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**Burn Treatment Center**
**Information about Critical Care Procedures**

This document describes procedures used on the Burn Treatment Center. The goal is to improve the understanding of treatments often used in intensive care. These procedures are often necessary to provide life support and improve the chance of recovery. Each listed procedure has benefits and risks.

Your understanding of the care given to your family member is very important. If there are concerns or questions, you are encouraged to notify the doctors or nursing staff on the Burn Treatment Center at any time.

**Burn/Trauma Intensive Care Monitoring**

**Monitors are machines that give information about a patient's health status. They tell health care workers about important changes in a patient's well-being. The following monitors are commonly used on the Burn Treatment Center.**

1. Heart monitor (ECG) leads. These are sticky pads placed on the chest to identify the heart rhythm.
2. Pulse oximeter. The pulse oximeter is a device placed on the forehead, finger, toe, nose, or ear to check oxygen levels in the blood.
3. Blood pressure cuff. A blood pressure cuff is wrapped around the arm or the leg to measure blood pressure. Initially, the pressure of the cuff can cause mild discomfort, but it is generally well tolerated.

**Tubes and Catheters**

1. Breathing support

   In the Burn Treatment Center there are advanced methods to improve breathing that help recovery. Commonly, our trained staff will give oxygen through a mask over the face or though the nose. If breathing is extremely difficult, a special device, known as *BIPAP*, will give oxygen to relieve shortness of breath. The BIPAP device gives oxygen by facemask under a low pressure to make breathing easier. Many medical tests have shown it to be helpful in serious illness. With some serious illnesses, *mechanical ventilation (a breathing machine)* will improve breathing. This medical device requires a special tube placed through the nose or mouth into the windpipe. During placement of such a breathing tube, damage to the teeth, vocal cords, or parts of the airway is possible. The breathing tube limits secretions from the mouth and the

stomach that might enter and damage the lungs. To improve comfort and reduce pain, our nursing staff will give medications to decrease pain and anxiety.

Certain patients require a longer period of recovery and specialized breathing support to recover from a serious illness. In some cases, a *tracheostomy*, a small breathing tube, may be placed into the windpipe through the skin of the neck. Except for emergencies, this is never performed without discussion with the patient and/or family.

**2. Catheters**

**Catheters are devices used to monitor the vital signs and provide medications to patients. The following devices are used on the Burn Treatment Center.**

1. Intravenous catheters, also known as peripheral IV's.
    a. Benefits: These are small plastic tubes, placed into veins in the neck, arms and the legs, which are used to give fluids, nutrition, or medications.
    b. Risks: All catheters carry a small risk of skin or blood infections. Special precautions are used to limit infections. For example, all IV's and catheters are covered by clear tape to monitor the site and to detect any infections early.
2. Arterial Catheters.
    a. Benefits: Arterial catheters are small plastic tubes inserted into an artery to continuously monitor the blood pressure and allow for blood testing. Commonly the radial artery of the wrist, the femoral artery in the groin, and/or arteries on the foot or upper arm are used. These are an essential part of fluid management and monitoring of oxygen delivery on the Burn Unit.
    b. Risks: Complications from arterial catheters include infection, bleeding at the insertion site, damage to nerves, and decreased blood flow to the limbs. These risks are uncommon.
3. Central Venous Catheters
    a. Benefits: Many patients with serious illness do not have veins in the arms or legs that can be used to support the needed therapy. Because of this, central venous catheters are sometimes necessary to provide medical support. Central venous catheters are tubes inserted into large veins, usually of the neck, chest, or in the groin. Those catheters allow the patient to receive medications, nutrition, blood, and fluid needed for life support. They also can provide important information for making medical decisions regarding heart needs.
    b. Risks: Complications from central venous catheters can include infection, bleeding, blood clots, irregular heartbeat and collapse of a lung. These are uncommon. If they occur, the doctor will provide necessary supportive care and notify the patient and family members.
4. Pulmonary Artery Catheter
    a. Benefits: The pulmonary artery catheter is a specially made central venous catheter inserted into one of the body's major veins, which then floats into the heart. It measures heart pressures and aids in medical decision-making.
    b. Risks: Complications from pulmonary artery catheters are similar to other central venous catheters and include infection, bleeding, blood clots, irregular heartbeat, and collapse of a lung. These events are uncommon. If they occur,

the doctor will provide necessary supportive care and notify the patient and family members.

5. Peritoneal catheter:
    a. Benefits: Insertion of a peritoneal catheter is performed when your family member has collected fluid in his or her belly that threatens the organs inside (bowel). This is performed by placing a catheter through a small cut in the skin of the abdominal wall. The catheter is then placed through this cut and into the abdomen. It is then connected to a collection bag. The procedure is done using sterile techniques and local anesthesia for the skin. Your family member will be given pain medication prior and during the procedure as needed.
    b. Complications are not common, but can include bleeding, infection or perforation of the bowel. If they occur, the doctor will provide necessary supportive care and notify the patient and family members.
6. Other Catheters. Foley catheter
    a. Benefits: The Foley catheter is a tube inserted into the bladder to drain urine into a bag. This is frequently necessary if the patient is heavily sedated and not able to urinate on his/her own. Monitoring the amount of urine produced is helpful in adjusting the fluid requirements needed for the patient.
    b. Risks: Risks of insertion of a Foley catheter include damage to the urethra (the passage from the bladder to outside the body) and infection.
7. Gastric tubes
    a. Benefits: A gastric tube is a catheter that is either inserted through the mouth or through the nose into the stomach or small intestine. It can be used either to feed the patient or to drain fluids from the stomach. Due to the anticipated use of the catheter, the size may vary.
    b. Risks: On insertion, damage to the soft tissue or to the esophagus is possible but very rare. Other risks include nausea and vomiting, bleeding from the nose or mouth, and misplacement of a gastric tube into the lung.

