



Title: **Testing Rooms for Negative Pressure**

Number EH&S –1-14

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PURPOSE: To prevent unnecessary airborne pathogen exposures to patients, visitors and staff.

POLICY: Assigned trained staff from designated areas will test negative pressure rooms according to these procedures and ensure these rooms are maintained at negative pressure relative to the corridors and adjacent areas.

SCOPE: Hospital, Ambulatory Surgery Center, and Ambulatory Care Pavilion.

PROCEDURES:

I. Responsibilities

- A. Properly trained assigned staff shall test negative pressure rooms using either a digital pressure monitor or smoke tubes. Rooms maintained under negative pressure in the following locations will be tested by staff assigned to that area:

<u>Locations</u>	<u>Assigned staff</u>	<u>Testing frequency</u>
Endoscopy	Endoscopy staff	Daily
Microbiology, TB Lab, 3-723	Laboratory staff	Daily
In-Patient Rooms/Anterooms	EH&S staff	As needed
All Negative Pressure Rooms (including the ED and ACP Cancer Center)	HVAC staff	Monthly

Note: Negative pressure rooms with mounted pressure gauges or indicators outside the room (Emergency Department and ACP Cancer Center) do not require daily checks.

- B. For In-Patient Rooms, Healthcare Epidemiology will contact Environmental Health and Safety (normal work days, Monday through Friday) if there are in-patient rooms occupied by known or suspected infectious patients. Environmental Health and Safety (EH&S) will be responsible for the testing and recordkeeping for these rooms. After an in-patient room has been tested, EH&S will notify Healthcare Epidemiology of results by e-mail.
- C. If assigned staff determines a room is not under negative pressure, they will immediately notify the Hospital Physical Plant's Heating Ventilation and Air Conditioning (HVAC) group at 4-2400, and Healthcare Epidemiology at 4-7430. HVAC will respond immediately in order to correct the air pressurization issue.
- D. Assigned staff will retest the room after HVAC has made any corrections.

- E. Assigned staff will maintain all testing documentation. HVAC will maintain all repair documentation.
- F. HVAC will test all negative pressure rooms monthly as per Hospital Mechanical Systems Policy & Procedure #1013 to ensure that negative pressure is maintained. A list of negative pressure rooms are provided in Appendix A. HVAC will maintain these test records.

II. Testing Procedures

- A. When a known or suspected infectious patient is present in the room being tested, staff performing the negative pressure testing must wear their hospital approved N95 respirator.
- B. Negative pressurization will be checked using a smoke tube or by using a digital pressure monitor. If the room has an anteroom, the pressure differential from the corridor to the anteroom, and from the anteroom to the room must both be tested.
- C. This test must be performed while the door and the windows in the room are closed. If the room shares a common bathroom with an adjoining room, the bathroom doors to both rooms must be closed. If room air cleaners are being used (including chemical fume hoods or biological safety cabinets), they should be operational.
- D. When using the smoke tube method, the tube is to be held near the bottom of the door and approximately two inches in front of the door. A small amount of smoke is generated by gently squeezing the bulb. The smoke tube should be held parallel to the door, and the smoke should be issued from the tube slowly to ensure the velocity of the smoke from the tube does not overpower the air velocity.
- E. If the room is at negative pressure, the smoke will travel under the door and into the room. If the room is not negative pressure, the smoke will be blown outward or will stay stationary.
- F. When using a digital pressure monitor, the attached procedures (Appendix C) shall be followed. Tubing from the monitor shall be placed under the door and the pressure differential is measured in inches of water. Equipment shall be maintained as per manufacturer's instructions.

