A Guide to Selecting the Right Electronic Hand Hygiene Compliance Monitoring Solution for Your Hospital

For most healthcare workers, performing hand hygiene is a key part of their day because they recognize that proper hand washing and sanitizing can help reduce the risk of spreading healthcare-associated infections (HAIs) between patients.[1] However, despite education, training and observation efforts, hospitals continue to struggle with compliance. In fact, the Centers for Disease Control and Prevention (CDC) reports that the average healthcare-worker performs hand hygiene fewer than half the times that they should.[1]

Why? Not for lack of effort. Healthcare workers aren't intentionally skipping hand hygiene opportunities or trying to put patients at risk for HAIs. Quite the opposite. They are simply busy, and in the rush of the day can forget. It's human nature.

A number of hand hygiene compliance monitoring methods exist to help measure compliance and help healthcare workers make improvements. Historically, direct observation has been the gold standard of hand hygiene compliance monitoring methods, using trained observers, who are usually existing staff members (other nurses, managers, etc.) to directly watch and document compliance. While this has been the standard method for some time, it carries with it a number of problems: Direct Observation is resource heavy since it pulls staff off their normal work duties to document hand hygiene; the sample size of data collected from this method is so small that it is statistically negligible; and, the results are often biased due to the Hawthorne Effect, where people act differently when they know they are being watched. As a result, reporting usually does not represent an accurate picture of the hospital's actual compliance, which can be dangerous; hospitals believe they are performing at 90% compliance when the average U.S. hospitals compliance is 40%.[1]

Over the last decade, a new hand hygiene monitoring method has gained in popularity: automated or electronic hand hygiene compliance monitoring (EHHCM). Several EHHCM solutions exist, offering a variety of unique ways to collect compliance data and influence hand washing behaviors. The opportunity for hospitals is great, but selecting the right technology to match specific needs can be challenging. There are many considerations, including organizational culture, budget and enterprise infrastructure, to name a few. Decision makers have a lot to think about because no two systems are exactly alike – each offers a different approach to improving compliance and those differences can be difficult to identify.

Because of this, it can be easy to assume that all systems are the same, leading a hospital to select based on price alone. The danger in doing this is that the long-term costs may vary between solutions, like potential costs post-implementation for ongoing maintenance or service. Price is a consideration, and hospital budgeting can be challenging, but selecting an EHHCM solution without weighing the system's overall quality and impact on infection prevention and staff engagement could lessen your ability to successfully improve hand hygiene compliance, making the investment in such a solution of little worth. The better path would be to take the right steps to ensure your compliance monitoring vendor-partner aligns with your long-term patient and caregiver safety goals before investing in an EHHCM solution.

The question becomes, how do I assess the quality of a third-party compliance monitoring system to ensure I'm setting my hospital up for **long-term success?**

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Here are 5 Things to Consider When Evaluating an EHHCM Solution

1. WHAT IS BEING MONITORED?
2. HOW ACCURATE IS THE MONITORING DATA?
3. HOW IS MONITORING DATA REPORTED?
4. WHAT IS THE INSTALLATION PROCESS?
5. WHAT TRAINING AND SERVICE ARE INCLUDED IN THE PURCHASE PRICE?

1. WHAT IS BEING MONITORED?

This may seem obvious. Hand hygiene compliance, right? In fact, different systems evaluate different activities in order to measure compliance, and it's important that you understand the differences. There are three categories:

Group Monitoring: This type of monitoring system often counts hand hygiene product dispenses and averages that number across the number of employees in order to calculate its compliance score. This can be attractive to hospitals because there is minimal equipment to install or disruption in care for training, and it allows hospitals to see a big picture view of its overall compliance. However, group monitoring does not distinguish between staff dispensing product or visitors, which means the average compliance score includes visitor dispenses, confounding compliance scores. In addition, it does not provide individual healthcare worker compliance measurement to foster personal accountability or corrective actions and it cannot measure compliance between patients in a double occupancy room, limiting compliance measurement in open bay areas like an emergency department (ED). Group monitoring also provides no information about whether hand hygiene is being done at the appropriate times in a healthcare worker's workflow. Finally, ongoing census and staffing data needs to be collected by the hospital on a regular basis in order to accurately analyze the data for this type of monitoring.

