



Best Practices for Healthcare Lighting

Emergency Department



AMANDA

Director of Marketing



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Regional Manager - Central



CHAD

National Sales Manager

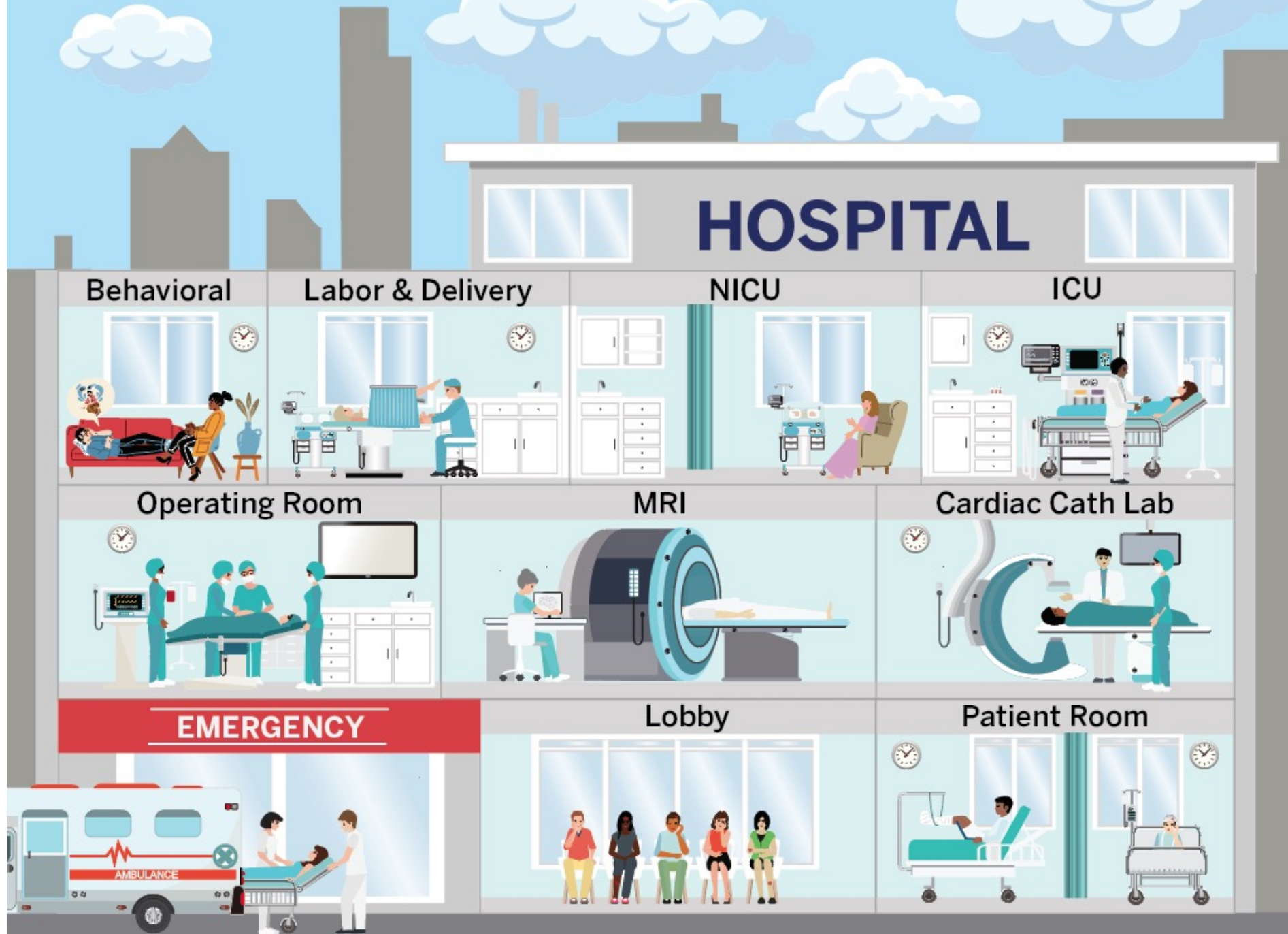


CHRIS

President

Key Focus Areas





HOSPITAL

Behavioral



Labor & Delivery



NICU



ICU



Operating Room



MRI



Cardiac Cath Lab



EMERGENCY



Lobby



Patient Room





“The Front Door of
the Hospital”