**Other Diagnostic and Therapeutic Interventions**

1. Bronchoscopy
    a. Benefits: A bronchoscopy is a technique where doctors can examine the lung for infection, smoke or heat injury or other problems. It can also be used to remove airway fluids and improve lung function. The procedure is performed with sedation and a local anesthetic to limit discomfort.
    b. Risks: A bronchoscopy can sometimes cause bleeding, low blood oxygen levels, lung collapse, and irregular heart beat. If any of these occur, the doctor will provide necessary supportive care during the procedure.

2. Drug Testing with blood and urine samples.
    a. Benefits: All patients get drug testing upon admission to the Burn Treatment Center. This information helps doctors understand a patient's condition, since stopping the use of any substance can lead to complications long after it was consumed. This testing allows the doctors and nurses to prepare and watch for these possibly serious side effects

b. Risks: Collecting blood is the same as all other blood draws and offers little risk to the patient. Urine is taken either from the Foley catheter itself, or from the first urine sample.

3. Child Endangerment Assessment:
   All injured children are evaluated for possible endangerment. This may include getting samples of hair and involvement of the Department of Human Services.
   a. Benefits: Both the family and the child benefit from fully investigating any injury in order to prevent a similar injury from happening in the future.
   b. Risks: There is no risk obtaining hair for sampling. Our Child Endangerment expert and all the burn unit staff are aware of the feelings of parents and children when these investigations are ongoing. The parents often feel emotionally drained during these times, and are encouraged to seek counseling with any of our burn staff. Our burn/trauma Social Worker or our Psychiatric Nurses have special training in dealing with these issues.

**Other Interventions and Procedures**

1. Chest tubes.
   a. Benefits: A chest tube is a small is placed between the ribs into the space between the ribcage and the lung. It allows drainage of abnormal fluid or air to improve lung function.
   b. Risks: The risks of this procedure include bleeding, nerve damage, or damage to the lung.
2. Blood transfusions.
   a. Benefits: In serious illness, blood loss can cause stress on the body. Blood may be given intravenously to improve a patient's condition. This blood helps to carry oxygen to the body, aid in blood clotting when serious bleeding is present, and can help to fight infection. Certain religious beliefs prohibit the use of blood products. If this is the case for you or your family member, please inform the burn unit nurse or doctor about this at the time of admission.
   b. Risks: The transfusion of blood is usually very safe. There is a very small risk of transmitting certain infections like Hepatitis B or HIV, but this is currently estimated to happen in one out of a million blood transfusions.
3. Cardioversion.
   a. Benefits: Cardioversion is used to restore heart function for fast or irregular heart rhythms that are life threatening. It consists of an electric shock delivered by external paddles on the chest wall or by using certain medications to slow down the heart. A cardioversion can also be attempted by using a pacemaker wire to over-stimulate the heart and slowly bring it back to its normal rate. Electrical cardioversion is usually done with a short acting sedative for comfort.
   b. Risks: Complications includes cardiac arrest, life-threatening heart rhythms, low blood pressure, and blood clots to the brain. These are not common. If they occur, the doctor will provide necessary supportive care and notify the patient and family members.

4. Escharotomies.
    a. Benefits: Escharotomies are performed when a deep burn threatens the underlying normal tissue. The procedure consists of cutting the deep burn down to healthy tissue using cautery to minimize bleeding, then application of a dressing. Your family member will be given pain medication prior to and during the procedure as needed.
    b. Risks: Complications includes bleeding and infection. These are usually minor complications but if they occur, the doctor will provide necessary supportive care and notify the patient and family members.
5. Medical Photography
    a. Benefits: Medical photography is often done upon admission to the Burn Treatment Center and again at the time of discharge. This is one way that we can document progress during a hospitalization. Sometimes more photos are taken throughout a patient's stay to help provide a visual reference for members of the care team.
    b. Risks: None.

**Emergency care:**

**If an emergency occurs or if the patient becomes unstable during any of these procedures or at any time during the stay on the Burn Treatment Center, the doctors and nurses will provide necessary supportive care and notify the patient and family members after the patient is stabilized.**

Summary:

The Burn Treatment Center works hard to provide patients the most effective treatments available for life threatening illness. The procedures described here are frequently necessary to combat serious disease, and although complications are rare, they can occur. The staff of the Burn Treatment Center makes every effort to ensure safe practice and to provide all patients the best possible care.

We welcome any questions.

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