



# Remediation, Restoration, and Renovations:

Maintaining a Patient-Centered Environment  
with Temporary Modular Wall Containment Systems



S Y S T E M S



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## Overview

Creating a hospital environment that aligns with patients' evolving expectations.



Hospitals and outpatient facilities are constantly assessing ways to improve the patient experience. Traditional tools such as the Donabedian Model, which outlines structural, process, and outcome measures, are widely used key performance indicators. Although there is no debate that exceptional physicians, nurses, and state-of-the-art equipment are vital to high patient satisfaction scores, many hospitals still fall short of their patient-centered goals. Explore the growing importance of creating a hospital environment that aligns with patients' evolving expectations, and as a result increases positive patient outcomes and experiences. Find out how Blessing Hospital in Quincy, Illinois and Providence Portland Medical Center in Portland, Oregon met their remediation and restoration objectives in an active hospital environment without sacrificing patient satisfaction, significantly reducing patient risk, and eliminating unsightly construction work.

# Introduction

An improved hospital environment leads to higher patient satisfaction with physicians, nursing, food service, housekeeping, and higher overall satisfaction<sup>2</sup>.

Patient happiness is the name of the game as hospital reimbursements have become linked to new patient satisfaction measures, like the Hospital Consumer Assessment of Health Care Providers and Systems (HCAHPS)<sup>1</sup>. Greater public demand for aesthetically pleasing waiting rooms, luxury hospital suites, and modern accents have renovation crews working under new demands with old techniques. Long gone are the days when maintenance teams can take the time to block off construction areas with thick plastic sheeting or take time to build walls from scratch to complete renovations. Projects need to be completed safer, faster, and with as little disruption as possible to patient care and the 24/7 work hours.

The HCAHPS Survey is composed of 27 items: 18 substantive items that encompass critical aspects of the hospital experience, which includes the cleanliness and quietness of the hospital environment. Interestingly, reports further indicate that patients cannot reliably distinguish positive experiences with the physical environment from positive experience with care. An improved hospital environment

leads to higher satisfaction with physicians, nursing, food service, housekeeping, and higher overall satisfaction<sup>2</sup>. These new quality measures require risk assessment teams to consider new ways to approach hospital renovation. What you do when improving your space could lead to poor ratings. In addition to this, risks such as healthcare-associated infections (HAIs) have to be controlled. Nosocomial aspergillosis has occurred in association with environmental disturbances including but not limited to: hospital construction, maintenance, demolition, and renovation<sup>3</sup>. Too many cases of HAIs will affect a hospitals incentive based reimbursements through programs such as The Centers for Medicare and Medicaid Services (CMS) Value-Based Purchasing Program.

Innovations like temporary modular wall containment systems have changed how risk assessment teams view hospital construction and solve three major construction challenges:

- 1. Creating or enhancing the patient-centered environment**
- 2. Reducing nosocomial infection risks**
- 3. Increasing labor productivity without a major influx in costs**

# The Ideal Healthcare Facility Renovation Zone

## Isolating an area under renovation



Save labor costs by eliminating the need to build temporary walls or repair plastic sheeting



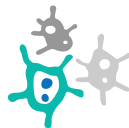
Increase productivity and reduce downtime between projects due to ongoing facility enhancement needs



Install in work areas without disruption or shutdown allowing critical departments to continue operations



Improve risk management and infection control in the renovation zone



Offer more effective control of airborne pathogens



Improve patient, visitor, and staff experience during renovations



Permit aggressive cleaning of high-touch surfaces



Reduce construction noise and smell



Secure renovation zone

# Case Study:

## Blessing Hospital

Blessing Health System located in Quincy, Illinois is nationally recognized for their quality care and patient safety initiatives. The health system received the Leapfrog Hospital Safety Grade “A”, which made them one of only 844 hospitals named among the safest in the United States. Further, Blessings Health System consistently earned their incentive based reimbursements through the Hospital Value-Based Purchasing Program and scored outstandingly on the HCAHPS Survey. All of this was accomplished while the hospital regularly renovated, remediated, and enhanced their facilities.

Blessing Hospital, part of the Blessing Health System, is a 307-bed acute-care hospital. A not-for-profit, non-tax supported, independent hospital, Blessing heralds its commitment to providing compassionate, high-quality care using advanced technology in state-of-the art, comfortable facilities. The hospital is fully accredited by DNV-GL Healthcare. Neil Russell currently serves as its Maintenance Manager and previously served as the hospital’s Life Safety Specialist.