65%

of all hospital
admissions in the
U.S. come through
the Emergency
Department



“**Not Just** the Front Door of the Hospital”

51%

of all hospital care in the U.S. is delivered in the Emergency Department

Design and Layout

- Design and Layouts important to allow for efficient treatment
- Holistic approach needed
- Patient experience is key



Wellstar Kennestone

Design Factors for Emergency Departments

- Wait Times
- Safety & Security
- Behavioral Health
- Family Needs
- Mass Casualty



Cleveland Clinic

Changing Expectations

- Specialty settings for portions of patients with different needs



Wellstar Kennestone

Intake & Triage

- Multiple patient entrances:
 - Main hospital entrance
 - Walk-in ER entrance
 - Ambulance entrance
- Reception area has direct access to triage and “hyper-track” triage room
 - One key performance metric for every ED is **wait time**
 - A second key performance metric is **transfer time** for those admitted



Intake Design

- Comforting, calming, and hospitality-oriented
- Warmer color temperatures
- High light levels and good color-rendering for rapid visual assessment
- Good wayfinding



Wellstar Kennestone

Triage Design

- High light levels for rapid assessment, Can be fully enclosed rooms or “bays” with privacy curtains
- Tend to be illuminated by 2x2s and 2x4s
- Goal of this space is **not treatment, just rapid triage**
- Area for improvement: color rendering!



Fast Track

- “Fast Track” is a space-efficient and time-efficient care protocol for less severe illnesses and injuries
- Generally lower-cost construction compared to critical or specialty bays, utilizing privacy curtains here rather than glass doors



Lahey Hospital

Exam Pods @ Northwestern Memorial

- Single-occupancy pods for low-acuity patients with soothing cove lighting and “hidden” devices
- All equipment (other than gloves) sit behind smooth easy-to-clean remote-operated compartments
- Smooth surfaces + easy cleaning = **less infection!**



Greater Design Flexibility

- Fast Track rooms often offer greater flexibility than critical care bays, as less equipment is required
- Soothing design features and natural light can calm patients who might experience anxiety in a more “clinical” emergency care space



Kirlin Exam Lighting for “Fast Track” Pods

Narrow-beam fixed or adjustable high-color-rendering LED exam lights available in 5 color temperatures, up to 6500L



7" Fixed or Adjustable with
Regressed Lens



7" or 8" Fixed or Adjustable
with IP65-rated Trim/Lens



4"x9" or 5"x10" Dual Headed
Rectangular Exam

Critical Treatment

- Groupings of Treatment Rooms
- Consistent layout and equipment ensure maximum flexibility of these bays
- Majority of Emergency Room patients will be assessed and treated here
- Pod Design



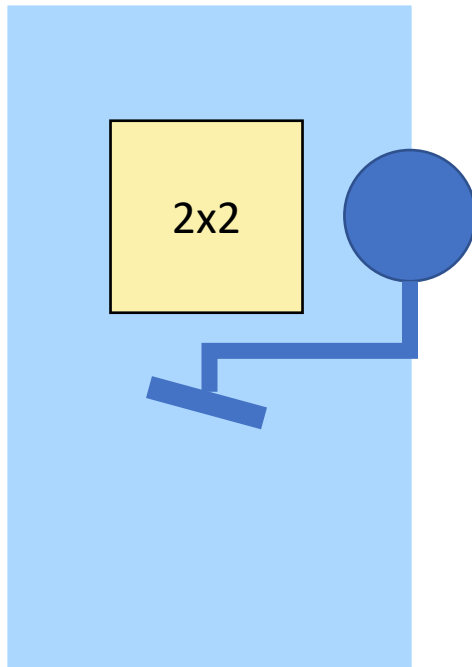
Lahey Hospital

The Most Common Lighting Design for an ED Bay...



