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Designing For Prevention:  
Three Steps to  
Enhance Your Infection  
Prevention Program



The COVID-19 pandemic reshaped and challenged the patient-caregiver experience within acute and ambulatory healthcare settings. In many ways, the pandemic became an accelerator or catalyst for change, forcing healthcare organizations to refocus or fast-track existing programs to accommodate changing needs. One example is infection prevention.

In this white paper, we discuss the need for effective infection prevention measures and look at three steps that, when taken, can help enhance infection prevention programs and initiatives.

# The Need for Effective Infection Prevention Measures

The dangers surrounding potential transmission of COVID-19 in healthcare settings did not create the need for effective infection prevention measures. Infection prevention has been a focus in healthcare for many years, in both ambulatory and acute care settings.

In 2008, the US Department of Health and Human Services developed the [National Action Plan to Prevent Health Care-Associated Infections](#) to provide a roadmap for acute care. The Centers for Disease Control and Prevention (CDC) has identified healthcare-associated infections (HAIs) as a threat to patient safety. The organization estimates that HAIs account for an estimated [1.7 million infections and 99,000 associated deaths each year in hospitals](#). The CDC also created the [Guide to Infection Prevention for Outpatient Settings](#), which outlines minimum expectations for safe care.

The pandemic brought a new urgency to infection prevention, serving as a reminder to healthcare professionals that a strong infection prevention program is important to keep patients and caregivers safe. This new urgency has especially highlighted personal hygiene, equipment sterilization and social distancing as a means to reduce transmission of infectious diseases and exposure to contagions.

The impact of COVID-19 also strengthened the need for a patient-centered approach to the delivery of care, drawing a direct and distinctive link to infection prevention initiatives and the point of care experience. As patients express anxiety and hesitation about scheduling routine exams and doctor visits for fear of exposure to the virus, healthcare organizations are finding it imperative to promote and highlight their infection prevention initiatives. Patients seek assurances that necessary precautions are taken to ensure visits will be safe and the quality of care delivered will not be negatively impacted.



# Three Steps to More Effective Infection Prevention

As you assess your infection prevention efforts with an eye toward the point of care experience, there are steps you can take in three key areas that will help enhance your infection prevention program: standardization in the instrument processing area, the implementation of a patient-centered workflow, and automation of the contact tracing process.

## 1. Standardize Your Instrument Processing Area

Instrument processing is more than just instrument sterilization. It encompasses the transport, cleaning, disinfection, drying, sterilization, documentation and storage of reusable instruments in a practice. Instrument processing is a critical part of any infection prevention protocol. As antimicrobial resistance and “superbugs” loom even larger in headlines, as well as COVID-19, the need for consistent and effective instrument processing in ambulatory care has reached a new urgency.

Adding to the challenge, one simple mistake can result in the unwanted spread of infection, posing a risk to both patients and caregivers. There is additional pressure to quickly process instruments as higher output can mean more income, especially as more procedures move to ambulatory care environments.

Without a strong infection control program in place, instrument processing steps can be skipped, resulting in possible sharps injuries to staff or patient exposure to contagions. This is where the design of your area can play a significant role in maintaining consistent and effective instrument processing workflows that safeguard the well-being of patients and caregivers.

Ideally, the instrument processing space within your facility should be a separate, discrete area designed specifically for instrument processing and sterilization. This separation will allow you to more easily control and manage the process, and help ensure a safe and efficient workflow. Instrument processing and sterilization should not share space with a laboratory or staff break area, nor should it be located in the facility’s storage room.

The instrument processing space should also be centrally located within the facility to allow easy access from all patient areas. This central location improves the flow and availability of instruments throughout the day in a busy practice. Additional attention should be given to the size and layout of the instrument processing area to ensure that it has adequate equipment, fits the procedure volume needs of the facility and allows caregivers to treat patients effectively and efficiently.

## Five Critical Steps of Instrument Processing

Regardless of the size or shape of your instrument processing area, there are five critical steps, based on [CDC guidelines](#), that should be a part of your instrument processing workflow design.

### 1. Receiving, Cleaning + Decontamination:

This section should allow reusable instruments, supplies and equipment to be received, sorted, cleaned and decontaminated of both macroscopic and microscopic debris.

### 2. Preparation + Packaging:

This section should be at least four feet from the previous section or have a barrier to prevent contaminants from entering the space as items are inspected, assembled into sets or trays, and wrapped or packaged for sterilization.

### 3. Sterilization:

This section should be large enough to include the sterilizer and related supplies with adequate space for loading, unloading and cooldown of instruments after sterilization.

### 4. Monitoring/Sterility Assurance:

This section needs to be configured to support documentation and recording of the mechanical, chemical and/or biological monitoring used to help ensure the effectiveness of the sterilization process.

### 5. Storage:

This section should be covered and contain adequate space for sterile and disposable items so they are not stored under sinks or in other locations where they might become wet or damaged.