### The Challenge

Blessing Hospital seeks all avenues to provide the highest patient care possible and its environmental services team is essential to this task. The hospital’s upgrades and upkeep are managed in-house. This includes

Neither the plastic sheeting nor the custom built walls reduced the noise pollution to an acceptable level and the work area did not offer the welcoming look that was vital to the hospital’s inviting appearance.

creating and maintaining a patient-centered environment that takes into consideration the benefits of natural lighting, welcoming waiting rooms, modern amenities, and more. Areas under renovation are cordoned off using heavy-duty plastic sheeting or custom built walls. However, this didn’t align well with the hospital’s patient-centered approach to care. Neither the plastic sheeting nor the custom built walls reduced the noise pollution to an acceptable level and the work area did not offer the welcoming look that was vital to the hospital’s inviting appearance. Additionally, the plastic sheeting and custom-built walls did not offer the level of infection prevention that was up to par with Blessing or Mr. Russell. Lastly, the additional labor required to cut drywall, build studs, or hang and repair plastic rips was costly and environmentally unfriendly.



## The Solution

Mr. Russell and the Risk Assessment Team at Blessing Hospital decided to invest in new equipment, specifically temporary modular wall containment systems. The high-performance containment system is comprised of modular panels that can be quickly and cleanly installed, relocated, or dismantled. This provides a sustainable green solution that drastically reduces labor costs and downtime between phases. The integrated features also help manage difficult sealing problems by providing an airtight enclosure that exceeds ICRA Class IV requirements. This significantly reduces the risk of airborne pathogens or dust, reaching patients that are immunodeficient. Additionally, the temporary modular wall containment systems are secure, attractive, washable, and can reduce renovation noise by up to 50%. This directly aligns with Blessing Hospital's patient-centered environment goals and allows sensitive healthcare areas to run without disruption.

## The Experience

*Renovation is happening at the hospital on an ongoing basis. We needed a containment system that would comply with ICRA (Infection Control Risk Assessment) standards and NFPA (National Fire Protection Association) code. The temporary modular wall containment systems are superior. The environmental services team was able to use the system to complete a "patch and paint" job in the ICU waiting room. This would typically require the team to build walls in another location, then transport and assemble the walls before beginning the remediation work. This is a higher risk location according to our infection control risk assessment matrix*

An airtight enclosure that exceeds ICRA Class IV requirements. This significantly reduces the risk of airborne pathogens or dust, reaching patients that are immunodeficient.

*of precautions for construction & renovation. However, we were employing the temporary modular wall containment system this time and it was very easy to put up. There is no mess, the panels offer a nice looking barrier, and the airtight seals allowed us to work in a higher risk location quickly and efficiently with minimal noise. We were able to maintain the usage of the ICU waiting room and visitors were thoroughly impressed. I received many compliments on the look from staff, and families and friends of ICU patients. They felt relieved that we took the extra precaution to make sure their loved ones weren't exposed unnecessarily.*

*We were able to finish the ICU job on a Thursday/Friday and we were able to move to an OR job on Monday. We simply disinfected and disassembled the panels and relocated to the new work site. The temporary modular wall containment system minimized start-up time and offered a faster breakdown. Labor productivity has skyrocketed and we scored the goal on patient safety.*

### - NEIL RUSSELL

Maintenance Manager  
Blessing Hospital

# Case Study:

## Providence Portland Medical Center

Providence Portland Medical Center is part of Providence Health & Services in Oregon, a not-for-profit network of hospitals, health plans, physicians, clinics, and affiliated health services. Providence Health & Services is recognized for excellence in patient care and research in areas such as cancer, heart, orthopedics, women's health, rehabilitation services and behavioral health. The Providence Portland Medical Center is licensed for 483 beds, and has over 3,000 employees. There are approximately 1,000 physicians on staff. The campus is also home to Providence Child Center, a 58-bed facility dedicated exclusively to medically fragile children. The hospital has previously been recognized nationally as a "Top Hospital" for safety and quality by the Leapfrog Group. David Overton serves as the Fire and Life Safety Specialist.

### The Challenge

Infection prevention is a top priority for patients but also employees at Providence Portland Medical Center, this is especially important when maintenance or renovations are taking place. When embarking on any construction related project, precautions are taken to ensure the safety of everyone on campus. Walls are typically built using sheet rock and steel rods to create barriers or thick plastic sheeting is erected depending on work specifications. However, these solutions are time intensive, labor intensive, and lack the level of sophistication needed to meet the hospital strict regard for security and infection prevention.