Room Monitoring: With patient room monitoring, sensors are installed in hand hygiene dispensers as well as at the entry point to patient rooms. Additionally, in some room monitoring systems, healthcare workers wear badges that communicate with those sensors to detect their entry/exit and the dispensing of hand hygiene products upon entry/exit. If they forget to perform hand hygiene during these two opportunities, some badges may notify them in the moment, while others will not. While this provides hospitals a more granular view of individual healthcare compliance than group monitoring, it cannot measure a healthcare worker's hand hygiene compliance between patients in double-occupancy rooms, or in areas with open bays such as EDs.

Patient-centered Monitoring: With patient-centered monitoring, healthcare workers wear badges and sensors are placed in all product dispensers in the room as well as under each patient care surface such as patient beds, stretchers, or infusion chairs. This detects whether an individual healthcare worker performs hand hygiene not only upon entry and exit of a room, but between patients in shared spaces such as double-occupancy rooms and EDs.

For systems that utilize badges, it may seem like badge functionality is similar across all offerings, but it actually varies. Some badges only collect information on washing habits, while others actually remind healthcare workers to wash or sanitize hands in real-time with audible and/or visible cues. This second type of badge holds healthcare workers personally accountable for their own compliance.

QUESTIONS TO ASK THE VENDOR:

Can this solution easily integrate into existing workflows?

Is this a badged system? If not – how does your technology hold individual healthcare workers accountable and promote behavior change?

Does the system allow for immediate feedback flexibility?

Does the system provide hand hygiene performance feedback?

How does your technology collect data and provide compliance information?

Does the system have a positive perception amongst staff?

What reduction in HAIs can be expected?

Does the system track both soap and sanitizer usage?

Does the system provide product level usage reporting?

Does the system provide battery life/power reports?

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2. HOW ACCURATE IS THE MONITORING DATA?

Accuracy is often one of the main reasons why hospitals opt for electronic monitoring in the first place. It seems like every EHHCM system should better capture the real compliance story than a direct observation estimate, but as we've just discussed, what is being evaluated to measure compliance can vary between electronic solutions.

For an EHHCM solution to provide an accurate compliance score, it should have the ability to pick up most, if not all, compliance events. As you evaluate compliance monitoring options, be clear on your expectations for compliance so that you can compare claims of accuracy between each solution, apples-to-apples. Pay attention to vendors who define compliance in the same way you do and can demonstrate, with data, an improvement between baseline compliance measurements and a sustained average of 80-95% compliance post-implementation. Keep in mind that 100% compliance, regardless of the compliance monitoring method used, is unlikely. This is because, even with reminders, healthcare workers sometimes miss a hand hygiene opportunity, especially if there are urgent patient needs where hand hygiene becomes second priority.

QUESTIONS TO ASK THE VENDOR:

Is the system accurate?

Does the vendor/system have experience in healthcare hand hygiene?

Can the system monitor healthcare worker contact with multiple patient beds per room?

Does the system record every hand hygiene opportunity? If so, how? If not, what challenges don't allow the system to record every opportunity?

Is this system able to measure hand hygiene compliance at the point of care?

How many customers have increased and sustained compliance over time?

Are there particular areas in the hospital where this type of technology wouldn't work as well as others?

What is the highest compliance rating this system has achieved?

Are there any plans to update or improve the technology soon?

Can the system create false positives?

Does the system provide hand hygiene performance feedback?

Accuracy
is often one of the main reasons why hospitals opt for electonic monitoring in the first place.

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3. HOW IS MONITORING DATA REPORTED?

While behind-the-scenes compliance data collection can be complex, clinician-facing reporting and dashboards should not be. Hospitals need tools that automate the data collection for them and provide easy-to read compliance information. Vendors are meeting this need through the deployment of analytics dashboards that are designed with pressured and fast-moving clinicians in mind.

Here are some things to consider as you evaluate the presentation of this data:

User experience: Usability and ease of navigation are important factors for adoption because if a user struggles to find the information they need, they may not use the system at all. Your vendor should be willing to partner with you to customize dashboards so they accommodate your hospital's needs. Entire technologies have been abandoned, not because of lack of value, but because of poor user experience.

