Pediatrician Protocol

The purpose of the outline is to give you an understanding of the role of the pediatrician on an Alliance for Smiles (AFS) mission. Each mission is unique, and sites vary considerably in the condition of the facilities, equipment, the hospital staff, and team members. Be flexible.

Areas to be covered are:

1. Prior to mission
2. Clinic Day and Pre-op Examination
3. The Day of Surgery
4. PACU Assistance
5. Ward Care
6. Follow up clinic
7. HIV Kit

1. Prior to mission

Before each mission it is important to be aware of the supplies available others you may want/need to ensure that they are on the packing list. Effective communication between surgeons, anesthesiologists and the pediatrician will help to ensure that needed supplies are available and unnecessary items left behind. You should receive a list of consumables and subsequently a packing list that inform you of items sent and where they can be found. If you are unsure, please reach out to the AFS office and you can discuss with a prior mission pediatrician. Request Medication labels to be pre-printed in the local language.

2. Clinic Day and Pre-op Examination

All patients undergo the following screening process:

1. Registration including photography to identify patients
2. Nurse intake to include vital signs and hemoglobin, if not performed by hospital prior to screening.
3. Surgeon evaluation and determination of surgical need
4. Anesthesia evaluation
5. Pediatrician evaluation. Ideally, the anesthesiologist(s) and pediatrician (s) evaluate the patients together. We have found that this improves efficiency as the goals of evaluation are similar and often overlap. ALL PATIENTS must be SEEN and CLEARED by a Pediatrician and documented on a clinic form . Since most sites do not have a PICU, pre-screening should also consider avoidance of foreseeable post-operative PICU needs, though that is not always possible.
    a. General Health of patient: ongoing medical problems, allergies, medications, previous surgery, snoring, respiratory illnesses, exposure to second hand smoke or environmental pollution, e.g., woodburning stoves for heat or cooking, family or patient history of excessive bleeding.
    b. Physical Exam: Nutritional and developmental status should be noted. Consider malnutrition, dysmorphology, developmental delay, hypotonia, syndromes. In addition to routine physical examination, the following should be reviewed:
        i. Head and neck exam with focus on airway abnormalities and dysmorphology.
        ii. Cardiac exam – murmur, evidence of heart failure

iii. Respiratory exam – Acute respiratory illness may preclude the patient from undergoing surgery during the mission. However, because many sites have severe pollution leading to chronic lung disease, even in small children, each case should be evaluated individually. Depending on the respiratory disease process, it is common to schedule or re-evaluate patients toward the end of the mission.

iv. Anemia – Traditionally ,the minimal requirements for palate surgery are a hemoglobin of 10 and weight of 10 kg. However, depending on the allowable blood loss based upon total blood volume and anticipated blood loss of the planned procedure, these limits may be adjusted by the team.

Surgical schedule

This is made after the screening clinic. The head nurse, lead surgeon, anesthesiologist and pediatrician are usually involved. If there are any patients you think are not candidates, or have significant concerns about, please let the team be aware, so discussion can occur.

All patients need to be re-evaluated for signs of any intercurrent or newly developed illness or anything else that would preclude surgery. There is a bilingual Pre-Operative instruction sheet for the families as well as for the ward nurses. It will have the patient's name, medical record number, age, weight, and Hgb.

After the clinic, familiarize yourself with the layout of the hospital. You will want to know where the wards are in relation to the O.R./PACU, the blood bank, the laboratory, radiology and pharmacy. Also check out the capability and turn-around times for these support services. Confirm that the team has HIV kit and/or access to hospital testing. Regarding the blood bank: What is the procedure for type and cross and how long does it take to prepare a unit of blood? Often the blood is free but the bag for the blood needs to be purchased. AfS will pay for it. The family does not incur the fee. It is rare to need transfusion and we may be at a site with limited blood banking facilities. Surgery will not be scheduled if there are significant concerns for blood loss in these situations.

Identify the local physicians and nurses who will be assisting with perioperative care.

