How did you do that???
Enhancing Realism in Patient Simulation

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Realism, Webster’s way

“true and faithful portrayal of nature and of people in art and literature”
Factors that are Required for a Successful Realistic Simulation

- Plausible Environment
- Plausible Responses
- Plausible Interactions
- Familiar Equipment
- Realistic Simulation Equipment

What is Realistic?

- REALITY- A MATTER OF PERCEPTION
  - Instructor must have the ability to manipulate “on the fly”
  - As long as participants perceive the environment and responses as plausible, then the simulation will remain intact
Fidelity

- the quality or state of being faithful: accuracy in details: exactness: the degree to which an electronic device (as a record player, radio, or television) accurately reproduces its effect (as sound or picture)
Equipment Fidelity

- The degree to which the simulator duplicates the appearance and feel of the real system.
- Example: A simulator that realistically mimics the layout of an aircraft cockpit.
Environmental Fidelity

- The extent to which the simulator duplicates motion cues, visual cues, and other sensory information from the task environment.

- Example: A flight simulator can be defined as high or low fidelity depending on whether or not the motion and video cues were turned on or off.
Psychological Fidelity

- Degree to which the trainee perceives the simulation to be a believable surrogate for the trained task or real patient encounter

- Allows learner to make conceptual sense of the scenario

- Generally considered to be the most essential requirement for team training

- Without suspending disbelief trainees are unlikely to behave in the simulation as they would in the real world!

- As a result, the training will have little or no application to the post-training environment!!

A Typology of simulation fidelity (adapted from Rehmann et al, 1995)
“Skillful blending of the three modes of thinking about realism [environmental, equipment, and psychological] will allow our trainees to ‘suspend disbelief,’ or to actively sign up for the ‘fiction contract’ that this is a situation with real relevance for them.”

Tips for realistic scenarios

• Provide adequate instruction to both performers and evaluators
  • Admit the limitations of simulation
  • Establish the ground rules to address the limitations before running cases
• In general:
  • If simulator provides it accurately, find it
  • If simulator does not provide it accurately, must be sought and represented verbally
Tips for realistic scenarios

- Run multiple cases concurrently
  - It’s how we actually practice
  - Better assessment of overall performance
    - Medical knowledge
    - Procedural skills
    - Prioritization, multitasking and organization

- Vary the cases run
  - Should not be intubating and shocking the mannequin every use
  - Create realistic alternatives (ex: CPAP)
Fiction Contract

• Is a joint endeavor that students and the debriefer create
  • The instructor agrees to make the simulation as real as possible within the resource and technology constraints
  • Participants agree to do their best to act as if everything is real. (Suspend Disbelief!)
    • Instructor will state a fair and balanced assessment of simulator strengths and weaknesses
      • AKA - Introduction to Simulator
“A successful scenario is not based on the realism of the simulation itself, but rather the alchemy of participants stepping into their roles, connecting with others in the scenario, and actively linking to their previous social, clinical, and psychological experience.”

Moulage
Examples of Patient Cases
Tips to match appearance

- Post-Halloween shopping spree
  - Hair
  - Clothes
    - Patient gowns (yeah, all our patients are in gowns)
    - Street clothes
    - Sizes - Clothes & shoes
- Makeup
  - Jaundice
  - Rashes
  - Burns
  - Abrasions and contusions
  - Diaphoresis
- Gender
  - Wigs
  - Female Parts
It is also important to understand the physiology that is going on
- What is the age of the wound?
- What environment did the wound occur
  - In the field or in the OR?
- Do you need to bring in some dirt?
- Is the wound infected?
- Do we need odors?
- Do the bones really bend that way?
- Do we needs sound? Background noise?
- Do we actors?
Items We Use...

