

Infection Control Assessment Exercises

16 November 2006

Site #1:

Evaluate bronchoscopy suite (multiple rooms):

Administrative controls?

How many procedures?

Criteria for procedures?

General IC procedures?

Environmental (engineering) controls?

Sketch rooms (describe use)

Include UV lights, ventilation grilles, air cleaners, . . .

Measure room dimensions

Measure ventilation

Calculate air exchange rate in on booth

Measure UV (if installed)

Respiratory protection?

Site #2:

Evaluate one patient room and one portion of the corridor:

Administrative controls?

How many patients in department?

Smear status (+/-)

Culture status (+/-)

Drug-sensitive, poly-resistant, multi-drug resistant, extensively-drug resistant, unknown, suspect, etc.

General IC procedures

Environmental (engineering controls)?

Sketch room and hallway

Include UV lights, ventilation grilles, air cleaners, beds, . . .

Measure room dimensions

Measure UV in room (1 meter from light, continue at 1 meter intervals to the window). Also measure in corners and at each bed.

Make measurements at eye level (both standing and lying down).

Measure UV in corridor (1 meter and at wall, eye level. Then move up the corridor, at 1 meter intervals, until you get to the next fixture.

Repeat in other direction.)

Respiratory protection?

Site #3:

Evaluate portion of laboratory room:

Laboratory room:

Administrative controls?

Laboratory procedures?

Number?

Access?

IC procedures?

Environmental (engineering) controls?

Room:

Sketch room

Include UV lights, ventilation grilles, air cleaners,
hoods, equipment, . . .

Measure room dimensions

Smoke test lab door, ventilation grilles, and overall
room air.

Measure airflow of supply and exhaust grilles.

Measure UV in room (if installed)

Biological safety cabinet:

Sketch hood, including dimensions (over all, and hood
opening)

Record make, model, re-certification data

Smoke test hood

Measure velocity of air going into hood

Measure velocity of air coming down the hood

Measure particles inside and outside the hood

Measure UV in hood

Respiratory protection?

Site #4:

Evaluate sputum collection area:

Administrative controls:

Number and types of procedures?

IC procedures?

Environmental (engineering) controls?

Sketch sputum induction rooms (both sides, including the booths)

Include UV lights, ventilation grilles, air cleaners, . . .

Measure room dimensions

Measure airflow through a portable filter unit

Smoke test doors to booths and to corridor

Calculate air exchange rate in on booth

Measure UV in booth 1/2 meter intervals from light to the floor.

Respiratory protection?

Infection Control Assessment of a Bronchoscopy Suite

Date 16 November 2006 Time _____
Location: _____ Room number _____
Purpose of room: _____

Sketch room. Include main room, anteroom, hallway, UV lights, room air cleaners, other controls windows, doors, bed, and major furniture.

Bronch Room 1 dimensions: Width 5.96 m Depth 6.38 m Ceiling 2.55 m
Prep Room dimensions: Width 2.75 m Depth 6.38 m Ceiling 2.55 m
Bronch Room 2 dimensions: Width 5.96 m Depth 6.38 m Ceiling 2.55 m
(List all dimensions on drawing)

Mark ventilation pipes/grilles on drawing with colored pen. Label as supply air or exhaust air.

Check negative pressure (smoke test):

Room to bathroom: _____ Positive _____ Negative
Room to hallway/anteroom: _____ Positive _____ Negative
Anteroom to hallway: _____ Positive _____ Negative

Measured ventilation:

Room supply flowrate #1 (S1) _____ m³/hr
Room supply flowrate #2 (S2) _____ m³/hr
Room supply flowrate #3 (S3) _____ m³/hr
Room exhaust flowrate #1 (E1) 600 m³/hr
Room exhaust flowrate #2 (E2) _____ m³/hr
Room exhaust flowrate #3 (E3) _____ m³/hr

Calculated air exchange rate(s):

Room: _____ air changes per hour (ACH) (Total flowrate / Room volume)

Infection Control Assessment of a Patient Ward/Room

Date 16 November 2006 Time _____

Location: _____ Room number _____

Purpose of room: _____

Sketch room. Include main room, anteroom, hallway, UV lights, room air cleaners, other controls windows, doors, bed, and major furniture.

Room dimensions: Width 5.88 m Depth 9.88 m Ceiling 2.87 m

(List all dimensions on drawing)

Mark ventilation pipes/grilles on drawing with colored pen. Label as supply air or exhaust air.