Robust analytics and reporting: The ability to easily aggregate and share compliance data is crucial in order to keep different hospital groups informed and committed to compliance efforts. Being able to report on progress and discuss where corrective action is needed is powerful and having the right level of detail in order to make those improvements and sustain them is critical. Look for vendors who offer robust analytics and objective compliance feedback so that you can put the data to work for your hospital.

QUESTIONS TO ASK THE VENDOR:

Does the data and reporting provide guidance to improve hand hygiene?

How is compliance data presented or reported?

How are reports accessed? Are there different ways for healthcare workers to access them, like automated emails?

Can staff get individual report cards to view their own successes?

Does the system allow for workflow customization?

Does the system have other features like bed tracking, low battery reports, reports for staff or exposure risk or even reporting on dispenser product usage?

Does the vendor offer actionable insights that drive continuous improvement?

Hospitals need tools that automate the data collection for them and provide

easy-to-read and actionable compliance information

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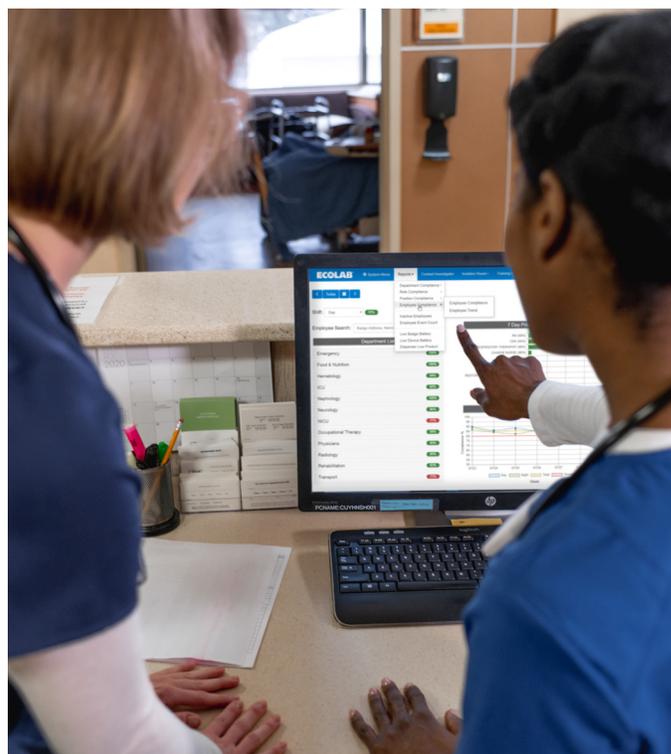
4. WHAT IS THE INSTALLATION PROCESS?

After a solution is purchased, what does installation and IT support look like? This is a component of electronic monitoring that is sometimes overlooked but shouldn't be because, depending on your existing infrastructure, you may or may not have the resources to support a system all on your own. Consider what kind of support you may need from a vendor, and whether you will need their extra manpower for implementation, training and ongoing compliance and IT support. Some systems will automatically include these in their offering, while other technologies on the market will charge extra for the installation, as well as for future maintenance and troubleshooting. Request references from hospitals that have implemented the system from the vendor. Hearing from current customers directly will help you figure out how you might manage these factors at your facility.

QUESTIONS TO ASK THE VENDOR:

Is installation included in the upfront price?

**What does installation entail?
Is there a timeline of events?**

Who oversees the installation?
What is involved? Is it hardwired? Require Wi-Fi? Ethernet? Room monitors in ceilings? Is there a need to add servers to support the information flow?

How much IT support from the hospital's end is necessary?

Does the system use a network independent from the hospital to transfer data?

Is the system wireless or must there be hardwiring installed?

What is the power source to the dispenser and what is the battery life of the components?

If it's a badged system, do badges need to be re-charged every day or do they require batteries?

Is maintenance included in the cost?

Does the system offer regular service and representation after implementation?
Should an issue arise with the technology, does the vendor deploy physical support or is support remote?

Does the company offer ongoing reviews of the technology and data to show progress and make recommendations?

