KEEPING IT REAL: FROM BRUISES TO MASS CASUALTY

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A bit about us

- **At Otterbein:**
  - We use moulage in simulations and labs
  - Chemical exposure simulation with Otterbein Police, Westerville Police and EMS, North Area Strike Team (NAS-T), HazMat
  - Active shooter training for Otterbein Police and Westerville Police and EMS
    - *All shifts of officers are trained- Next drill is Saturday at 4am*

- **Outside of work:**
  - County wide disaster drills (plane crash, explosion, etc.)
    - *Our next drill will have 500 victims*
  - Simulations with Columbus SWAT and EMS, Washington Township Fire Dept. and Homeland Security
Make it more realistic

- Moulage works for simulators and standardized patients
  - Increases realism for students, nurses, EMT, physicians, police and EMS

- Create realistic wounds, working drains, simulated body fluids
  - If it can be simulated- we will do it!

- Use creative resources to add realism
  - Virtual monitor, X-ray, CT or MRI results, etc

- Doesn’t have to be expensive to be effective
  - Theatrical makeup or dollar tree makeup works!
Virtual Monitor

- Can be used with standardized patients
- Can be used with low tech manikin
- Can be used without as a teaching tool
- [http://sourceforge.net/projects/vitalsignsim/](http://sourceforge.net/projects/vitalsignsim/)
- Need a computer with internet access
Description

The vital sign simulator is intended for use in medical emergency training simulations. In combination with a (cheap) CPR manikin, it offers a low-cost alternative to commercial high-tech patient simulation manikins. It is used with a dual monitor system, one monitor with controls for the operator and one
Heart rate: 80 bpm
SpO2: 98%
Respiratory rate: 12 bpm
NIBP: 120/80 mmHg
ECG available
SpO2 available
Resp. available
NIBP available
Auto-HR
System sounds
Document:
Time | HR | SpO2 | RR | NIBP | Rhythm | Event
---|---|---|---|---|---|---
00:00 | 80 | 98 | 12 | 120/80 | Sinus |
Google search
STEMI
Right lower lobe pneumonia
Which one is real?
Simulated critically ill patient

- Cut off OG and ET tube- secured with tube holder and pt placed between teeth
- Ran vent circuit to test lung and taped second circuit to the machine and attached to ET tube
- Dobhoff cut and taped to nose
- CVC cut off and placed under tegaderm with black thread tied to suture plate
- Chest tube clamped and under ace wrap. Pluerevac connected to suction
- Foley catheter taped to upper thigh
Favorite Recipes

- Mucus and pink frothy sputum
- Urine (clear, cloudy, with or without sediment, hematuria)
- Stool (guaiac positive, active GI bleed, diarrhea)
- Vomit (smells like the real thing, chunky, with meds in it, or bile)
- NG drainage (coffee ground, pH 3-4)
- Blood (free flowing, clots)
- Wound drainage
- Compound fractures
- Lacerations
- Sutured incisions
- Bruises and abrasions
Where to buy?

- [www.paintandpowderstore.com](http://www.paintandpowderstore.com)
- Costume stores
- Halloween stores
Need help?

Please email us at
sjustice@otterbein.edu
acerny@Otterbein.edu
vjohnson@Otterbein.edu and
we will send you recipes or
help you create wounds
Compound Fractures

- Liquid Latex
- Dryer sheet (optional)
- Cleaned and dried bones
- Makeup and fake blood
Compound Fracture
Preparing Bones

- Boil for several hours
- Remove all cartilage and meat
- Soak in bleach for at least a day
- Air dry for several days
Lacerations

■ Liquid Latex
■ Dryer sheet
■ Makeup and Fake blood
Lacerations
Sutures

- 3D effect gel- tulle in the center
- Sutures
- May need prosthetic adhesive to adhere to manikin or person
Impale limb/body

- Create base with fabric softener sheet and latex on plastic
- Add object to base - may need additional fabric softener sheet
- When latex is dry add effect gel around base of object
- Attach to body using Pro Adhesive (theatrical adhesive)
Impaled Hand
Bruising and Abrasions

- Makeup
- Stipple sponge and makeup wedge sponge
Scrapes and Road Rash
Rashes

■ Make skin pink or red with blush or theatrical makeup

■ Apply latex dots or effect gel
  - Can make different sizes of hives or bumps on plastic with effect gel then apply to skin or manikin
Rash
Second Degree Burn

- Pink make-up on skin
- Apply layer of Vaseline (petroleum jelly)
- Apply single layer of facial tissue (Kleenex)
- Apply Vaseline to top of tissue and move to form blisters
Second Degree Burn
Third Degree Burn

- Created sheets of skin with Saran Wrap, liquid latex and facial tissue
- Applied 3D effect gel (red) with stipple brush
- Applied soot powder to surface with stipple brush
- Added small pools of gel
- Highlighted burn with white makeup
Third Degree Burn
Pressure Ulcer

- Created center of wound with cotton ball and 3D effect gel

- Made base and top layer with 3D effect gel

- Applied to manikin with prosthetic adhesive
Pressure Ulcer
Degloving

- Used old simulator foot

- Applied multiple layers of 3D effect gel with finger

- Layered in different areas to create color differences and more texture

- Used flesh colored gel in thin layer in a few placed for depth and ripped tissue
Degloving
Frostbite

- Used watercolor makeup and created layers leaving each color exposed

- Red, purple and black

- Finished nails with soot powder to make matte and thick
Frostbite
Make up colors to match simulator

- CAE/METIman
  - Covergirl in creamy beige

- Laerdal Light Skin
  - Covergirl 520 Creamy Natural
    - Works well over silk tape to hide things on simulator
Don’t forget

- Simulator and human skin will stain
- If you impale someone remember the item must be light or it won’t stand up
- Shop after Halloween and at theatrical shops/ websites
- Have fun with it!
Ready to moulage?

- Any Latex Allergies????

- Bruises

- Lacerations/GSW

- Second degree and third burns
Severed leg for mass casualty
Created with eyeshadow and Halloween makeup
Active Shooter Training
Nail Fungus
Compound fracture sleeve
Metal object in leg (simulator)
Compound fractures arm & leg, metal thru thigh
Second degree burn
Impaled hand (practice)
Impaled Hand
Wood fragment in hand
Glass in thigh
Traumatic Amputation
Any Questions?
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