

Appendix E
Air Sampling Requests and Report Form

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MICROBIOLOGY REQUISITION FORM FOR AIR SAMPLES6

AIR SAMPLING REQUESTS AND REPORT FORM

Air sampling for mold counts is collected on an ongoing basis, regardless of construction activities, in high-risk units in the hospital. Air sampling for mold counts may be collected at strategically important locations during the demolition and construction phases of projects. The purpose of air sampling is to assess dust and microbial mitigation at the project site. For lengthy projects, multiple air samplings may be required. If mold counts are found to be unacceptable, construction activities may be ordered stopped by HEIC. Air sampling for mold counts in areas exceeding acceptable ranges listed within this policy should be repeated after thorough project site evaluation and after corrections have been made in areas where mitigation of dust and microbial growth is compromised.

Department Responsibility

Department of Hospital Epidemiology and Infection Control (HEIC):

1. Performs patient surveillance by reviewing microbiology and autopsy reports, investigating nurse/physician reports, and performing chart review as needed.
2. Identifies areas requiring air sampling prior to construction utilizing a walk-through assessment with Design and Construction Project Manager.
3. Monitors and inspects construction projects (or delegates to trained Facilities personnel), and plans concurrent meetings as needed. Requests additional air sampling related to construction as needed.
4. Orders additional event-related air sampling (e.g. post water leakage in ceilings, ceiling tile collapse, etc.).

Office of Environment, Health and Safety (OEHS):

1. Performs a pre-sampling walk-through assessment and documentation of findings utilizing report form(s). (See Forms attached.)
2. Performs fungal sampling using an approved bioaerosol sampler or other equipment deemed appropriate by the Industrial Hygiene (IH) team. Performs particle sampling using an approved handheld particle counter.
3. Obtains particle counts when appropriate or by request from HEIC.

Office of Design, Construction and Facilities Management:

1. Advises HEIC of upcoming construction or maintenance projects.
2. Advises HEIC of dates of specific construction and demolition phases to allow timely ordering of air sampling.

Monitoring Strategy

Routine and Ad-hoc Air Sampling:

- a. **Routine sampling** will be performed on a monthly basis on the units providing care to our most at risk patient populations. Services designated for routine air sampling include adult and pediatric hematology/oncology, adult transplant services, and pediatric bone marrow transplant. A list of sites for routine sampling will be generated by HEIC and maintained in OEHS.

Changes or addition to these locations should be communicated using the MICROBIOLOGY REQUISITION FOR AIR SAMPLES form (see form at end of Appendix E).

- b. **Ad-hoc sampling** may be requested by HEIC as needed (i.e. in response to an identified case of healthcare-associated mycosis or a potential cluster of fungal disease, construction project – see below). Specific locations and requested date of sampling will be submitted to OEH&S via e-mail as described below using the “MICROBIOLOGY REQUISITION FOR AIR SAMPLES.”
- c. **Sampling** will be conducted and samples submitted to the microbiology laboratory by OEH&S personnel as described below.
 1. The completed “MICROBIOLOGY REQUISITION FOR AIR SAMPLES” form shall be returned via e-mail (preferred) or fax (353-4348) to HEIC within 3 days of sampling.
 2. The completed “MICROBIOLOGY REQUISITION FOR AIR SAMPLES” form shall be returned to the submitting staff person (preferred) or faxed (353-4348) to HEIC within 3 days of sampling.
- d. **Sampling Outside Air:** A sample of outside ambient air (e.g. ER parking lot and/or loading dock) shall be collected with each routine or ad-hoc sampling as a control for the testing media and device.

Construction Projects

- a. **Air sampling** shall be based upon a completed Infection Control Risk Assessment for each project.
 1. Design and Construction shall submit an Infection Control Risk Assessment for each project to HEIC during a pre-construction meeting, in advance of initiation of the project.
 2. IC personnel will complete the air sampling request form and e-mail to personnel designated by OEH&S. OEH&S will notify HEIC of changes to designated personnel.
 3. Should air sampling be needed on an emergent basis, the Director of OEH&S shall be paged in addition to the e-mail submission of the request.
 4. Completed “MICROBIOLOGY REQUISITION FOR AIR SAMPLES” form shall be returned to HEIC as described above.
- b. **Locations for sampling** will be decided during construction/maintenance project planning and site walk through. Those locations will be detailed on the MICROBIOLOGY REQUISITION FOR AIR SAMPLES form submitted to OEH&S. In general, air sampling is obtained outside the barriers.
- c. **Outside ambient air sampling** a sample of the outside ambient air (ER parking lot and/or loading dock) will be collected with each routine sampling as a control for the testing media and device.
- d. **Timing of sampling:**
 1. Routine sampling throughout the construction phase in accordance with the recommendations of HEIC

2. IC may arrange in advance with OEH&S the desired testing dates for specific locations when repeat sampling will be needed during a construction project. Such arrangements shall be made in writing to the designated certified industrial hygienist.
3. OEH&S desires 48-hour notice to plan accordingly, but will attempt to fulfill every request as reasonably feasible.

e. *Submitting Samples:*

Each sample or series of samples will be submitted to the microbiology laboratory and the completed request/report form returned via e-mail or fax (353-4348) to the HEIC office within three days of the sampling date.

