Environmental surfaces are cleaned between patients.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
41. Staff can speak to contact time of disinfectants being used.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
42. Laboratory spaces have surfaces that are easily cleanable.			

Compliant	Num: 1	Den: 1	Comp%: 100.00
43. All analyzers, including Point of Care instruments (unit and base), are clean and free of dust and stains.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
44. Point of care instrument control solutions and test strips are dated and not expired.			
Compliant	Num: 1	Den: 1	Comp%: 100.00
45. Centrifuges are free of visible contamination by blood or body fluids. Specimens are capped while centrifuging.			
Compliant	Num: 1	Den: 1	Comp%: 100.00