Occupational Health & Safety in the Visual and Performing Arts
Protecting our patients and family members

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Points to be covered

- Introduction:
  - You are already an expert

- The Arts as Dangerous Trades
  - Performing Arts
    - Health Hazards
    - Arts Workplace Characteristics
    - "The Show Must Go On Syndrome"
  - Visual Arts

- Occupational Health Approach to Arts Workplaces
  - What we can contribute
  - What we can learn

- Applications
  - Wide application to emerging U.S workforce, and artisans around the world

Background

- The Arts as Dangerous Trades
  - Performing Arts
    - Potter’s rot, weaver’s back, painter’s colic, metal working diseases, etc.

- U.S.
  - 500,000 professional artists, craftspeople and art teachers
  - Unknown number of part-time and amateur arts workers

- NIOSH/NORA Sector Council Arts, Entertainment and Recreation (NAICS code 71)
  - Includes museum workers, performing artists, writers, health clubs, sports team
  - Includes part-time workers
  - 1,974,230 employees (2008),
  - 15% increase projected by 2018

Case: Yale School of Drama

9/18/2007, theatre grad students unloading scenery from this truck. While removing particle board scenery from trailer, 32 sheets tilted over. Crushed one student’s head, taken in ambulance to hospital - Pronounced dead.

Yale University initiated a full review of safety procedures and training

Performing Arts Workplace H&S Issues

(Theatre, Music, Dance, Spoken Word, other classical and pop performing arts)

- BEFORE: Preparation

- DURING: Performance and Rehearsals

- AFTER: Strike
BEFORE: **Space Preparation**

Construction Hazards:
- Lighting/elec/tray, Carpentry, Welding, Rigging, Painting, Powered lifts, etc

BEFORE: **Costumes**

Fabrics, dyes, paints, sewing

BEFORE: **Wigs, Hair and Makeup**

Hair, sprays, dyes, latex bases, other chemical treatments

Makeup materials; base, pigments, talcs, adhesives, airbrushing

BEFORE: **Props**

Woodworking, Welding, Metalwork, Plastics, Cement and Plaster, Fabric work

BEFORE: **Unconventional Use of Materials**

BEFORE: **Fall Hazards, Overhead Loads**
Before: Fall Hazards

The Performing Arts can be dangerous trades!
- Hazardous Tools/Equipment
- Hazardous Materials
- Hazardous Conditions

Performing Arts
- **BEFORE:** Preparation
  - Performance Space preparation
  - Props
  - Costuming, Hair and Makeup
  - Other
- **DURING:** Performance and Rehearsals

Performing Arts Workplace H&S Issues
- Dark workplace
- Suspended materials (rigging; fly, fall)
- Noise, voice strain, athletic activities with poor guardrails
- Stage fog, Pyrotechnics

Stage Fights and Weapons
- **Best Practices**
  - Fight Choreography
  - Fight Director
  - Planning and rehearsal
  - Stage weapons checked
    - Guns, Knives, Swords,
- Brazilian actor dies after accidentally hanging while playing Judas in an Easter play. 4/23/2012
- Actor playing Brutus stabs himself. 8/30/2007
- Actor in hospital after blank firing gun injures eye in Sondheim’s “Passion” production. 10/4/2010
- Stage knife slits actor’s throat (Vienna Burgtheater, Austria (Skynews 5/2008))
- Blanks gun almost kills actor
**Performing Arts Workplace H&S Issues**

- **Stage Fog**

  - ENVIRO hired by Actor’s Equity to produce guidelines
  - Use Time/Distance Guidelines related to equipment location, or
  - Calibration factor related to aerosol monitoring
    - Glycol - 40 mg/m³
    - Glycerin - 50 mg/m³
    - Mineral Oil - 25 mg/m³

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**Stage Snow**

- Approved Calibration Factors for Water-Based Snow Smoke and Fog
  - Updated April 2011

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Raked Stage

- Prior to construction if Raked Incline is
  - Greater than ½ inch per foot
    - Theatre must notify Equity Union
  - Greater than ¾ inch per foot
    - Qualified Instructor must instruct performers to minimize the risk of injury
    - “Qualified Instructor”: licensed physical therapists, occupational therapists, and physicians.

Performing Arts

- **BEFORE:** Preparation
  - Performance Space preparation
  - Props
  - Costuming, Hair and Makeup
  - Other
- **DURING:** Performance and Rehearsals
- **AFTER:** Strike
  - Removing props and restoring performance space
  - Celebratory time
  - Cast and crew
  - Time constraints
  - Demolition hazards

The Performing Arts can be dangerous trades!