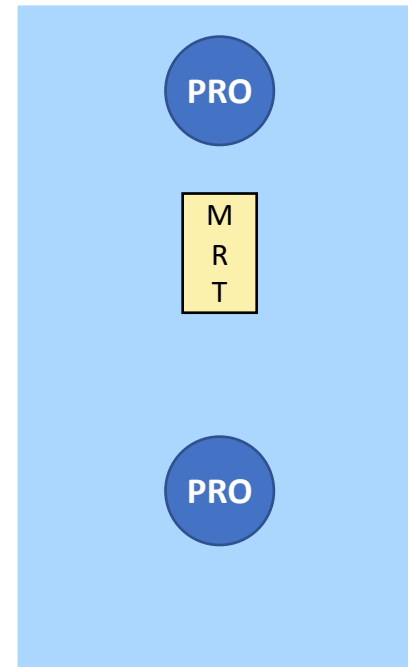
We Can Do Better!

Troffer & Articulating Arm



General over-bed illumination and
single-site adjustable exam lighting

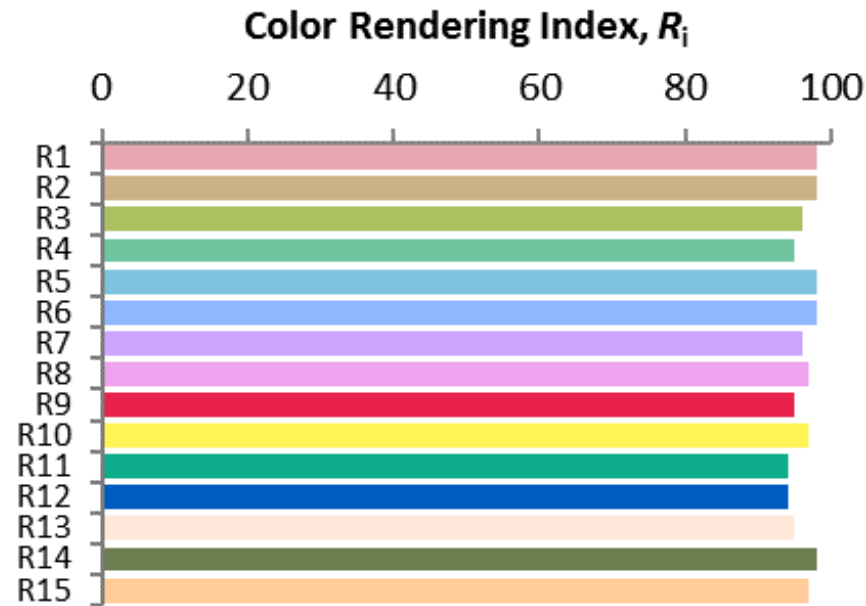
Exam Light & 2x PRO 35s



High-CRI over-bed illumination and
multi-site sterile, recessed adjustable exam lighting

High CRI, Low COI, in Multiple Chromaticities

The difference is **95 CRI** with ultra-high **R6, R9, R13** and **R15** and a COI of 2.7