Check negative pressure (smoke test):

Room to bathroom: _____ Positive _____ Negative

Room to hallway/anteroom: _____ Positive _____ Negative

Anteroom to hallway: _____ Positive _____ Negative

Measured ventilation:

Room supply flowrate #1 (S1) _____ m³/hr

Room supply flowrate #2 (S2) _____ m³/hr

Room supply flowrate #3 (S3) _____ m³/hr

Room supply flowrate #4 (S4) _____ m³/hr

Room exhaust flowrate #1 (E1) _____ m³/hr

Room exhaust flowrate #2 (E2) _____ m³/hr

Room exhaust flowrate #3 (E3) _____ m³/hr

Room exhaust flowrate #4 (E4) _____ m³/hr

Calculated air exchange rate(s):

Room: _____ air changes per hour (ACH) (Total flowrate / Room volume)

Anteroom: _____ air changes per hour (ACH) (Total flowrate / Room volume)

Ultra-Violet (UV) Light Measurement in Patient Ward/Room

Date _____ Time _____
 Location: _____ Room number _____
 Purpose of room: _____

Temperature: _____ °C Relative Humidity: _____ %

UV Fixture information:

Fixture model: _____
 Lamp data: T8 30W GUV or other _____
 Number of lamps: _____
 Number of fixtures: _____

UV measurements:

Distance from Lamp (facing lamp)	Distance from Lamp (centerline to right)	Distance from Lamp (centerline to left)	Maximum Irradiance $\mu\text{W}/\text{cm}^2$
1			
2			
3			
4			
5			
6			
7			

Location	Maximum Irradiance $\mu\text{W}/\text{cm}^2$	Location	Maximum Irradiance $\mu\text{W}/\text{cm}^2$

UV Dose calculations:

$$\begin{array}{l} \text{Irradiance} \cdot \text{Time} \\ \text{_____ } \mu\text{W}/\text{cm}^2 \cdot \text{_____ sec} \\ \text{_____ } \mu\text{J}/\text{cm}^2 \end{array}$$

Note: Maximum UV (254 nm) dose for an 8-hour, continuous, direct exposure is 6 000 $\mu\text{J}/\text{cm}^2$

Infection Control Assessment of a Laboratory Room

Date 16 November 2006 Time _____
Location: _____ Room number _____
Purpose of room: _____

Sketch room. Include main room, anteroom, hallway, UV lights, room air cleaners, other controls windows, doors, bed, and major furniture.

Room dimensions: Width 3.07 m Depth 3.32 m Ceiling 2.78 m
(List all dimensions on drawing)

Mark ventilation pipes/grilles on drawing with colored pen. Label as supply air or exhaust air.

Check negative pressure (smoke test):

Room to hallway/anteroom: _____ Positive _____ Negative
Anteroom to hallway: _____ Positive _____ Negative

Measured ventilation:

Room supply flowrate #1 (S1) _____ m³/hr
Room exhaust flowrate #1 (E1) _____ m³/hr

Calculated air exchange rate(s):

Room: _____ air changes per hour (ACH) (Total flowrate / Room volume)
Anteroom: _____ air changes per hour (ACH) (Total flowrate / Room volume)

Infection Control Assessment of a Biological Safety Hood

Date 16 November 2006 Time _____
 Location: _____ Room number _____
 Manufacturer: _____
 Model: _____
 Serial number: _____
 Type: _____
 Re-certification information: _____

Smoke test. Into BSC, all corners, across front (high and low), and when moving hands in and out).

Sash opening dimensions: Width _____ Height _____

Inward Velocity (m/s). Into BSC, across front (high and low):

Downward Velocity (m/s). Above opening of sash:

Filter efficiencies: Measure particles in room, then inside BSC along gasket and across filter.

Particle size	Outside BSC	Inside BSC	Exhaust filter
	#/L	#/L	#/L
0.3 μm			
0.5 μm			
0.7 μm			
1.0 μm			
3.0 μm			
5.0 μm			

UV level (μW/cm²): Measure minimum UCGI level (generally, front corners). Generally, minimum level is 40 μW/cm².

_____ μW/cm²

Infection Control Assessment of a Sputum Collection Suite

Date 16 November 2006 Time _____
Location: _____ Room number _____
Purpose of room: _____

Sketch room. Include main room, anteroom, hallway, UV lights, room air cleaners, other controls windows, doors, bed, and major furniture.

Room dimensions: Width 2.39 m Depth 5.93 m Ceiling 2.89 m
Sputum booth dimensions: Width 0.81 m Depth 0.91 m Ceiling 2.06 m
(List all dimensions on drawing)

Mark ventilation pipes/grilles on drawing with colored pen. Label as supply air or exhaust air.

Check negative pressure (smoke test):

Room to bathroom: _____ Positive _____ Negative
Room to hallway/anteroom: _____ Positive _____ Negative
Anteroom to hallway: _____ Positive _____ Negative

Measured ventilation:

Room air cleaner flowrate 40 m³/hr

Calculated air exchange rate(s):

Room: 0 air changes per hour (ACH) (Total flowrate / Room volume)
Booth: _____ air changes per hour (ACH) (Total flowrate / Room volume)