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from a vendor, and whether you will need their extra manpower for implementation, training and ongoing compliance and IT support.

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5. WHAT TRAINING AND SERVICE ARE INCLUDED IN THE PURCHASE PRICE?

Choosing an EHHCM solution and installing it in your hospital is a significant feat. However, make sure you know how the vendor will support you after implementation. The relationship doesn't end with a purchase. Vendors should be consistently reviewing the data with you and providing education and service on a regular, mutually agreed upon cadence to ensure you are leveraging the solution to its full potential. An electronic monitoring system is intended to drive behavior and culture change, and that simply doesn't happen overnight; it's a process that is optimized over time to accommodate your facility's evolving needs and help healthcare workers begin to view their processes and outcomes analytically. Without ongoing training on your new electronic monitoring system, buy-in at your facility may be difficult and this can seriously jeopardize its success in driving compliance. Your vendor should be prepared to help you with this.

An electonic hand hygiene compliance monitoring system is **intended to drive behavior and culture change**

QUESTIONS TO ASK:

Is training included in the cost?

Who manages the initial training for employees and who is trained at the hospital?

Is there ongoing support for engagement or compliance help?

Are there guidelines for ongoing training for incoming employees?

Are there guidelines for who should access dashboards versus who manages it?

How do you help with ensuring compliance can be improved and sustained?

Is there support team that can offer help for hardware and dashboard related questions?

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Conclusion

Hand hygiene compliance is already a part of your healthcare worker's daily practices, but there is a tremendous opportunity to elevate patient care through improved compliance. Even if your current compliance score seems outstanding, consider the shortfalls of direct observation and whether that score is a truly accurate depiction of hand hygiene activity in your facility. EHHCM can give you improved visibility to your staff's behaviors and provide the opportunity to take corrective actions that can help strengthen your staff's performance, decrease infection risks, and deliver improved patient outcomes.

As you research EHHCM options, hold vendors to a high standard. Their goal should be your ongoing success as a healthcare provider. They should partner with you, serve as an extension of your team, and be an asset to your hospital's success. While the price of the solution is a factor, it's just one of many that you should consider when evaluating a system to meet your specific hospital's needs. Look into the type of monitoring provided, the accuracy of that compliance method and data, the data delivery method, its usability and thoroughness, how the system integrates into your existing infrastructure and workflows, how it's implemented and supported throughout the life of the solution, and how the vendor will help you train your staff to continuously drive hand hygiene compliance improvements.

The prospect of change can be overwhelming but recognizing the opportunity for improvement and learning about what is available to help is a great place to start, and working with the right vendor-partner can make the steps that follow a positive and rewarding experience as well.

The Ecolab Hand Hygiene Compliance Monitoring System

The Ecolab Electronic Hand Hygiene Compliance Monitoring (EHHCM) System is a complete offering that helps hospitals monitor and standardize hand hygiene compliance while driving measurable clinical, operational and financial value. Ecolab's EHHCM allows hospitals to accurately record hand hygiene events by individual, driving a 2x average improvement in hand hygiene compliance from a hospital's average observed baseline of 35-45%, resulting in sustained post-implementation levels of 80-90%. By arming healthcare workers with a badge and patient beds with monitors, the system tracks when a healthcare worker approaches a patient and reminds them via a subtle beep and blinking light when they have forgotten to wash or sanitize their hands. Customizable, clinician-friendly dashboards collect data, allowing hospitals to lead process improvements where they are needed most.

**To learn more,
visit www.ecolab.com/compliancemonitoring**

Ecolab Healthcare

Ecolab, a global leader in infection prevention and environmental hygiene, is driven to help health systems and hospitals realize clinical, operational and financial value through repeatable and measurable workflows. Our products, training, consultative service, standardized processes and digital dashboards provide actionable insights and opportunities for corrective actions that help reduce the costs and inefficiencies of infections, while improving margins and keeping patients and staff safe.

www.ecolab.com/healthcare

1. Centers for Disease Prevention and Control. Hand Hygiene in Healthcare Settings. https://www.cdc.gov/handhygiene/ Accessed April 30, 2020.

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