3 Chromaticities (Color Temperatures)

3500K

Mid-White

Labor/Delivery
NICU

4100K

Cool White

ICU
Cath Lab

5000K

Ultra-Cool White

EP Lab
Hybrid OR

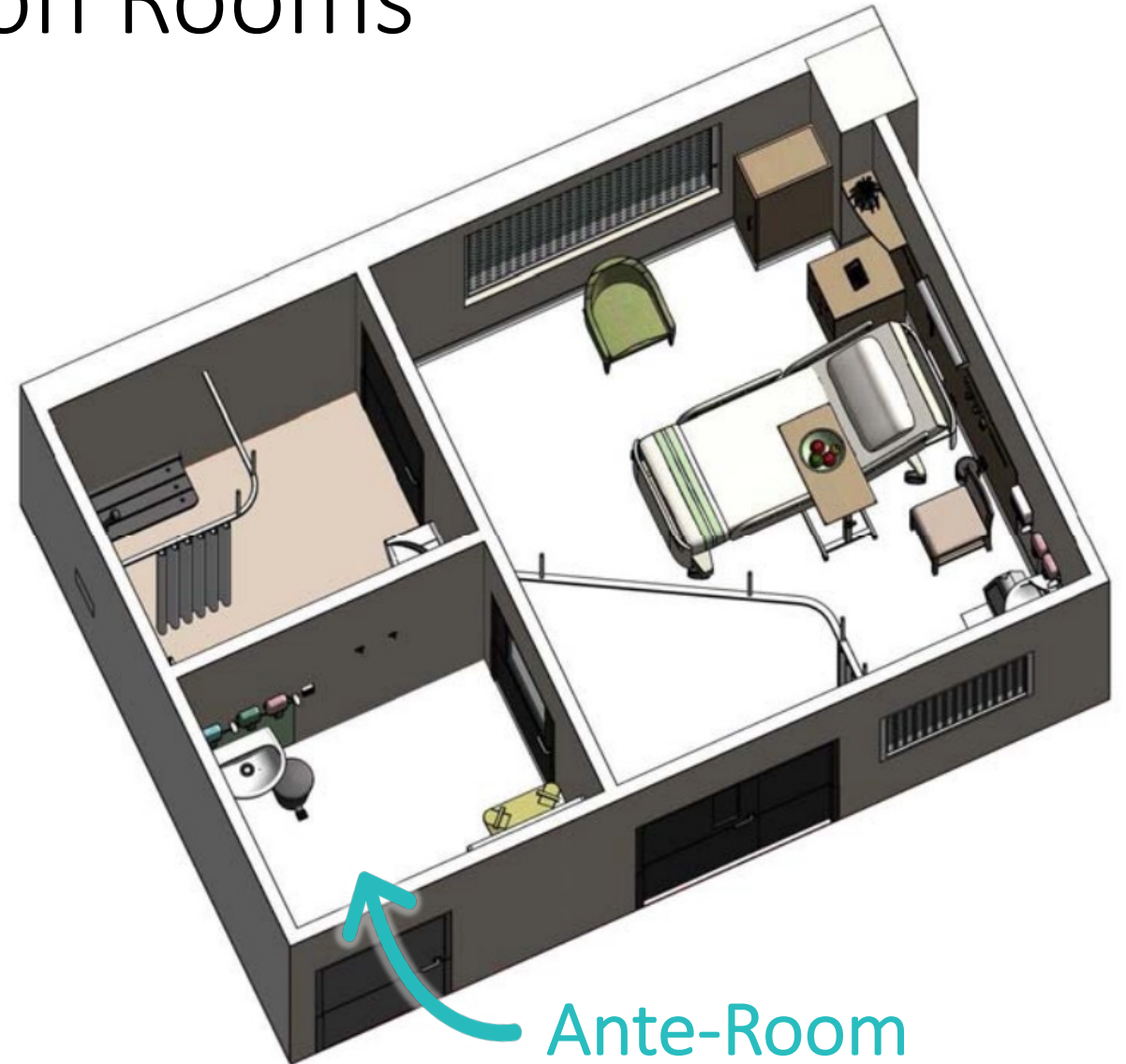
Isolation Rooms

- Easy Access for Infectious Patients
- Primary goal is to isolate patients who have symptoms of infectious disease
- Only patient space in the ED with their own patient bathroom
- Direct entrance door from ambulance bay for patients diagnosed as infectious by EMS workers
- COVID-19 crisis has led to re-assessment of the number of isolation rooms needed