- Hazardous Tools/Equipment
- Hazardous Materials
- Hazardous Conditions
  - Small business issues
    - Work alone or in small groups
    - Long hours
    - Lack of health insurance/benefits
    - Lack of Health and Safety training/equipment
    - Live/work space; childhood exposures, unrestricted visiting
  - “The Show Must Go On” syndrome

“The Show Must Go On” syndrome

In the Performing and Visual Arts

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Case

22 y/o M, art student
- Sudden personality change
  - Reclusive, withdrawn
  - Work - incomplete
- Referred to Psychiatry
Case
Painting at school (60-70 hr/wk)

Case
• Teaching at neighborhood art center
  (10-15 hr/wk)

Case
• Painting at home (? hr/wk)

Case
• Exposures
  ▪ Mineral spirits - in class
  ▪ Xylene - airbrushing
  ▪ Turpentine - at home

• Exposed almost 24 hour/day

Case

DIAGNOSIS
• Solvent Intoxication
  -“Solvent neurotoxicity”

Occupational Health and Safety
approach to the Arts

• Treatment of Occupational Disorders
  1st - Remove from exposure

• Prevention Hierarchy
  1. Elimination or substitution
  2. Exposure controls; engineering, administrative
  3. Personal Protective Equipment (PPE)
Prevention Hierarchy

1. Elimination/Substitution
   - Water-based paints (acrylics)
   - Oil paints

2. Exposure Controls

3. Personal Protective Equipment

Hazardous Materials

- Lead Paints
  - Banned in 1978
  - Exterior and Interior Household paint
  - **NEVER** Banned:
    - Metal priming paint, auto paint, *artists' paint* and other coatings
Visual Art Hazards

- International Agency for Research on Carcinogens (IARC)
  1989, 2007 **Painting Occupation**
  = Group 1: carcinogenic in humans, animal studies
    - Leukemia, lymphatic cancers
    - Lung, bladder cancer
    - Childhood leukemia in pregnant women painters
  - Carcinogens in oil and water-based paints.

Hazardous Materials

- Hazardous Materials and Conditions

- Hazardous Conditions

  12/9/2012 Man dies when barrel explodes during plasma cutting

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**Occupational Health Approach to Arts Workplaces**

**What we have to contribute**
- Arts workplace hazards are familiar
- Treatment often difficult
- Prevention is crucial
  - Often simple problems

**What we can learn**
- Commitment to work is honorable, but also poses health challenges
- Reminds us of the importance of prevention in our own practices

**Applications**
- Newer work models in U.S., artisans worldwide

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**Student/ shared art studios**

**Problem areas**
- **Access**
  - 24 hr/day, unsupervised, often working alone
- **Older buildings**
  - Flammability, lack of sprinkler systems, smoke/fire detectors
- **Housekeeping**
  - Material storage, disposal, emergency exits blocked
- **Materials and processes**
  - Paint, solvents, acids, sawdust, scraps, welding, cutting

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**Fires**

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**Fires**

- **Nightclub Fire kills 100.**
  - Great White pyrotechnics ignite foam insulation
  - 2/20/03

- **PYROTECHNIC AND FLAMMABLE CEILINGS**
  - 2013 Santa Maria, Brazil: 237+ dead
  - 2012 Phuket, Thailand: 4 dead
  - 2009 Perm, Russia: 156 dead
  - Changle City, China: 15 dead
  - Bangkok, Thailand: 64 dead
  - 2008 Quito, Ecuador: 14 dead
  - 2004 Buenos Aires, Arg: 194 dead
  - 2003 Warwick, Rhode Island: 100 dead

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**Falls**

- **Spider-Man Actor Falls 30 Feet**
  - CBS News, 2011
Falls

- **American Idol Contestant 16 y/o Falls from 4’x 4’ stage addition**  2/09/12 Fox News

Falls

- **31 y/o female dies.** Cirque du Soliel performer in Ka falls 50-90 feet. Wire broke, slipped out of harness? Investigation continues
  - June 19, 2013, Las Vegas NV
- **44 y/o male dies.** Concert lighting rigger falls 70-100 feet
  - April 5, 2013, San Antonio, TX
- **33 y/o dies.** Acting Chief DirectorOpera and Ballet falls 10’ into orchestra pit. 2 weeks in coma, dies. Orch. pit rebuilt 9 mos ago and pit cover removed.
  - March 17, 2013 Urals, Russia
- **65 y/o male dies.** Popular sr. violinist, Bolshoi Theatre falls into orchestra pit.
  - July 17, 2013 Russia

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Resources
For H&S in Visual and Performing Arts

- Health Hazards in Visual and Performing Arts
  Health in the Arts Program, University of Illinois at Chicago
  [http://www.uic.edu/sph/glakes/harts/](http://www.uic.edu/sph/glakes/harts/)
  See “Online H&S in the Arts library”
  The Artist’s Complete Health and Safety Guide, Monona Rossol CIH ($20)
  Artist Beware, Michael McCann Ph.D, CIH ($30)
  Chicago Artists Resource; 250 Health and Safety articles
  See “Health, Safety Archive”

- Health Hazards in the Theater
  The Health & Safety Guide for Film, TV, & Theater, Monona Rossol ($20)