Caring for Your Child’s Gastrostomy Tube
This booklet is meant to answer questions parents and caregivers have about feeding children with gastrostomy tubes (G-tubes). Because no one knows your child like you do, you play a key role in making tube feeding your child a success. Your health care team will work with you to find a care plan that is best for your child.
What Is a Gastrostomy Tube (G-tube)?

A gastrostomy tube (G-tube for short), is a soft plastic tube that is placed into your child’s stomach through a small hole in the abdomen. The G-tube lets you give formula, water, and medicine right into the stomach. It also lets extra air or fluid drain out of the stomach.

Food, fluids, and medicine go into the G-Tube instead of the mouth and pass down the tube into the stomach.

Why would a child need a G-tube?
Children need G-tubes for different reasons. The most common reason a G-tube is placed is for feedings. Some children are not able to eat enough food or drink enough fluids to grow well. G-tube feedings help a child get the needed calories and fluids to gain weight and grow.

There are many other reasons children may need a G-tube. Some children cannot eat or drink because the food or fluid will go into the lungs. This can cause aspiration pneumonia. Other children may be on special diets that taste bad. These children do not want to eat or drink. Some children are not able to take their medicine by mouth. Some children have other health problems that make it hard to eat, chew, or swallow food. Others have health concerns that make it hard to eat enough food.

Will our lives change with tube feedings?
Yes, getting used to tube feedings takes time. Most parents and caregivers have lots of questions about how tube feedings will affect their daily lives.

There are several reasons it is helpful to have a G-tube. A G-tube makes it easier to give your child the nutrition and fluids he needs. For children who have a hard time eating, tube feeding will take less time and cause less stress than feeding by mouth. For children who can eat food, having a G-tube allows them to enjoy mealtime better. Parents can give foods the child likes, rather than having to give certain high calorie foods the child may not like. Parents also do not need to “force” the child to eat more than he wants. Liquid medicines can also be given in the G-tube.
There are some disadvantages to having a G-tube. Some children eat less food by mouth after G-tube feedings have been started. This does not happen with all children. We are not able to predict which children this will happen with. Traveling can be a challenge. Yet, with good planning, you will be able to enjoy going on outings and trips with your child the same as you did before the G-tube was placed. There are some complications that can occur with a G-tube. These will be discussed later in this booklet.

Try to make tube feeding a part of your family’s routine. All parents and other caregivers should learn to give feedings and care for the equipment. This prevents one person from having to do all of the work.

**Types of Feeding Tubes**

There are many types of feeding tubes. The type of tube your child uses may change. This will depend on his or her needs. Types of tubes commonly used are listed below.

- Nasogastric tubes (NG).
- Percutaneous gastrostomy tubes (PEG).
- Skin-level devices (buttons).
- Single piece balloon or mushroom tip catheters.

**Nasogastric (NG) Tubes**

NG tubes are temporary feeding tubes. They can be used to supplement feedings for a short time. NG tubes are small tubes placed through the nostril and into the stomach. The tube is secured to the child’s face with tape. This type of tube is changed every 1 to 4 weeks. How often it is changed will depend on the brand of the NG. They can be changed by health care providers or parents (after they have been trained). There are times that a NG will be used to supplement feedings before a child has a more long term type of gastrostomy tube. They are sometimes used as a trial. This is done to see if a child is able to tolerate feedings and gain weight with added feedings.

NG tubes are easy to place and use. They are often inconvenient for long term use. With the tube being taped to the child’s face it becomes an easy target for the child to grab and pull out of place. The tape used to secure the tube can sometimes irritate the skin. These tubes also tend to become clogged with formula and medicines. This is because they are smaller than more permanent types of feeding tubes.
Percutaneous G-tube (PEG)
These are soft plastic tubes that are placed during a surgery. PEG tubes are held in place with a clamp or disc that sits outside of the body and an internal bumper.

They are placed in the operating room by a gastroenterology doctor and a surgeon. Placement of the tube is guided by a small tube with a camera and light. These tools are used to help visualize the stomach and place the tube in the proper place. This is called endoscopy. The only incision or cut will be the opening for the tube.

The tube will remain in place for about 2 months. This will allow the opening to heal. It is at this time that the tube can be changed to a “skin-level” tube.