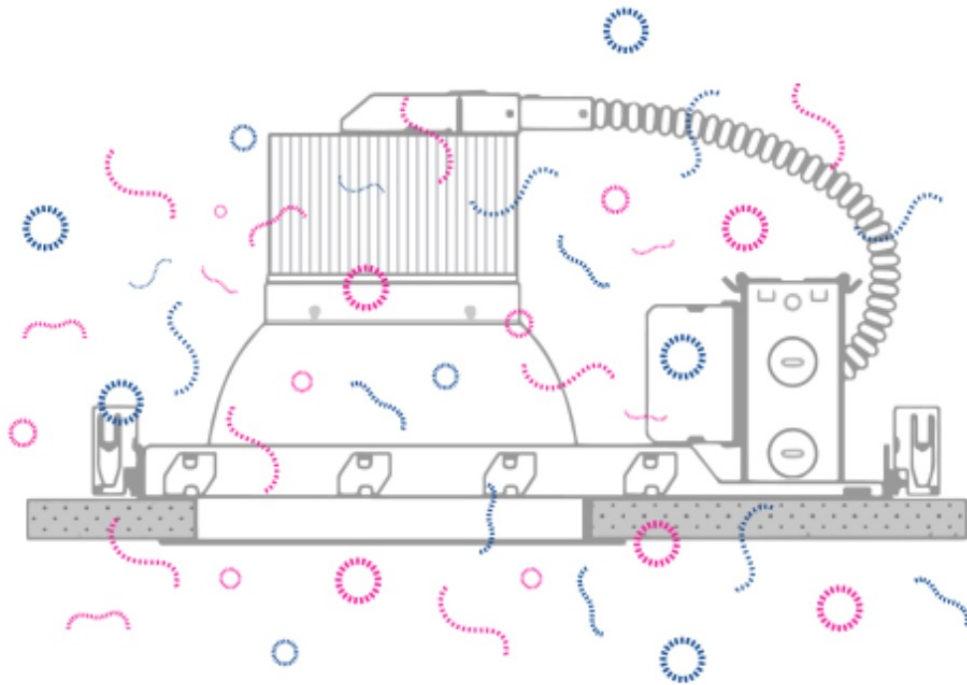


Negative Pressure Isolation Rooms

- Much like an Operating Room, these treatment areas are designed to reduce risk of airborne transmission of pathogens
- Located nearest to the entrance of Emergency Department to minimize contamination during patient transport
- **All perforations of ceiling and wall should be sealed**



Infection in the Hospital



NON-KIRLIN DESIGN

THE PROBLEM

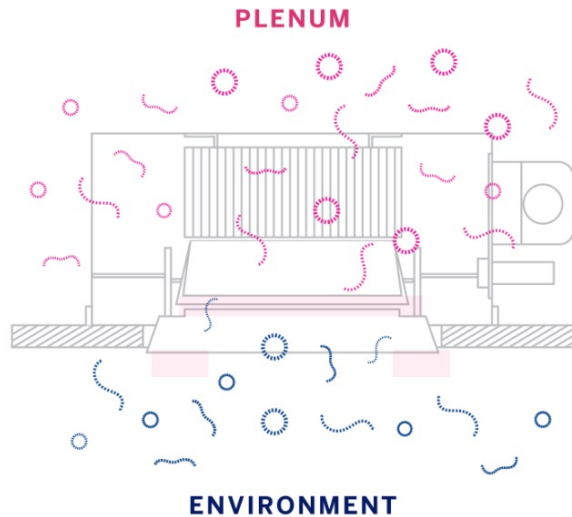
Without lensing, gasketing, or a sealed housing, pathogens and bacteria from the environment mix freely with pathogens and bacteria from the plenum, increasing the risk of widespread infection throughout the hospital.

Three Levels of Infection Control

LEVEL 1



Biogard™ Antimicrobial Finish



1

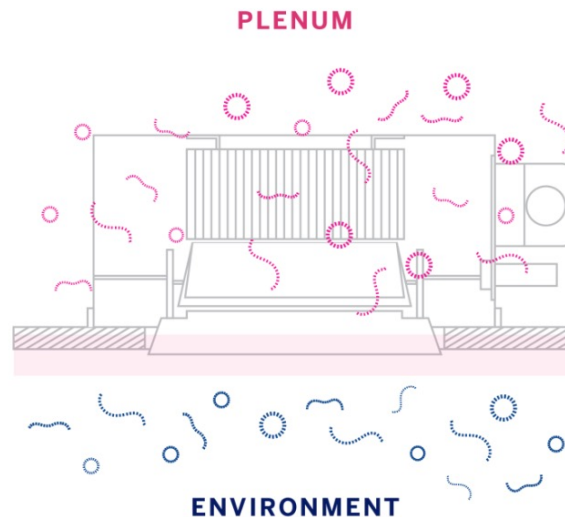
LEVEL 2



IP65 Sealed Trim



Biogard™ Antimicrobial Finish



2

LEVEL 3



ISO 5/Class 100 Sealed "Cleanroom"
Fixture with IP65 Trim



Biogard™ Antimicrobial Finish



3

Kirlin Sealed & Antimicrobial Lighting Solutions

Ambient



4" & 6" Downlight



7" Downlight, Exam Light



8" Downlight, Exam Light, Adj.

