

Are They Nuts!!

Surgical Training in Hotels

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Disclosures



- OTI Surgical Training Lab
- 6 stations
- Walk in Refrigerator
- Washer Sterilizer & Autoclave
- Lab is Secure
- 3 conf. rooms.
- 2 Changing Rooms
- 4 C-Arms

Ethics

- We have an ethical obligation to the living



How I Got Here

- Dismay
- Passion
- Knowledge of history
 - Legionnaires Disease
 - 14 Million people die each year from disease

Questions from Ed

- What regulatory body inspects the site?
- Why hotels? There aren't enough labs?
- How do they secure cadavers from the public?
- What is their Infection Control Protocols?
- How do they deal with proper ventilation?
- Where do they change?
- How do they explain hazardous signs posted outside AS Required?
- Whose liable if there is an outbreak?



Public Health and Safety

- Can you answer all of these questions, if no why not?



Setting up a Lab

- Lockable doors
- Impermeable work surfaces
- Sealed/locked windows
- Access to an autoclave
- Hand washing station (sink, soap/alcohol gel and paper towels)
- Eyewash
- Load bearing furniture (not covered in absorbent material)
- Negative air pressure



Who Oversees this Industry?



California Human Tissue Inspectors

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- Covers the entire State
- Only investigates centers for live transplantation
- There is no one to cover medical education or research

Bioskill Labs



Securing Cadavers



I just don't know.
• Guarded refrigerated truck?

Placard



Biosafety Level 2
Authorized Personnel Only
Hazard Identity e.g. Human Cadavers
CONTACT PHONE

Where do they change?



Legionnaires' Disease

- Named in 1976 when 221 people contracted it, with 34 deaths at the while attending a conference at Bellevue-Stratford Hotel.
- Lives in large central air-conditioning systems and thrives in stagnant warm water.
- Causes disease when inhaling contaminated mist or vapor.
- Up to 3 in 10 people who contract Legionnaires' disease will die from it
- Legionnaires' disease and Pontiac Fever are perfect for central air-conditioning, especially in buildings like hotels and hospitals where people gather in large numbers and make heavy demands on the heating and cooling systems.
- CDC, up to 18,000 Americans are hospitalized with the disease each year, it's obvious that the best course is preventative—as in, stopping the disease from ever happening—rather than responsive.

HVAC Hospitals & Labs

OR's, Autopsy and BSL2 Lab*

- According to the *ANSI/ASHRAE* "Air shall not be recirculated into other spaces."
- "12 air changes per hour on supply air as a minimum with NO recirculation permitted."
- All expunged air must go through a triple HEPA Filtration system eliminating 99.9% of all contaminants



HVAC Hotel Conference Rooms

- *ANSI/ASHRAE regulates 4 to 6 changes per hour.*

According to Building Inspector:

- Up to 80% of air can be recirculated
- HEPA Filters are not required for internal air
- Hotels tend to have them for outside air coming in to eliminate dust.

Safety Protocols

- Hazard Communication Statement
- Personal Protective Equipment (PPE)
- Procedures / Safety Practices
- Decontamination
- Spill Procedures
- Post Exposure Protocol

What are the risks of infections while working with cadavers

- Depends on where you are.



Risk

- Risk of exposure to infectious agents while working with cadavers and tissues is always present and can never be completely eliminated.
- The same organism that was present in the human host will remain in the deceased
- Length of viability...???

Rejecting Cadavers

- Most body donation centers have written policies rejecting cadavers with known bloodborne pathogens, infections, or prion diseases. In practice, however, some body donation centers appear not be following these policies.
- No one is regulating these places.



How often do donor bodies at body donation centers have infections?

- There has been no systematic study of these centers, so there is no accurate answer. However, the CDC anecdotal information puts the rate as low as 8% and as high as 15% for one type of infection.



Hazards with Human Tissue

- What we test for: Bloodborne Pathogens (BBP) – are infectious microorganisms present in human tissue that can cause disease in humans, such as:
 - Hepatitis B
 - Hepatitis C
 - HIV infection
- What we don't test for:
 - Malaria
 - Syphilis
- Infectious aerosols such as tuberculosis and meningococemia.
- Plus ???