3. Day of Surgery

- Document morning vital signs and O2sat. Fill out the pre-op sheet, reviewing NPO times again with the family.
- NPO guidelines
  - Review these with the lead anesthesiologist, the pre-op ward nurses and parents the night before surgery when the patient is admitted.
    1. Solids: 8 hours
    2. "Light meal;" 6 hours during the day
    3. Full liquids/breast milk: 4 hours
    4. Clear liquids: 1 - 2 hours[1]

    1.Thomas M, Morrison C, Newton R, Schindler E, Consensus statement on clear fluids fasting for elective pediatric general anesthesia, Paediatr Anaesth, 2018;28(5):411-4.

All patients except those scheduled at start of day should be given clear liquids in the morning. Stop time should be determined by start of surgery. It is not necessary to limit the volume of clear liquids. It is important, however, to offer clear liquids that the child will actually drink (diluted apple juice, electrolytes, etc) . Utilize your Ward Coordinator to develop a schedule of pre-hydration as the day proceeds. Give small amounts (5 ml/kg) of sugar containing fluids every 2 hrs to patients scheduled later in the day to avoid arriving to OR dehydrated.

The NPO orders for patients should be updated depending upon the schedule and unanticipated delays. In the event of significant NPO violations, the patient should be rescheduled at the end of day or on another day. **There is much greater risk to anesthetizing a dehydrated infant than clear liquid minor violations.**

You should be able to review the next day's schedule by 3:00 pm. If you have not received a copy, it should be available from the head nurse or record keeper. Please bear in mind that pediatric/anesthesia concerns regarding health issues and scheduling may not have been noted on the "final" schedule. Appropriateness for surgery should begin by reviewing the next day's charts and schedules.

4. PACU Assistance

- The anesthesia team is primarily responsible for care of the patients in PACU, with assistance from the pediatrician as needed. The "float" anesthesiologist should be called for all concerns and should be immediately available, though this may not be the case during induction and emergence of anesthesia. The anesthesiologist should determine satisfactory recovery from anesthesia and fitness for discharge to the ward. The pediatrician writes the discharge orders from PACU to ward.

PACU complications

Bleeding – The surgeon should be notified for continued bleeding. It is easier to manage prior to discharge to the ward

1. Airway – Stridor, obstruction, wheezing/bronchospasm
2. Delirium- post anesthesia
3. Pain- narcotics given in PACU only
4. Nausea and vomiting- ondansetron rx

Most sites do not have a PICU. The level of nursing care is variable so that any post-operative observation for an AFS patient is done by converting the PACU into a "PICU". Several team members remain with the patient until stable, which may rarely require overnight stay.

Post-op ward orders

The surgeon should be consulted for any postoperative NPO restrictions, but liquids can be offered to most patients in the PACU once they are awake. Diet should be advanced as tolerated. Feeding instructions specific to the surgical procedures should be followed by the nurses and families.

Pre-printed ward orders are in the chart packet to complete.

5. Ward Care

- Make up a box for the ward with: Q-tips, water, hydrogen peroxide, tongue blades, Band-aids, paper tape, double antibiotic ointment packets, alcohol wipes, 2X2 gauze pads, a plastic bag for refuse, Ziploc bags for patient discharge supplies and a good bandage scissors.
- Ward Supplies- Q-tips, gauze, gloves, plastic cups for drinking, diapers, soap, hand sanitizer, IV solution and at least one IV start kit on the ward. Possible garbage bags
- Provide all the oral fluids patients may need (Apple juice, water, etc)
- Provide the nurses with a case of IV fluids which insures that the ward will not run out of fluids.
- Medications:
    - Get a supply of Acetaminophen/Paracetamol and ibuprofen for the ward to use. Take note of the concentrations of locally supplied pain medications (which are often different) and dose appropriately.
    - Have an Albuterol (or similar) inhaler with spacer or nebulizer on the ward. Supply meds needed for nebulizer if there is one.
    - Other ward meds- Ondansetron (oral), topical antibiotic ointment, bottle of Afrin or similar
- Assure there is suction, oxygen, and appropriate tubing on the ward.
- Be able to quickly locate the code box of medicines if needed. If the ward is far from PACU, the code box may need to be present on the ward, especially at night and emergency procedures reviewed with each night team of nurses.
- It is most helpful to label each patients bed with a designated color based on the surgeon who did the case. It greatly simplifies early morning rounds with the surgeons if their patients are readily identifiable.