Investigation of the air quality of room(s) of patient(s) diagnosed with or suspected of having a healthcare-associated fungal infection of the lower respiratory tract shall be requested by HEIC as follows:

- a single sample in the room(s) occupied by the patient at symptom onset
- inspection of fan room with filtration or any part of the mechanical ventilation system that supplies the involved patient care room(s).
 - a. HEIC will notify OEH&S of the area(s) to be sampled via the “AD-HOC AIR SAMPLING REQUEST FORM.” Sampling shall be scheduled to meet the needs of the specific unit/department involved.
 - b. Each sample shall be submitted to the microbiology laboratory and the completed “AD-HOC AIR SAMPLING REQUEST FORM” returned via e-mail or fax to the HEIC office within three days of the sampling date.

Sampling Procedure:

1. The involved unit/department(s) shall be notified by OEH&S of approximate date/time to expect sampling to occur.
2. Items to be addressed in the “Observations” section of the request/report form by the OEH&S staff person include physical condition of the area, amount of traffic, time and weather conditions, open vs. closed windows and doors, etc. Observations should include factors associated with increased risk of the presence of fungal spores such as plants, holes in ceilings or walls, or obviously dusty conditions.
 - a. Sampling with the equipment designated by the IH team will be completed according to the manufacturer’s instructions.
 - b. Unless otherwise specified, all air sampling requests by HEIC will include a particle count of the locations to be sampled as well as the outside ambient air sample for a control.
4. To assure proper result delivery, air sampling specimens submitted to the microbiology laboratory by OEH&S personnel will be accessioned under the physician code for OEH&S. HEIC will retrieve results directly from the laboratory information system.

Equipment for Sampling:

1. Bio-aerosol sampler
2. Handheld particle counter
3. Temperature and relative humidity meter

Reporting of Results:

1. Microbiology will report culture results after 5 days of incubation to HEIC via routine laboratory resulting methods.
2. Ranges of Acceptability:
 - a. Bio-air sampling results of 0-10 CFU will be considered within the acceptable range.
 - b. Results of greater than 10 CFU will be considered above the acceptable range. Areas with results of greater than 10 CFU shall be sampled again by OEH&S and investigated by HEIC for possible sources. OEH&S will be notified of the need for repeat sampling via the "AD-HOC AIR SAMPLING REQUEST FORM" as described above.
 - c. Should repeat air sampling again reveal elevated fungal counts, HEIC, OEH&S, the Project Manager and/or Facilities Management will investigate for possible sources and determine what, if any, interventions are to be taken. Elevated fungal counts and intervention strategies will be discussed at monthly ICC meetings. .
3. HEIC will maintain a database of accumulated fungal counts and relevant information collected at the time of sampling.
4. Regular reports, including walk-through assessments/plans, culture results, interventions and written evaluations will be completed by HEIC staff. As appropriate, these reports will be sent to the Infection Control Committee, Office of Environment, Health and Safety, or any other pertinent committee/ department.



**HOSPITAL EPIDEMIOLOGY AND
INFECTION CONTROL:
GUIDELINES FOR CONSTRUCTION/RENOVATION/DEMOLITION
PROJECTS AND ENVIRONMENTAL CONTROL OF ASPERGILLOSIS
AND OTHER NOSOCOMIAL INFECTIONS**

POLICY 5.1E
Issued: 12/06
Last Approval: 12/12

MICROBIOLOGY REQUISITION FOR AIR SAMPLES
(one copy for lab; one copy retained by EH&S)

MOP # 1641

If MOP is unknown, please provide the following:		Questions? Please contact:	
Bill-To Department	HEIC		415-502-7361
Budget Account # (ZZ Account #)			415-476-0547
PI or MD 5-Digit Code			

Collection Date		Collection Time	
SF Gate Weather	Temperature	Humidity	
Reason for Request:			

For Laboratory Use Only Order Code: SDES: AIR SREQ: Enter Site Sampled

SAMPLE # – LOCATION & TIME SAMPLED	TEMP (F°) & RELATIVE HUMIDITY (%)	Total Particle Count (>0.3 microns)	NOTES/OBSERVATIONS
1.	/		
2.	/		
3.	/		
4.	/		
5.	/		
6.	/		

FOR PARTICLE COUNTS: Flow rate (L/min): _____ Volume Collected (L)/Sample: _____
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