INQUIRIES/REQUESTS: Environmental Health and Safety
L1-059 HSC
Zip 8017
Main Office: 444-6783
FAX: 444-6845

RELATED FORMS:

RELATED DOCUMENTS: List of Negative Pressure Rooms (Appendix A)

UH Hospital Mechanical Systems Policy & Procedure #1013
CDC, *Guidelines for Preventing the Transmission of Mycobacterium tuberculosis in Health-Care Settings*, MMWR Recommendations and Reports, December 30, 2005, Volume 54, No. RR17
CDC, Guidelines for Environmental Infection Control, 2003
AIA, Guidelines for Design and Construction of Hospital and Healthcare Facilities, 2006

Appendix A

List of Negative Pressure Rooms

IN-PATIENT ROOMS	
19N-070	17S-108, MICU
19S-170	17S-110, MICU
19S-148	16S-170, Tele bed
19S-146	16N-070, ICR
19S-138	15S-170
18N-070	15S-134 (portable HEPA)
18S-108	15N-034 (portable HEPA)
18S-104	15N-070
17N-034	13N-070
17N-032	12S-170, GCRC
	10N-070, Adult Psych
MATERNAL CHILD	
12N-070, Acute Obstetrics	9S-170, Obstetrics
11N-070	9S-102, Newborn nursery
11S-120, Peds ICU	8N-001, L&D
11S-124, Peds ICU	8S-102, NICU
9N-070, Obstetrics	8S-114, NICU
ANCILLARY DEPARTMENTS	
14N-27, Endoscopy	L4 ER-235, ED
14N-22, Endoscopy	L4 ER-5, ED
14N-18, Endoscopy	L4 ER-6, ED
14N-16, Endoscopy	L4 ER-7, ED .
14N-15, Endoscopy	L4 ER-8, ED
14N-05, Endoscopy	L4 Room 6, AICU
14S-107	L4 Room 7, AICU
L5-103, Pediatrics Urgent Care (Suite 8)	L3 Decon Room, CSS
L4 Room 7, Radiology	L3 EtO/Sterilizer Room, CSS
L4 ER-236, ED	L3-723, Microbiology (TB Lab)
	L2-739, Pathology
HEART CENTER - L5	
5-945	5-904
5-905	
ACP CANCER CENTER	
2-184 Pediatrics Oncology	2-044 Medical Oncology
2-185 Pediatrics Oncology	

APPENDIX B - Procedures for Testing Negative Pressure Rooms

1. Healthcare Epidemiology will phone EH&S and provide locations of in-patient rooms that require testing. Endoscopy and Labs will test their rooms daily, while Physical Plant will perform monthly tests.
2. Bring the following negative pressure testing equipment: DG-500 Pressure Gauge, your N95 respirator, and log.
3. In the corridor, don your fitted N95 respirator (3M 1860 or Inovel 1500 series respirator). Perform a user seal check.
4. Press “On” button on DG-500 Pressure Gauge. If not reading “PR/PR” mode on bottom left of screen, press “Mode” button once.
5. Press “Units” button to record in inches water column (“in w.c.” = inches of H₂O).
6. Press the “Time Average” button 3 times so “Long” is displayed on the right side of the screen.
7. Insert metal wand of pressure gauge under the door from corridor to room. Allow meter to take measurements for at least 30 seconds.
8. Press the “Hold” button. Record pressure reading. (Press “Light” button if corridor or anteroom is dark to help read display.)
9. Press the “Hold” button again. Then press the “Reset” button.
10. Repeat steps 7, 8 and 9 to test additional rooms.
11. Press “Off” button to turn off the digital pressure gauge.
12. Record data on the Negative Pressure Testing Log.
13. **After checking in-patient rooms, EH&S will:**
 - E-mail Terrie Gardiner of Healthcare Epidemiology (cc: Francina Singh and Yvonne Walsh) of results. EH&S will place copy of email into log book titled “Negative Pressure Room Inspection”.
 - If the room is positive pressure, then Healthcare Epidemiology must be contacted by phone at 4-7430.

For all room types: If a Room is Positive:

- Call 4-2400 UH Physical Plant and ask them to page a HVAC technician to help resolve the problem.
- Instruct HVAC staff to call you when the repairs are completed. Call Healthcare Epidemiology at 4-7430 to tell them that a repair is in progress. After adjustments are made, re-check the room.
- Follow-up with Healthcare Epidemiology to let them know that the negative pressure was restored.

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