Balloon-type G-tube (Foley catheter or replacement tube)
This is a long tube with a clamp and a feeding or medicine port at one end. It does not have a detachable feeding adapter. It is held in place by an inflatable balloon. Sometimes there is also a disc or clamp that lies against the skin. This helps to steady the tube. This type of tube is changed every 3-6 months. The first tube is surgically placed. After this first tube is changed, the people caring for the child can be taught how to change the tube.
Skin-Level Devices
These tubes are also referred to as “buttons”. Sometimes they are called by their brand names, such as “Mini/AMT”, “MICKEY”. This type of tube is held in place with an inflatable balloon. They lie flat against the skin. There is no external tubing attached. A person will connect an adapter tube only as needed for feedings and giving medicines. This type of g-tube can sometimes be surgically placed in the operating room using laparoscopy (small incisions in the skin are used to insert a camera and small instruments to place the tube without a larger incision being made). Stitches are used to secure the tube for the first 2-5 days after surgery. After that time the stitches will be removed by your doctor or nurse. The tube is held in place by the internal balloon which is filled with water. The first tube change is done around 2-3 months after surgery by a doctor or nurse trained to do this. Caregivers can be taught how to change the balloon button at home after the first tube change. The balloon type button is changed every 3-6 months, as needed.

![Diagram of Balloon Type Button](AMT mini or MIC-KEY)

Balloon Type Button
(AMT mini or MIC-KEY)

Care of the button after surgery & before the first tube change

It is important to prevent the g-tube from being tugged on, especially before the first tube change. When the adapter is attached it should be secured at all times with a “grip-loc” securement device, or medical tape.

Until the first tube change you should not use the balloon port on the g-tube. Do not check the water in the balloon until after the first tube change. Doing so can cause the stomach lining to fall away from the abdominal wall if the site is not well healed.

If the g-tube falls out before the first g-tube change you should call the pediatric surgery clinic and either come to the clinic or emergency room for tube replacement. If you were given a red rubber catheter at hospital discharge you may gently insert that catheter into the stoma (hole) and tape it in place to keep the hole open until you get to the hospital. If the tube does not easily insert do not force it. Once at the hospital, the g-tube will be replaced and verified that it is in the correct position by an x-ray study with contrast given through the tube.
Cleaning the Gastrostomy Site

How often should the site be cleaned?

Cleaning it once a day is enough. You will need to do it more often if there is drainage around the tube. One of the easiest ways to clean the site is in the shower or during a bath. Be sure to rotate the tube and allow water to flow under the skin disc to clean the area. If your child is not able to shower or take a bath, please use the steps below. The tube site should not be submerged or soaked under water until 2 weeks after surgery. Your child may shower or sponge-bathe until then.

1. Wash your hands.
2. Clean the skin and tube with cotton swabs, mild soap, and water. If there is crust around the tube, dip a clean, soft cloth or paper towel in warm water. Wrap it around the crusted area. After about 5 minutes, remove the cloth and wipe away the crusting. You will want to be sure and dry the area well. Do not use hydrogen peroxide to clean your child’s G-tube site.
3. Inspect the skin around the site. Call your doctor or nurse practitioner if you notice:
   - Drainage
   - Bleeding
   - Excess tissue
   - Redness
   - Swelling
   It's normal to have a little clear drainage around the G-tube opening. When this drainage dries, it becomes a light brown crust. Moisture can irritate skin. Avoid dressings. If a dressing is needed, gently place it between the tube and the skin. Change it every morning and night or when it gets soiled.
4. For PEG tubes and one-piece tubes (non-skin level tubes) the external bolster should not be loosened except by the doctor or nurse who placed the tube until after the first tube change.
5. Secure the G-tube at all times to prevent tugging.
   - G-tube buttons should have the adapter detached when not in use (for example between bolus feedings) to prevent tugging, if possible.
   - When the adapter is attached or for any other one-piece tube, the tube should be secured to the abdomen using “grip-locs” or medical tape to keep it from getting tugged.
   - One piece clothing (one-sies) for infants can help to keep your child from tugging on the tube.
6. Wash your hands when you are done.
Gastrostomy Feedings

There are many ways to feed your child with the G-tube. Your health care team will talk with you about your child’s nutritional needs, your child’s daily routine, the family routine, and school needs. This will give you and your child’s health care team the information they need to decide on the type of G-tube feeding and a feeding schedule.