Other Risks with Human Tissue

- Prion diseases
 - such as transmissible spongiform encephalopathies such as Creutzfeldt-Jakob disease (CJD)
 - bovine spongiform encephalopathy [Mad Cow disease]
- Bacteria,
 - such as Shigella
 - Group A Streptococcus
 - Staphylococcus aureus (MSSA and MRSA).

no cases of autopsy-acquired CJD have been documented

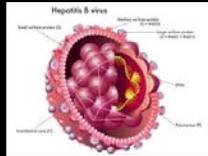
Testing

- What we test for:
 - Hepatitis B
 - Hepatitis C
 - HIV infection
- What we don't test for:
 - Malaria
 - Syphilis
 - And everything else...

Risk of bloodborne infection following a needle-stick

The risks from a single needle stick from a cadaver or infected tissue are unknown; however, the risk of infection from an infected living individual has been estimated to be:

- Hepatitis B, between 6% and 30% in those who have had no prior hepatitis B vaccination;
- Hepatitis C, 1.8%
- HIV infection, 0.3%



• Embalming fluids do not eliminate the risk of infection

Survival

- Studies have shown HIV
 - Has remained viable for up to 7 days on surfaces,
 - Blood 16.5 days postmortem
- HBV and HCV
 - Can survive 7 days outside of the human body
 - Have remained viable for up to 14 days.



Other Risks



- Cadavers infected with HIV are often infected with opportunistic infections, such as tuberculosis, which may be more infectious than HIV infection itself.

TB Survival

- TB can survive for months on dry inanimate surfaces.
- Once aerosolized, the TB can remain viable for extended periods of time.
- Only the re-introduction into air of the TB organism, and breathing the organism into the lungs can cause infection.
- Findings suggest that even when the chest cavity from a cadaver is not opened up; handling intact cadavers can present an increased risk of tuberculosis.

A Picture is worth a 1000 words



A Picture

- There is no concept of sterility procedures
- PPE is not universally enforced
- Punctures in the plastic
- Someone walking in a suit
- Plastic does not cover the entire floor
- Most hotel tables are simple wood tops.
- Cloth walls
- You cannot sterilize instrumentation



Carpeting/Cloth Furnishings

- According to the CDC carpeting cannot be reliably disinfected, especially after spills of blood and body substances.



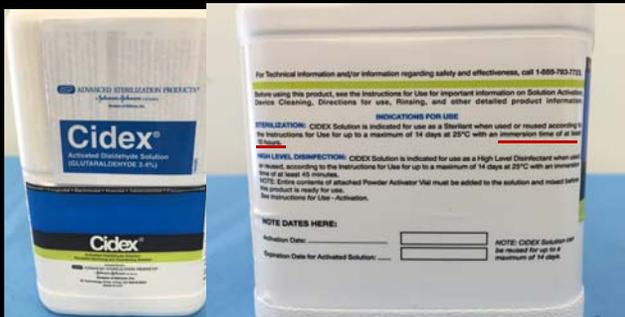
Several studies have documented the presence of diverse microbial populations, primarily bacteria and fungi, in carpeting. Cloth furnishings pose contamination risks similar to those of carpeting in areas of direct patient care and areas where contaminated materials are managed.

Shipping

- How do you get cadavers in and out of the building?
- Are you shipping unsterilized equipment?



Cidex



Liability

- Hotel
- Organization running the course
- Broker of Cadavers
- 2009 Epic Hotel Lost \$200K a day
- 2012 JW Marriot in Chicago

Insurance Exclusions

- Relying on various exclusions, insurers are trying to deny coverage for disease-related lawsuits.
- 2015 at least one individual who contracted Legionnaires' disease in New York sued the hotel where over 100 people contracted the disease, alleging that the hotel was "negligen[t], careless and reckless."

Ew Factor



Ethics

"When you introduce the profit motive in this field, then the money drives decisions – and decisions are at the expense of safety."



Public Safety

- We all have a duty to safeguard the safety of the public.





Thank You