Cleft Lip

- In your free moment you should definitely watch the surgery of a cleft lip and/or a cleft palate. It is important for you to understand in general terms the procedure in order to explain it to the parents. In most cases patients usually remain overnight in the hospital following lip repair

- IVs on the cleft lip patients are typically removed before they leave the PACU.

- Infants who are breastfed may continue to do so. Infants who are formula fed may continue to use a bottle and nipple. The older child may drink liquids and quickly advance to soft, then regular diet as tolerated.

- All infants and young patients should have arm restraints to prevent possible injury to the incision/repair.

Wound Care

- There is usually a small amount of blood that oozes from the swollen lip. The wound is dressed based on the surgeon's preference. Some children will have nothing over the cleft lip repair, while others may have a gauze bolster, paper tape, Steristrips or Dermabond.
- Some surgeons request antibiotic ointment over the incision several times a day to help keep it moist.
- Dermabond should be kept dry and **no ointment should be applied**.
- The sutures are absorbable and please let the parent know this.
- Instruct the family on how to clean the lip/face prior to discharge using a Q-tip and hydrogen peroxide to remove dried blood.

- Confirm wound care instructions with the surgeon and communicate these to the patient.
- Please review the discharge booklet with each family using a translator if needed.

Reassure the parent that the lip swelling resolves over about 10 days without any intervention.

Vomiting and bleeding after a lip repair is uncommon.

Cleft Palate

- Cleft palate patients have their IVs continued overnight. You need to check with the floor nurses as to how they want to IV orders written. Be vigilant about the different IV setups and drip rates. If possible , have infants under 10 kg have a Buretrol on their IV to more closely monitor fluid administration.This may help avoid fluid overload in infants and small children. Educate the ward nurses on the use of the Buretrol if they are not familiar. The pediatrician is responsible for all the fluid orders.

  It is difficult starting IVs when the patient is awake. Insist that the IV is stabilized in the OR with an armboard on the hand and no-nos (arm restraints) in place. Make sure that the IV is not simply wrapped with Kerlex. Despite best efforts by all, it may become displaced or non-functional. Most pediatric anesthesiologists are highly skilled at IV placement and should provide a useful resource on the ward if necessary.

- Most cleft palate and VPI surgery patients will have a tongue stitch placed during surgery for emergency use in case of post- operative tongue swelling and need to access the airway emergently. The suture is taped to the cheek and remains in place overnight. It is removed, painlessly, the following morning.(By peds or surgery)

- Oral fluids
  - Best administered with a syringe provided by the nurse or parent to drip into the mouth. In the older individual, it may be offered by a small cup. The first 12-24 hours mostly clear liquids are given followed by milk, formula yogurt drinks, rice cereals…. all soft or pureed foods.
- Bleeding
  - This may occur post op at the suture line, often from the nose also. Stay vigilant in the immediate post-op period for significant dripping blood or ooze.
  - Notify the surgeon for them to come examine the patient and assess intervention.
  - Often, using a gauze soaked with Phenylephrine or oxymetolazone (eg, Afrin) will stop the bleeding. A tea bag can also be used to apply gentle pressure. Only proceed with these after consulting with the surgeon.
- Diet
  - Soft diet should be continued for 14 days.
  - The mouth should be cleansed with water following each feeding. Inspect the palate with a flashlight to make sure the parents are cleansing the oral cavity and that the palate is clear of particulate matter
  - Any hard objects must be kept out of the mouth (straws, spoons, toothbrush, etc)
  - Suction on a bottle nipple or pacifier is prohibited until healing- check with surgeon on timing, but generally at least 1 month.