Clinical / Exam

INFRALED PRO 45



INFRALED PRO 35



INFRALED PRO 25



Behavioral Health

- 1 in 8 visits involve behavioral health issues and are taken to seclusion rooms
- Seclusion rooms require the same features and designs as mental health treatment rooms
 - Secured access
 - Anti-ligature fixtures and devices
 - Promote patient safety and comfort



Cleveland Clinic

Seclusion Rooms

- Typically lack flexible exam lighting
- Typical design with two behavioral-health flat panels is shown here in ED 17
- Rolling “garage door” separates medical equipment & devices from patient space when not in use



Seclusion Rooms



... but patients in these spaces have **all the same ailments & conditions** as patients in the rest of the ED

Kaiser Permanente ED Seclusion Room

2 Fixtures for
Multiple Trauma Sites

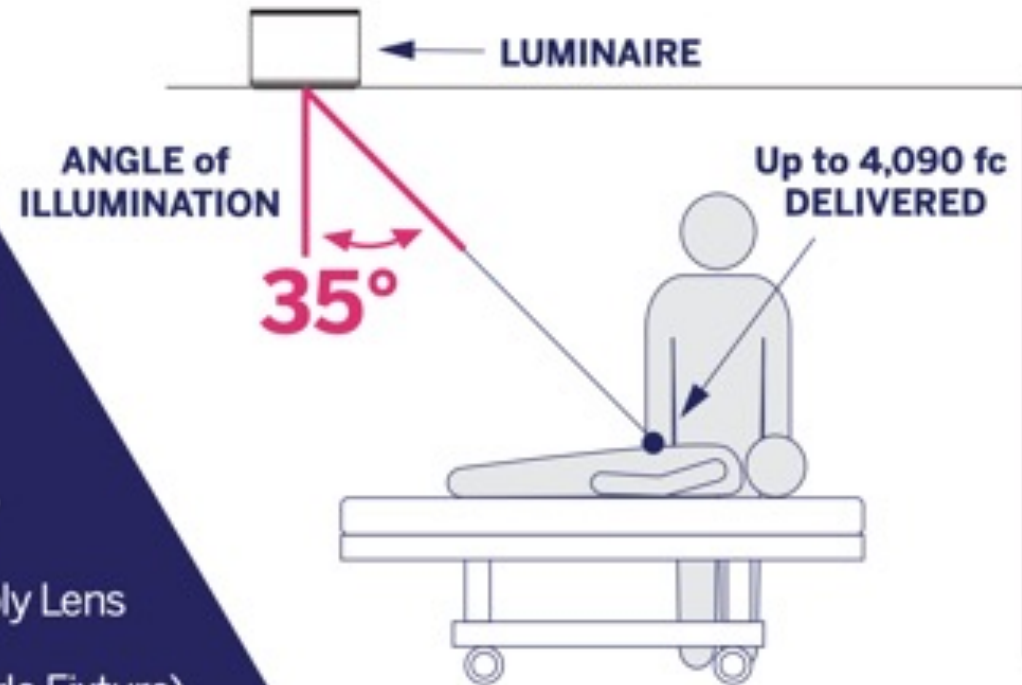


PRO 35V: IK10-Rated Motorized Exam Light

INFRALED® PRO



- 35° Tilt, 360° Rotation
- Fully Recessed System
- Ultimate Infection Control 
- Cool LED Beams, 95+ CRI
- Wall and Remote Controlled
- Adjustable Direction & Intensity
- IK10 Impact Resistant Trim with Poly Lens
- 4,090 fc (44,024 lux) on Task (Single Fixture)



Fixtures for Behavioral/Seclusion

4"



1000 – 2500L

6"



1000 – 7000L

7"



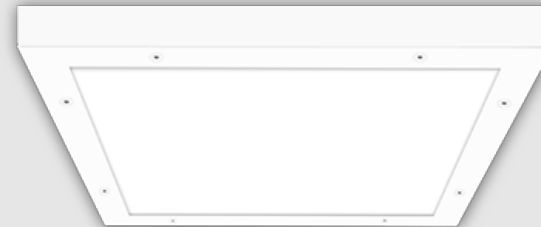
1000 – 7000L

8"



2500 – 6500L

Recessed 2x2
1500 – 2500L



Surface 2x2
1500 – 2500L

IK10 Impact Resistant • Ligature-Resistant

Trauma Bay(s)