What should I use?

Formula Name__________________________________________________________
Names of Equivalent Products_____________________________________________
Name of Manufacturer_____________________________________________________
Total amount of formula per day____________________________________________
Total amount of water per day_______________________________________________
Additional Vitamins/Minerals/Supplements_____________________________________
________________________________________________________________________
________________________________________________________________________

How much and when should I feed my child?

Give _____ can or _____ ml of _______________ every _____ hours or _____ times per day.
Flush the tube with _____ ml water after each feeding.

Are there times that I should delay a feeding?

If your child has nausea, feels full, or the tube does not flush freely. Wait one hour and try again. Call your doctor if this does not improve.

Other Instructions
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
How to Give a Feeding

1. Wash your hands with soap and warm water for 30 seconds.
2. Connect the syringe or the feeding bag to the G-tube. If using a skin level device, connect the adapter tube to the device and then the syringe or feeding bag.
3. It is best if your child is sitting up or lying with head raised 30° - 45°.
4. Infuse the formula. It can be given at room temperature.

If using a pump
Fill the feeding bag with the desired amount of formula. Connect the G-tube to the pump tubing, open the flow clamp, and turn on the pump. Be sure the pump is set at the correct rate. The correct rate is __________. (You will be trained how to use the pump.)

If not using a pump.
- Syringe Method.
  Remove the plunger from the syringe and connect the syringe to the G-tube. Raise the syringe 4-5 inches above the stomach and pour the feeding into the syringe. Allow the feeding to flow into the stomach by itself. Feedings should take 15-30 minutes. This will depend on what your child is able to handle. You may need to gently push the feeding with the plunger to start the flow. Never force feedings into the G-tube. When feeding is complete remove the syringe from the G-tube.

- Feeding Bag method
  Fill the feeding bag with the desired amount of formula. Hang the feeding bag at least two feet above your child’s head. Attach the feeding bag tubing to the G-tube. Open the clamp and use it to adjust the flow. Feedings will take 15-30 minutes. This will depend on what your child is able to handle. When done clamp the feeding bag tube and remove it from the G-tube.

5. Flush the G-tube with 5-10 ml of tap water. You may be told to give your child a larger amount in order to meet your child’s daily water needs. Sometimes this is done while flushing the tube. If the volume of water you need to give is quite large you may need to give it as you would a feeding.
6. Clamp or cap the G-tube. If your child has a skin level device remove the adapter. The adapter tubes and feeding bags are reusable.
7. Clean your supplies by rinsing the syringe, bag, and adapter tube with cool water. Then swish with warm water and a small amount of liquid dishwashing detergent. Rinse. Hang to dry. **Change tube feeding bags every 3 days.** If the plunger cannot be easily inserted into the syringe, try a few drops of vegetable oil. **Change syringes weekly.**
Giving Medicines

Medicine can be given with a syringe through the G-tube. Liquid medicines are preferred. If the medicine does not come in liquid form, crush and dissolve the pills in water (not formula) so that they do not clog the tube. **Never crush enteric-coated or time-release capsules.** Flush the tube with 5-10 ml of water after giving medicine.

G-tube Feedings at Daycare and School

You will need to plan for your child’s return to daycare or school with a new G-tube. Some caregivers, especially at school, already know how to use a G-tube. Others may need to be trained. Meet with your child’s teacher to discuss the items listed below.

- Your child’s feeding schedule. Include the name of the formula, the time feedings are given, how fast the feeding is given, the position your child is in while he is being fed, and any special instructions. It may be helpful to show the teacher how to do a feeding.
- If your child can eat foods, talk with your child’s teacher about what foods your child eats, how much, and when he eats.
- Care of equipment. Include how to clean the equipment, where it will be stored, what equipment can stay at school, and what equipment will need to come home with your child.
- Medicine schedule. Include how to give the medicine.
- Have a plan in case the G-tube comes out.
- Decide where the extra G-tube kit will be kept. Some parents keep one at school. Others keep one with their child in a backpack.
- Decide how you and your child’s teacher will communicate with each other. Many parents and teachers find a notebook is helpful. Both you and your child’s teacher can write in it every day.
- Be sure your child’s teacher knows how to contact you if there is an emergency.
Changing a Balloon-Type Gastrostomy Tube Button

**The first tube change must be done by your doctor or nurse practitioner. They will then teach you how to change the tube in the future as needed**

Times you will need to change the tube.