"Schkin"  Dish Soap  Honey
Washable Paints  Glycerin  Corn Syrup
Fiber Therapy

BEN NYE
Items We use on a daily basis

- Sponges
- Brushes
- Filter Pads
- Cutips
- Saran Wrap
- Rubber Cement
- Washable Paints
- Powder Based Make ups
- Ben Nye Makeup/Wheels
- Glycerin
- Vaseline
- Corn Starch
- Metamucil
- Stage Blood & Scab Blood
- Fake Urine
- Liquid Latex
SMELLS
Base Layer

It is important to place a base layer of protection onto the simulator to allow for moulage to be easily removed upon completion of the scenario(s).
Compound Fractures

- Same as lacerations
- Impale bone
  - Chicken
  - Rib
- Cotton
- Red lipstick
- Rubber bands
- Coffee stirrers
Here are a few simple recipes we came up with to match our manikins' skin, we chose to use acrylic latex paint to color the skin.

We’ve kept schkin for over a year so far without change (mold, dryness, etc).

After thoroughly mixed, the paint does not come off or stain. We’ve tried several mixing methods and found that heating the petroleum jelly in a stainless steel mixing bowl (double boiler) adding the paint, mix until single color, then add the powder works the best for mess control and color consistency.

Supplies:
Skin tone (849) Folkart Acrylic Paint
Netzeg Brown (20432) Apple Barrel Colors
Baby Powder
Petroleum Jelly


1. Weigh out the desired amount of paint to match the color

2. Warm up the petroleum jelly to liquid.

3. Add paint to the jelly and stir, as it cools the paint will begin to mix

4. Once the paint is thoroughly mixed, add the powder and mix completely

5. After it allows to cool, add more powder and knead to desired texture

Have Fun!
Ted Makalina/Erin Manning
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SCHKIN!

- Place enough schkin to area where you will make injury and blend it into the the area on simman.
Applying color

- Apply necessary color from color wheels to make injury realistic
Partial Thickness Burn
Partial Thickness Burn
Frostbite

- Use black eye shadow
- Fade in with white
  - Jimmy Rowland
Road Rash/Abrasion

- Use filter sponge and apply color from color wheel to show road rash and abrasions
Seat Belt Bruising

- Use sponge and filter sponge to apply bruising color wheel in a pattern to represent an apparent bruise from a seatbelt.
Gun Shot Wound

- Apply schkin
- Make a divot in the skin to represent a bullet hole.
- Optional: Place eraser head in wound to mimic bullet.
- Apply ash around area if GSW was at close range
- Use pourable stage blood out of GSW Wound.
GSW Entrance Wound
GSW Exit Wound
Impalemment

- Build up Schkin and mold into area
- Apply color wheel
- Insert impalement into schkin
- Apply stage blood as appropriate
Impalement
Examples of Burns/Blisters

- Apply liquid latex from Ben Nye to an area where you would like a burn/blister to appear.

- Let Air Dry to a dry/tacky consistency
Designing of Burn

- Once to a dry/slightly tacky consistency, use cue tip to pull areas of the liquid latex apart to make appearance of burn/sliding skin.
Apply blood from color wheel and ash/charcoal to wound, cover with petroleum Jelly
Intestines
Building a mold
Making a Mold
Building a sebaceous cyst and blood into the mold
Sebaceous Cyst Pads Completed
Cleaning Supplies
Ben Nye Kit
Resources

- www.cert-la.com/education/moulage-recipes.pdf
- www.behindthesimcurtain.com
- www.whatcomcountyems.com/pdfs/CE%20Instructors/BASIC%20MOULAGE.pdf
- www.moulageconcepts.com
- www.sickkitchen.com
Some Examples

• Just some examples of what you can do

• [http://www.shopanatomical.com/Casualty_Simulation_Moulage_s/14234.htm](http://www.shopanatomical.com/Casualty_Simulation_Moulage_s/14234.htm)

• [www.moulage.net](http://www.moulage.net)


• [www.pocketnurse.com](http://www.pocketnurse.com)

• [www.wallcur.com](http://www.wallcur.com)