- Trauma is a surgical emergency involving a severely injured person
- “Golden Hour” principle: if a trauma patient can make it to an operating environment within 60 minutes of injury, mortality is reduced by 25%
 - Goal is treatment **within 30 minutes**
- Level 1 Trauma Centers provide 24/7 surgical support across all disciplines



Wellstar Kennestone

CLEANROOM-RATED PERIMETER AMBIENT DOWNLIGHTS



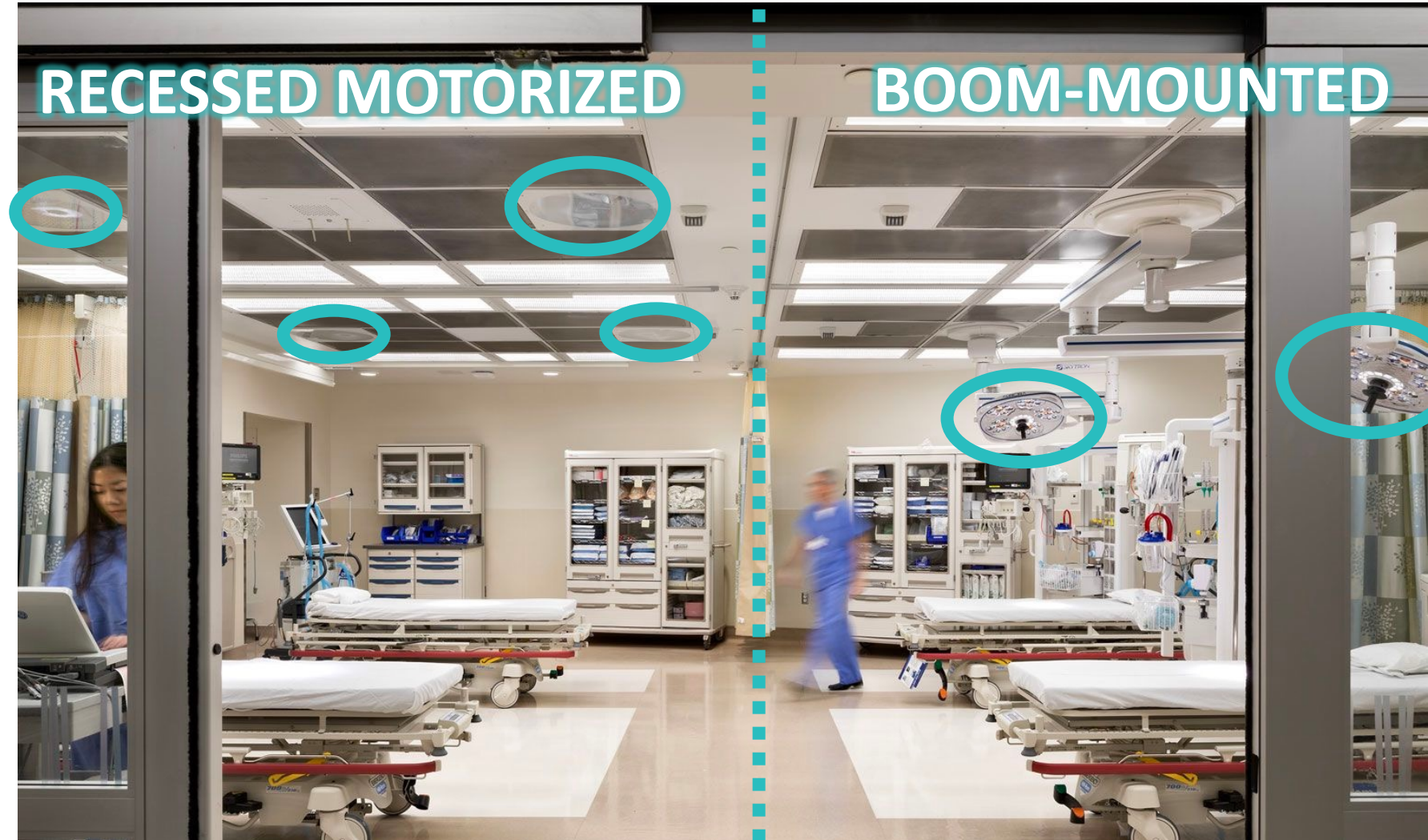
Lighting Requirements for Trauma Room

- Similar design to an operating theater
- Often support multiple patients
- Require sealed perimeter downlights for ambient lighting, sealed surgical troffers, and adjustable exam lights capable of illuminating **multiple trauma locations**



A Combined Approach to Clinical Lighting

- Use of **recessed motorized exam lights** enables instantaneous illumination of multiple sites.
- Single boom-mounted light does not.