- It becomes plugged.
- It accidentally falls out.
- Your doctor or nurse recommends routine changes, usually every 3 to 6 months.

Supplies needed for changing the tube.

- G-tube kit with inflatable balloon as ordered by your child’s doctor.
- Tap water.
- Lubricating jelly that is water soluble such as KY® jelly or Surgilube®. Do not use Vaseline®.

How to change your child’s G-tube.

1. Wash your hands.
2. Take a new G-tube and test the balloon for leaks. Using a syringe, draw up 5 ml of tap water. Inject the water into the balloon port. If there is no leak, withdraw the water. If the balloon leaks, save the tube and the box it came in. Bring it to our clinic. We will arrange for a replacement kit.
3. Using a syringe withdraw water from the balloon of the old G-tube.
4. Remove the old G-tube.
5. Coat the tip of the new tube with a lubricating jelly. Do not use Vaseline®.
6. Insert the new tube. If you cannot insert the tube, call your doctor.
7. Using the syringe, inject the amount of water as stated on the G-tube package into the balloon port. Many times this will be 5ml.
8. Clean the site.
9. Wash your hands.

Tips
It's normal for some stomach juices to spill out during the tube change. It's also common for a few drops of blood to ooze from the site during the change. If there are more than a few drops of blood, call your doctor.
**Removing Your Child’s G-tube for Good**

There are many things your health care provider thinks about when he or she decides to take your child’s G-tube out. Before the tube can be removed, your child will need to be able to do all of the things listed below.

- Your child needs to be able to eat all of her calories by mouth and gain weight.
- Your child needs to drink enough fluids every day.
- All medicines need to be taken by mouth.
- Many times your child will need to be able to get through an illness without using the tube.

The decision to remove the g-tube should be made by you and your health care provider together. Typically, once the above listed requirements have been met for about 3 months it is appropriate to discuss this with your health care provider.

The tube can easily be removed once the decision has been made to remove it. In most cases this is done at home, just before bedtime.

1. Remove the tube as you do when changing tubes.
2. Cover the hole with a small piece of gauze.

The stomach and skin close in about 24 hours. Sometimes the site may take several weeks to close. In most cases, surgery is not needed to close the G-tube site.
Common Problems

- Plugged tube
- Leaking around the tube
- Redness around tube
- Bleeding around tube
- Tissue buildup around tube
- Broken tube
- Tube falls out
- Vomiting
- Diarrhea
- Dehydration
- Constipation
- Gas, bloating, cramping

What do I do if the tube becomes plugged?

What causes it to plug?
- Food particles, lumpy formula, or residue from sticky medicines

What should I do?
- Prevent clogging by flushing the tube with 5 ml of water after all medicines and feedings.
- Check that the tube is not kinked or clamped.
- Squeeze the tube between your fingers. Start at the top and work down toward the stomach.
- Flush the tube with 5 ml of warm water. Do not use force when flushing. If the tube has been changed before and you have been taught how to do so, you may change the tube.
- Call your doctor or nurse if you are not able to use the tube.

What if I notice leaking around the tube?

What causes a G-tube to leak?
- A poor fitting tube.
- Extra tissue at the site can prevent the tube from fitting the way it should.
- A deflated balloon.
- Increased pressure in the stomach. Constipation or retching can force formula out around tube.