- Breastfeeding may generally resume after the first few post-op days- but again check with surgeon. Breastfeeding moms may need help managing engorgement.

Antibiotics

An IV cephalosporin is given to all patients prior to the start of surgery. Cephalexin 250mg and 500mg capsules are supplied for post-operative use. The dose may vary from 25-50mg per kilo per day administered bid or tid. Capsules maybe preferable if refrigeration is not readily available. The cleft lip patients do not receive any antibiotics but the cleft palates *may* receive antibiotics for 3 days. Cephalexin (unreconstituted) should be available in the medications that are provided by AfS to use if needed. Standards on post-operative antibiotic use are evolving and many advocate no antibiotics. Discuss with the surgeons at the pre-op screening clinic.

Demonstrate for the parents how to separate the 2 ends of the capsule so they can give the appropriate amount mixed with water or formula BID or TID and give it for 3 days. There will be plastic bags or vials with labels for you to dispense the medicine in the local language.

General

- Post operatively some individuals have a cough and/or a sore throat which typically resolve quickly. However, when a patient develops a fever, which is not uncommon, they need to be fully assessed. Usually the fever is low-grade and responds to acetaminophen. Removing clothing from the overdressed child also helps. Persistent fever work up may require assistance of the local physician to evaluate the possibility of tropical infection locally (malaria/dengue/other) that you may not be familiar with.

Clearly communicate with the ward nursing team, both day and night shift ,of emergent conditions that you should be notified about.

They include :

if the incision is open or if there is bleeding of concern
vomiting
high fever
trouble breathing
pain
IV concerns (if present)

The call schedule and emergency numbers should be clearly posted on the ward.

- All appropriate information is given to the parents on the post op instruction sheet. This should be reviewed with the parents on the ward as a group if possible or individually if time permits.
- Provide arm restraints for use at home , depending on the age and development of the child, as well as the ability of the parent to continuously monitor the patient and keep the hands out of the mouth. Have the parents remove the restraints a few times in the day with close supervision to avoid arm stiffness. They may be required for 2-3 weeks.
- Discharge medications:
    - A supply of liquid or tablet Acetaminophen /paracetamol is given to each family with instructions for use. Label in local language. Supply may be from AFS or may need to be acquired locally (if so, discuss best option with Mission Director)

6. Follow-Up Clinic

Check with the Mission Director about the time and date of the follow-up clinic. Ask the patient/parents if they live within an hour away if they can come back for the follow up clinic.. If they live 8+ hours away it is best to try to get those surgeries done within the 1st week so the families do not need to seek housing while awaiting their scheduled surgery. See if you can facilitate those who live the furthest away to be done the first week. (Shouldn't this be done by those doing registration? Can they identify patients who live far so that this is obvious to the team at scheduling? It does not seem to be a pediatrician job)

For patients who need follow up beyond the team presence, please check with the local physician on what arrangements can be made. There is often a local social worker who can assist the family with needs to get to follow up care.

7. HIV Kit

You can do bedside testing for both hepatitis C and HIV. Familiarize yourself with the procedure and the medications that are needed to start treatment if deemed necessary, and the individual involved desires to do so. All the instructions are written out and contained along with the kits in a yellow container which is handed to you at the airport.

Misc:

You are the team physician responsible for many of the medications and above all responsible for the health of the team. You will be given confidential health forms that all team members have filled out. The most common issues you will encounter are gastrointestinal and upper respiratory problems. Consult with the Lead Anesthesiologist as needed for any complex 'adult' medical concerns. Any needed medication is usually available at the hospital or a local pharmacy.

Thank you for volunteering for a medical mission with Alliance for Smiles. We hope it will give you a world class experience - both culturally and medically - while allowing you to experience the benefits of providing a life changing service to patients and their families.