Welcome! Today’s webinar will begin shortly.
Submit questions during today’s presentation using the Q&A tool located on the webinar control panel below.
Welcome

Shelly Schwedhelm, MSN, RN, NEA-BC
Welcome: Shelly Schwedhelm, MSN, RN, NEA-BC

Hierarchy of Controls: Shelly Schwedhelm, MSN, RN, NEA-BC

Types of Spaces Needed to Provide the Continuum of Care: Heather Kock, Manager of Facilities and Project Planning - Nebraska Medicine

Bellevue Hospital COVID-19 Facility/Engineering Response: Michael Rawlings, Chief Operating Officer NYC Health + Hospitals/Bellevue

Conversions at Nebraska Medicine: Eric Sherman, PE, LEED AP, CxA, HFDP

PPE Processes: Heather Kock, Manager of Facilities and Project Planning - Nebraska Medicine

Tips for Other Organizations Considering These Changes: Heather Kock and Eric Sherman

NETEC Resources: Shelly Schwedhelm, MSN, RN, NEA-BC

Questions and Answers with NETEC
National Emerging Special Pathogens Training and Education Center

Mission statement

To increase the capability of the United States public health and health care systems to safely and effectively manage individuals with suspected and confirmed special pathogens

For more information

Please visit us at www.netec.org
or email us at info@netec.org
NETEC Overview

Assessment
- Empower hospitals to gauge their readiness using Self-Assessment
- Measure facility and healthcare worker readiness using Metrics
- Provide direct feedback to hospitals via On-Site Assessment

Education
- Provide self-paced education through Online Trainings
- Deliver didactic and hands-on simulation training via In-Person Courses

Technical Assistance
- Onsite & Remote Guidance
- Compile Online Repository of tools and resources
- Develop customizable Exercise Templates based on the HSEEP model
- Provide Emergency On-Call Mobilization

Research Network
- Online Repository: Built for rapid implementation of clinical research protocols
- Develop Policies, Procedures and Data Capture Tools to facilitate research
- Create infrastructure for a Specimen Biorepository

Cross-Cutting, Supportive Activities

Online Repository
Built for rapid implementation of clinical research protocols
Innovative Engineering Controls to Contain COVID

Hierarchy of Controls

- Elimination
  - Physically remove the hazard
- Substitution
  - Replace the hazard
- Engineering controls
  - Isolate people from the hazard
- Administrative controls
  - Change the way people work
- PPE
  - Protect the worker with personal protective equipment

https://www.cdc.gov/niosh/topics/hierarchy/default.html
Types of Spaces Needed to Provide the Continuum of Care

Heather Kock, Manager of Facilities and Project Planning
- Nebraska Medicine
### Innovative Engineering Controls to Contain COVID

<table>
<thead>
<tr>
<th>Types of Spaces Needed</th>
<th>Large Spaces</th>
<th>Individual Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing</td>
<td>🔄</td>
<td>Procedure</td>
</tr>
<tr>
<td>Quarantine</td>
<td>🔄</td>
<td>Clinic</td>
</tr>
<tr>
<td>Acute Care</td>
<td>🔄</td>
<td>Postpartum</td>
</tr>
<tr>
<td>Comfort Care</td>
<td>🔄</td>
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Bellevue Hospital COVID-19 Facility/Engineering Response

Michael Rawlings, Chief Operating Officer
- NYC Health + Hospitals/Bellevue
COVID-19 Facility/Engineering Agenda

Bellevue - Basic Building Features

Patient Flow

Using Portable HEPA Units to Create

- Negative Pressure Isolation ICU Rooms
- Surge Capacity for COVID+ and PUI Patients on Nursing Units
- Turning Operating Rooms into Negative Pressure MICU beds
Bellevue Basic Building Features

- Bellevue Hospital was designed in the 1960s and opened in 1973
- 24 story “Cube”
- 1,433,393 GSF
- Each floor is an acre
- 100% fresh outside air and exhaust
- No recirculated air
SICU, CCU, MICU and NICU all shared 54 ICU beds on the 10th Floor.

Canceled elective surgeries and transferred SICU, CCU, and NICU to the PACU outside the OR Suite.