## 2. Implement Patient-Centered Workflow Designs

Many healthcare organizations and caregivers are realizing that better care starts with a better clinical environment design. The following are three examples of patient-centered workflow designs gaining traction in ambulatory care facilities that can strengthen infection prevention programs and provide a solid foundation for successful initiatives and protocols.

By focusing on the patient, these designs allow caregivers to better manage and limit patient interactions and movement throughout the facility, reducing the potential for exposure or transmission.

### Collaborative Care Model

The collaborative care model keeps patients at the center of the care experience by delivering ancillary services within the exam room. This model is an embodiment of the patient-centric approach to the delivery of care, providing structure for caregivers to more closely collaborate on patient care plans.

Traditionally, patients move through various locations of the facility during visits, often for diagnostic testing or other ancillary services. By allowing patients to remain in one place and consolidating visits as much as possible, care teams are decreasing patients' overall length of stay while improving access and efficiency. Patients receive services within the same exam room, rather than moving from location to location. Also standardizing equipment in the exam room, such as chairs, mobile carts and real-time locating systems (RTLS), provides caregivers with flexibility to move between spaces and real-time coordination of patient care.

By bringing ancillary services to the patient, time in the clinic is optimized and the overall patient experience can be less stressful. Limiting movement through the facility also limits patient exposure to contagions by minimizing the areas and the staff they come



into contact with during the visit, and it can limit the opportunity for increased transmission if they are later determined to have a contagion.

### Self-Rooming Model

The self-rooming (or direct-rooming) model has patients moving directly to the exam room, allowing healthcare organizations to eliminate waiting areas, improve the point of care experience and maximize exam space. In light of COVID-19 and social distancing measures, this model has also been touted as an effective way to minimize the transmission of infectious diseases and exposure to contagions.

With this model, patients check in for appointments and proceed directly to an exam room or diagnostic sub-waiting location on their own or escorted by staff. To efficiently self-room, health systems often use a real-time locating system (RTLS), assigning locator badges to patients at check-in. RTLS software provides staff visibility to where patients are located and which rooms are clean and available.

The elimination of the waiting room can be an effective tool in infection prevention efforts. Crowded, common waiting areas are often an ideal environment for exposure to contagions, especially during a pandemic or flu season.

## Dual Access Model

Before the COVID-19 pandemic, the growing patient population was putting greater strain on the traditional linear design of ambulatory care environments. As patients slowly returned for annual visits or elective procedures, those strains reemerged. With a linear design, which features shared corridors and publicly exposed staff workstations, hallways can often become crowded with equipment, patients and caregivers, causing privacy and infection prevention concerns.

The dual access model, which is more easily adoptable with new construction or redesigns, separates caregiver work areas from patient-facing spaces, with dedicated corridors to dual-entry exam rooms where patients and caregivers enter from different sides.

The dual access patient corridors and entries offer greater privacy and a calmer environment free from clinical clutter. Meanwhile, the staff and clinician entry leads to an “off-stage” centralized work area where caregivers can be highly collaborative with the entire care team. The off-stage area also provides direct access to all exam rooms for better patient flow management. The on-stage/off-stage concept contributes to greater flexibility of exam room usage as capacity needs require. For practices seeking balance between in-person and telemedicine visits, RTLS provides care teams with in-the-moment visibility to room status and provider availability, streamlining the ability to designate exam room use.



### 3. Automate Contact Tracing

Due to its high transmission rates, COVID-19 heightened the awareness of environmental exposures for both patients and healthcare organizations. This put greater strain on traditional manual contact tracing processes.

RTLS technology can automate the labor-intensive process, helping increase the speed, effectiveness and accuracy of monitoring efforts. RTLS technology, which has been providing value in acute care for decades, makes capturing accurate workflow data possible by communicating in-the-moment patient and staff locations, wait times and staff interactions, as well as a vast amount of retrospective detail. RTLS offers greater visibility, management of processes and orchestration of caregiver interactions.

Using RTLS badges and sensors, the technology can automatically track and document interactions. Caregivers can simply run a report that helps immediately identify with whom a patient diagnosed with an infectious disease came into contact with, which areas of the facility were visited and what equipment was used. This allows caregivers to quickly notify, test and treat those who came into contact with the contagion and supports decontamination efforts.

Once implemented, RTLS technology can also further increase the benefits of the previously mentioned patient-centered workflow designs by enhancing visibility, management and orchestration of caregiver processes and interactions.







When patients and staff feel safe, comfortable and empowered, better outcomes are more attainable—and the effectiveness of your infection prevention program is key to this. By designing an instrument processing area that follows CDC guidelines, choosing a patient-centered workflow design approach and automating contact tracing, you can strengthen your infection prevention program, keep your patients and staff more safe, and help improve the delivery of care.



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