What should I do?
- If your child’s tube has a balloon and your child has already had the tube changed before, check the water level. (Do not check the water in the balloon of a new g-tube that has not been changed before.) Using a syringe, withdraw the water from the balloon. If the balloon did not contain enough water, add the amount that should be in it. If the balloon keeps leaking water you may need to replace the tube.
- Secure the tube to avoid movement that could widen the opening.
- Protect skin with barrier creams such as Aquaphor® or Proshield®.
- Apply and change gauze dressings as needed to keep the skin dry.
- Apply Maalox on the skin. This will prevent and treat irritation caused from leaking stomach acid.
- Call your doctor or nurse if the leaking persists.
What if I notice redness around the tube?
What can cause the redness?
- A possible infection.
- Irritation from tape or drainage.
- Irritation from movement of the tube.
What should I do?
- Call your doctor or nurse if you notice redness, swelling, and warmth at the site, tenderness, or unusual drainage. This may be a sign of infection.
- Keep skin at the site clean and dry.
- Change the gauze as needed to keep the skin dry.
- If you are able, allow the red areas to be open to air.
- If the site is leaking, treat the cause of the leak, if possible.
- Secure the tube to prevent excess movement. You could try tape or try to cover the tube with clothing such as a “onesie”.

What if there is bleeding?
What can cause bleeding to occur?
- A few drops of blood can be normal, especially after a tube change. Larger amounts of blood could be a sign of injury.
What should I do?
- Call your doctor or nurse if you notice more than a few drops of blood.
- Secure the tube to avoid any excess movement.

What if tissue builds up around the tube?
What would cause a build up of tissue?
- Some growth of extra tissue is normal. The body wants to heal the opening.
- Excess movement of the tube.
What should I do?
- Secure the tube to prevent excess movement.
- If the tube is a skin level or “button” tube, detach the adapters when not in use. This will help prevent extra weight and tugging at the G-tube site.
- Call your doctor or nurse if the tissue builds up and causes drainage or bleeding.

What if the tube breaks?
How or where could the tube break?
- The tube may have been cut.
- The clamp can break.
- The feeding port can break.
What should I do?
- If the tube has been changed before, you may be able to replace the tube at home.
- If the tube is new or needs a health care provider to change it, call your doctor or nurse. They may be able to repair the broken segment of the tube or they will replace the tube.
- Prevent cutting the tube. Do not use a scissors anywhere near the tube.
What if the tube falls out?
What would cause the tube to fall out?
- The child may have pulled the tube out.
- The tube may have become caught on an object.
- The balloon may have ruptured.
What should I do?
- Do not panic.
- The tube will need to be replaced as soon as possible. The opening will start to close after the tube has been out for 30 minutes.
- If the tube has been changed before, replace it with a new one at home. (See page 11)
- If the tube is new and has not been changed, cover the opening with a clean bandage and go to the ER to have the tube replaced. If you were given a red rubber catheter from your doctor or nurse and you feel comfortable inserting it into the opening you may do so to keep the hole open until you can get to the clinic or emergency room.
- If you do not have a new tube at home, you will need to use the one that fell out. Rinse the old tube under water and put it back in. This will keep the hole open until you have a new one. Secure the tube in place with tape. Replace with the new tube as soon as one becomes available. Call your doctor or nurse if you do not have access to a new tube.
- Call your doctor, nurse, or go to the ER if you are unable to replace the tube.

What if my child is vomiting?
What can cause vomiting?
- Not having the child in an upright position during and after a feeding.
- Infection or other illness may cause vomiting. Be sure equipment is well cleaned and rinsed between feedings. Wash your hands between contacts with persons who are ill.
What should I do?
- Be sure that your child is sitting upright or propped up on pillows at least 45° when lying down.
- Try giving smaller feedings more often. You will need to make sure that your child gets the amount of feedings needed for each day.
- Call your doctor if vomiting persists. The strength of the formula or the contents may need to be changed.

What if my child has diarrhea?
What is diarrhea?
- Diarrhea means frequent, loose, watery stools.
Are loose stools ever OK?
- Stools that are loose may be normal with certain types of tube feeding.
- Having loose stools a couple times in a 24-hour period is not a problem.
What can I do?
- Avoid having formula hang for longer than 6-8 hours.
- Give the tube feeding more slowly, yet make sure the total amount for the day is still the same.
- Watch for signs of dehydration (see below).
- If the diarrhea does not stop after 24-48 hours, call your doctor or nurse. They may choose to adjust the strength or type of formula.
When should I be concerned that my child is dehydrated?

What can cause dehydration?
- Vomiting, diarrhea, a fever, and sweating cause the body to lose fluids.