This allowed the Medicine ICU to expand from 12 beds to 54 beds.
Negative Pressure Isolation ICU Rooms

- Removed a window panel in each room and ducted a Portable HEPA unit directly outside making each ICU negative pressure.
- Relocated IV Pumps to outside the rooms.
- Allows providers, nursing and support staff to work safely in the unit without the need to wear PPE.
- Requires PPE only when entering the patient room.
Innovative Engineering Controls to Contain COVID

Negative Pressure Isolation ICU Rooms

- Canceled endoscopy procedures
- Converted the Recovery area and Procedure rooms into an additional 12 Medicine ICU using Portable HEPA units ducted to the existing internal isolation room exhaust system
Moved programs like Occupational Health Service (OHS), World Trade Center Clinic and Surgery Admin and Offices that were on old Nursing Units and re-opened 100 + M/S beds making many of the rooms negative pressure using Portable HEPA Units
Converting ORs into Negative Pressure ICUs

- Removed Operating Room equipment from the ORs and replaced with beds around the room
- Provided additional emergency power from other ORs
- Added portable monitors for each bed
- Installed a portable HEPA unit and ducted it to the low exhaust grill and rebalanced to make OR negative
- Will be used as the “Last Resort”
Progression of the Conversions at Nebraska Medicine

Eric Sherman, PE, LEED AP, CxA, HFDP
- Specialized Engineering Solutions
Identify the Spaces

More limiting factors than the ability to convert HVAC systems

Evaluating risk

Evaluating failure scenarios

Developing workplans and timelines
  • Prep, access, conversion, try to break, commission, turnover
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First Rooms

Identify the: Quickest, Easiest, Best

- Former Protective Environment Rooms
- Made to Hold Pressure
- Parts and Pieces

- ICU
- Lay out
- Redundancy

PATIENT ROOM

NURSING CORE

NON-COVID UNITS

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P P P
Innovative Engineering Controls to Contain COVID

First Rooms
Next Rooms

Next rooms are significantly more challenging

- Old systems
- Rooms not built for pressure
- Speed of transition
- Sacrifices
PPE Process

Heather Kock, Manager of Facilities and Project Planning
- Nebraska Medicine
Innovative Engineering Controls to Contain COVID

PPE Process – Core and Patient Rooms

- Doff gown and gloves
- Wear N95 and face shield for extended use period

Don Procedure Mask
- Don N95 Mask, face shield, gown and gloves

Doff gown and gloves
- Wear N95 and face shield

Don Procedure Mask

NURSING CORE

PATIENT ROOM

(-) (-)

NURSING CORE

NON-COVID UNITS

(+)
**PPE Principles – Offices and Breakrooms**

If social distancing guidance of 6 feet **CAN** be achieved in closed door office spaces, including breakroom spaces

Procedure mask is not required

*This guidance must be met to take off procedure mask to eat and drink

If social distancing guidance of 6 feet **CANNOT** be achieved in closed door office spaces, including breakroom spaces

Procedure mask is required

*Alternate location would be required to eat and drink
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Tips – Items to Keep in Mind

- Communicate with Subject Matter Experts, Study Every Night
- Frame Everything on Condensed Schedule
- Safety and Education of Facilities Operators (Signage)
- Engineering and Clinical Judgement
- Flexibility, Adaptability, and Speed
- Access to Labor and Material
- Checklists, Scripts, and Real-Time Cx
- Document in Detail for Return to Normal Operations
- Have a Cross Section of Talent and Facility Knowledge on Your Team
- Identify Separate Clean and Dirty PPE Spaces
- Evaluate PPE Principles when Determining Breakroom Spaces
- All Patient Room Doors Must Remain Closed for Safety and to Maintain Proper Air Balancing
NETEC Resources

Shelly Schwedhelm, MSN, RN, NEA-BC
NETEC will continue to build resources, develop online education, and deliver technical training to meet the needs of our partners.

**Ask for help!**

- Send questions to [info@netec.org](mailto:info@netec.org) - they will be answered by NETEC SMEs
- Submit a Technical Assistance request at [NETEC.org](http://NETEC.org)
Questions and Answers
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