Three specific areas for improvement are addressed:

1. **Behavioral Health Unit**
2. **Hospital Anteroom**
3. **Breaching Firewalls**

### Behavioral Health Unit

When repairs were needed in the behavioral health unit plastic sheeting was used for containment. This disruption regularly triggered patients' curiosity causing them to push on the enclosure, or try to see through into the work area. A guard was required until the project was completed.

### Hospital Anteroom

The use of hospital anteroom is an effective measure in reducing the risk of HAIs during renovation projects. An anteroom provides a layer of protection between construction sites and patients areas, keeping construction debris and dust contained. When a hospital anteroom set up is performed correctly, the anteroom can operate as a Class IV infection control area, as indicated by the Infection Control Risk Assessment Matrix. Many anterooms at Providence Portland Medical Center were constructed of plastic sheeting held up on zip poles and they were proving



to be cumbersome. If anyone bumped into the containment structure, the whole room threatened to fall down. In addition to this, the look of the plastic sheeting did not instill confidence in patients as they were undergoing care or surgery. Many would question if the plastic setup was safe.

## Breaching Firewalls

When making renovations or constructing additions in the hospital, firewalls were sometimes breached. This instantly reduced the integrity of the wall, increasing the risk of fire spreading to inhabited areas of the hospital, even with non-flammable plastic.

## The Solution

Mr. Overton and the environmental services team decided to remove all usage of plastic sheeting and sheetrock walls. They employed a temporary modular wall containment system and saw immediate benefits.

*Infection prevention and the safety of our patients and employees is our highest concern, we treat everyone with the same precautions. For many hospitals using a solid wall made of sheetrock is becoming the standard for construction projects due to fire codes. We knew that we needed a more sophisticated option that met our infection prevention standards, increased productivity, and adhered to industry codes.*

– David Overton

Overton elaborates on the improvements:

## Behavioral Health Unit

*The use of the temporary modular wall containment system in the behavioral health unit meant that we could build a containment area in an occupied room without disrupting the daily operations on the floor. Patients saw the walls and they looked like they belonged. This resulted in patients being calmer and we were able to work faster without a guard in place. This saved man hours, and offered less confusion for staff and patients.*

## Hospital Anteroom

*We build a clean room in highly susceptible patient areas so we don't open our work area to the patient environment. It needs to be sturdy so that our crew can change clothes and leave behind equipment that is contaminated with dust and debris. The temporary modular containment system was perfect because it locks into place. Not only is it a stable structure, it also looks great. Both staff and patients complimented the design and patients felt more confident in their care because of the safety and appearance of the environment.*

*Our infection preventionists are in awe of the temporary modular wall containment system's look, sound reduction capabilities, and cleanability. We are able to quickly disinfect the walls and take them onto the next job seamlessly. With plastic sheeting, it was difficult to ensure we disinfected all the movable areas because of folds and creases. Once the walls are disinfected, we can put up a 8' section with a door in 20 minutes. Constructing a wall could take the whole day and that isn't taking into consideration*

*the mess. Additionally, we use the temporary modular containment walls to block off corridors for 100 percent containment, this is extremely useful when completing flooring projects and meets fire code.*

### **Breaching Firewalls**

*The temporary modular containment system provides a much more substantial barrier when conducting a project that breaches a firewall. This is an added level of safety that is needed when the integrity of the firewall is in question. We are so confident in the performance of this system that all contractors are required to use our equipment when working in our hospital. Some of our contractors have cheaper versions but they don't compare.*

### **The Experience**

Providence Portland Medical Center is the flagship hospital for the use of the temporary modular containment systems. Due to the outstanding results and benefits, several other hospitals in the Portland, Oregon area are in the process of implementing the equipment.

*We have received so much positive feedback from behavioral health managers and charge nurses on the system. Additionally, we give every patient a questionnaire about the hospital environment and the temporary wall containment systems has definitely helped increase our ratings.*

**- DAVID OVERTON**

Fire & Life Safety Inspector  
Providence Portland Medical Center

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## **References**

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  - 2.** National Center for Biotechnology Information, U.S. National Library of Medicine
  - 3.** Medical Mycology , Volume 47, Issue Supplement\_1, 1 January 2009, Pages S210-S216
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