PRO 45: Multiple Trauma Lighting

Kirlin Lighting's INFRALED® PRO 45 provides ideal lighting for Trauma bays in the Emergency Room

Enhanced Visual Acuity

- 360° rotation and up to 45° tilt for illumination of up to 4 sites (per controller)
- Fully dimmable & remote-adjustable

A Safer Environment

- Fully recessed with IP66 trim and sealed housing
- Sterile and easy to clean



Imaging

- Advanced imaging often used in patients where a physical exam is unreliable or impossible, such as:
 - Patients behaving erratically
 - Patients who are unable to describe symptoms
 - Trauma patients
 - Elderly patients



Beaumont Health

Two Advanced Imaging Techniques in ED

CT Scan



- ✓ Fastest diagnosis (15-30 second scan); no specialty lighting needed
- ✗ Exposure to radiation; Not as good for soft tissue diagnosis

MRI Scan



- ✓ Best diagnosis for soft tissue; no radiation exposure
- ✗ More costly; Specialty lighting, shielding, & equipment needed

SmartLED™ Lighting for MRI Scanners in the ED



The #1 Turn-Key MRI lighting system engineered to ensure **accurate scans** throughout the life of the magnet:

- **30 Fixtures:** Downlights, Adjustables, Wall Washers, Sconces, Surface Mounts, Scenic Panels, 2x2 White Panels, Linears, Color Changing
- SmartLED™ **Remote Driver Cabinet**
- SmartLED™ **RFI/EMI Filter** (Two Models)
- Emergency Power








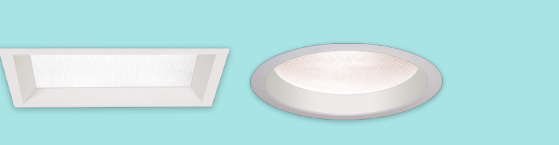



Trusted by:



MASSACHUSETTS
GENERAL HOSPITAL



Wrap Up: Emergency Department Lighting

	CLINICAL	AMBIENT	WAYFINDING
ISOLATION			<div>N/A</div> <div>but make sure to optimize for wayfinding <u>to the ED!</u></div>
TRAUMA			
CRITICAL			
FAST TRACK			
BEHAVIORAL			
IMAGING	N/A		

Wayfinding In the ED

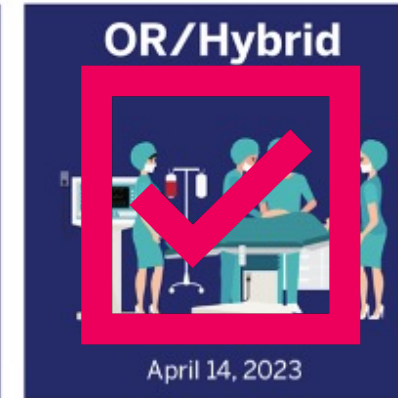
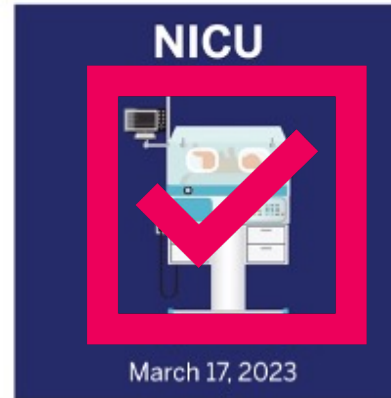


Methodist Health South

- Quickly determine ED location through
 - Signage
 - Use of materials
 - Lighting



Join Us Every Month, or On Demand!



A photograph of a modern building's interior, featuring multiple levels with curved balconies and glass railings. The space is illuminated by recessed ceiling lights, and the overall color palette is dominated by blues and greys, with some warmer tones from the railings and floor. The word "Questions?" is overlaid in a large, white, sans-serif font in the center of the image.

Questions?