

Simulations and Moulage

By Bob Amick

Trauma and medical emergency "simulations" using wound moulages and makeup are the most effective "hands-on" experiential learning scenarios that Scouts can have, and will challenge their decision making and judgment abilities to deal with simulated life threatening emergencies. Studies have shown that retention of skills and knowledge learned through simulations is higher than any other form of education for such training.

Most of all the youth really enjoy simulations and will want to create their own scenarios using the makeup techniques. After such experiences, it is highly likely that they will be far better prepared to deal with real life safety emergencies if they have participated in well designed and realistic practical simulations of trauma and medical scenarios. Here are some methods and techniques for creating such scenarios.

Theatrical "Blood" **Our "Formulas" for Simulated Blood:**

A. Thicker Theatrical Type Blood **(Stays in Place on Extremities, Clothing)**

- 1 bottle Karo corn syrup
- 2 bottles red food coloring
- 1 or 2 drops of blue food coloring
- (mix well)
- A small amount of chocolate syrup can also be added to provide a more translucent appearance for the Karo Syrup.
- (Note: empty out some of the corn syrup before adding the food coloring and chocolate syrup to allow for proper mixing in the original container to avoid "overflow.")

B. Flowing Simulated Blood **(Works Well in Blood Pumps for Moulages and "Coagulates" When it Dries)**

- 1 bottle Sta-Flo liquid starch
- 2 bottles red food coloring
- 1 or 2 drops of blue food coloring
- (mix well)
- A little chocolate syrup also works in this mix for realism as well.

Blood Pumps

If you have a local hospital supply contact, try to get some IV blood pumps and 1000 ml bags of normal saline. Empty the saline from the bag and then use a large 60 cc syringe to load and fill the bag with your "sta-flo starch" theatrical blood mix. Hook up the blood pump to the bag and route the end of the tubing into your simulated wound.

The pump can be held in the palm of the "victim" and the tubing routed inside their shirt from the bag to the "wound." Tape tubing and the bag in place as needed for the scenario. You can pump the blood through the tubing and into simulated wounds to create the appearance of "arterial" spurting blood. Very realistic and very scary for first aid students, but they remember what an "arterial bleeder" looks like and what to do for it!

Burns

- 1 bottle theatrical "Liquid Latex"
- 1 bottle glycerin
- 1 tube theatrical grease paint in black, red clothing to "char" or scorch with small torch

-paint on and smooth out liquid latex to a thin film on skin; allow to dry. Be sure "victims" don't have latex allergy before applying to skin

-when dry, with a finger, pinch or pull up spots on the film to simulate the appearance of 'broken' blisters and "loose" skin.

-for 3rd degree burns, take some small pieces of charred cotton fabric and glue them down with liquid latex near the burned area.

- You can also *carefully* char or "scorch" the portion of the garment(s) that the victim will be wearing for the practical exercise. Scorch or burn the clothing (shirt or pants) that will be nearest the burned area with a small propane torch, then extinguish the flame with water and let it dry.

-apply thin layer of red grease paint inside "blister" area and around burned area to simulate "reddening" of skin due to thermal injury.

-apply some thin black for effect to simulate charred skin or clothing for third degree burns. Alternatively, use a thin layer of white clown makeup/grease paint and apply over liquid latex to simulate third degree burn, surrounded by reddened and blistered second degree burns

-apply glycerin inside "blister" and allow it to run out on the extremity to simulate oozing lymphatic fluid.

Scar Wax

Theatrical "scar wax" can be used to mold simulated open wounds. Work it like modeling clay until it is warm and pliable, then apply to skin. Use a blunt table knife to create the "open wound" or laceration. If you are using a blood pump (see below) insert the clear plastic tubing into the simulated wax wound. Color the inside of the "wound" with dark red grease paint for "subcutaneous tissue" appearances.

If you are using commercial moulages or theatrical moulage wax, to simulate lacerations, fractures, etc., also use some neutral pancake or liquid skin-colored makeup to blend edges into normal skin for realism. Attach small moulages with "spirit gum" or surgical adhesive used for prosthetic devices.

Internal Bleeding

To simulate blunt trauma to the chest or abdomen, create "bruising" by using dark red and blue mix (to make purple discoloration) grease paint and create a "site" injury (e.g. a steering wheel impression on the chest, or for abdominal trauma from an impact with a blunt object, create a large bruised area on the abdomen. Have the victim simulate rigidity and severe pain of the abdomen to indicate internal bleeding. A classic sign of a ruptured spleen with abdominal bleeding and shock, is "referred pain" in the area of the collar bone, when there is no apparent injury to the collar bone (clavicle) which is sometimes missed by rescuers, but is a potentially life threatening condition.

Shock

Be sure to make your victims look "shocky" by applying a THIN film of clown white makeup or grease paint and blend in well, to give them a very pale effect. Lips can be made to appear "cyanotic" by applying a THIN film of blue grease paint. Blend everything well so it doesn't appear to be artificial. Apply glycerin droplets with a small spray bottle with a glycerin and water mix around the mouth and nose to simulate "diaphoresis" or perspiration due to shock.

Coaching "Injured Victim" Actors

For "inexperienced victims," with "traumatic injuries (e.g., fractures, internal injuries, lacerations) coach them to exhibit "pain" by moaning or occasionally gasping (be sure they don't hyperventilate by doing this too often or they will actually pass out). (e.g., Victims should respond to the rescuers attempting to help them, by moaning if the rescuer touches or moves an injured extremity).

Remember that very severely injured victims in shock are often very "quiet" so that is a good indicator of the severity of the injuries (possible internal and/or head). For medical (non-trauma) simulations (e.g. anaphylactic shock, diabetic hypoglycemia), altered mentation is often a good way to convey that the victim has a medical life threatening condition (victim acts intoxicated or irrational for hypoglycemia, or becomes lethargic and incoherent for anaphylaxis (e.g., allergic reaction to a bee sting or food allergy such as peanuts).

Heart Attack

Have the victim complain of a dull "pressure" type pain in the area of the sternum ("it feels like someone is standing on my chest" is an accurate and classic response to a rescuer when assessing a possible heart attack with chest pain). Also simulate radiating pain to the upper arm, elbow, and jaw or back, combined with nausea. . Simulate "diaphoresis" or sweating around the mouth and forehead with glycerin and water mix applied with a small spray bottle. This often accompanies a heart attack. Denial is a classic response of first time heart attack victims who may attribute the nausea and chest pain to "bad food."

Cleaning Up After The Exercise

Cleanup latex with cold cream or Vaseline or "goop" waterless hand cleaner rubbed into moulage, then wash off with soap and water.

Stains on clothing from food coloring used in burns can be cleaned up by soaking in cool water overnight, then laundering.

If stain persists, use a small amount of chlorine bleach to remove the pink stain. Wear old clothes that you don't mind getting messed up for these practicals.

Please feel free to contact me if you need other resource information:
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See Also:

[Emergency Management Explorer Post 493 "Mock Disaster" Website](#)