What should I watch for?
- Decreased amounts of urine.
- Urine that is a darker yellow or more concentrated looking.
- Crying with no tears.
- Dry skin that does not bounce back when squeezed.
- Fatigue or irritability.
- Dizziness.
- Dry mouth and lips.
- Sunken eyes.
- Headache.

What should I do?
- Call your doctor if you notice any of the signs listed above. The doctor will tell you what kind and how much extra fluid you will need to give.
- Keep in mind that your child may not feel thirsty.

What if I think my child is constipated?

What can cause constipation?
- Constipation may be due to a low fluid intake, too little roughage in the diet, or a side effect of medicine.
- This is common in those with limited activity.

What should I do?
- Call your nurse or doctor if you notice that your child has chronic constipation. They may want you to try a different formula or prescribe new medicines.

What if my child appears to be having gas, bloating, or cramping?

What should I do?
- Consider the points outlined for diarrhea.
- Try to get rid of all air from the tube feeding system before connecting it to the G-tube.
  - You may open the tube while it’s raised to allow extra air to escape.
  - It’s best done if lying down with the tube held straight up.
  - Be sure to have a towel handy in case fluid is released.
  - Recap once the air is out and fluid starts to come out.
  - Do not drain excess fluid from the stomach.
- Call your nurse or doctor if the gas, bloating, or cramping continue.
**Things to Keep in Mind as Your Child Grows**

Each child grows at his own pace. The stages listed below refer to the child's level of function, not his age.

**Infants** explore their world by grasping, pulling and sucking the objects around them. To keep your child from pulling the tube out, tape the G-tube to the stomach and tuck it under clothing. Overalls and shirts that snap between the legs keep infants from playing with the tubes.

“I like to remind people that the tubes are just a support they have and have nothing to do with who my kids are. They are still children first and enjoy what most kids enjoy. The tubes may change the way you do things but they should never stop your child from doing something.”

**Toddlers** love routine. Come up with a special routine during the feeding such as sitting in a favorite chair. Keeping a routine makes your child feel safer. If possible, have your child sit at the table and get the G-tube feeding during the family meal. If your child takes food by mouth, meals are a great time to practice feeding skills.

“One thing we did was put a Mic-key G-tube into my little boy’s Barney doll and we gave him an extension set, feeding bag, syringe, etc. He is very proud that Barney looks just like him.”

**Preschoolers** love playing “make believe.” Tape a tube like your child’s tube to the stomach of a doll or stuffed animal. When your child gets her feedings or other tube care, tell your child to do the same with the doll. Children of this age can help with their own care such as handing Mommy or Daddy the tape or holding the syringe during the feeding. This helps them improve their skills, learn about their own care, and feel proud.

**School-aged children** can learn to do their own feedings and G-tube care. Children at this age like to know how things work. A picture book that talks about the digestive system may help teach your child how the G-tube works and why he needs it. Self-care activities for school-aged children make them feel better about themselves.

**Teenagers** are very worried about how their bodies look. However, a gastrostomy may help your teen get the nutrition needed for growth. Most teens prefer a gastrostomy skin level device because it is less likely to be seen under clothing. Teenagers may also work with their health care provider to develop a plan for weekends or parties. Some will change the feeding schedule and not give a tube feeding during a sleepover.

“If a child is going to have a tube for life or long term they need to take ownership if they are developmentally able to do so.”
Common Questions and Answers

Can my child sleep on his stomach?
Yes. After the surgical site has healed, most children sleep well on their stomachs. However, infants should never sleep on their stomachs due to risk of SIDS (Sudden Infant Death Syndrome).

Can my child go swimming?
Yes, once the g-tube site is well healed and the tube has been in place for at least 2 weeks. A pool with chlorine is better than a lake. The chlorine will decrease the risk of infection.

Home Supplies List

- Tube feeding formula ________________.
- 60 ml ENFit syringe.
- Feeding bag (optional).
- 1 inch plastic adhesive tape or “grip-locs.”
- Cotton swabs.
- Smaller syringes for medicines.
- ENFit adapter tube if you child has a skin level devices.
- Split 2X2” gauze if needed.

Additional supplies for pump feedings

- Pump
- Feeding bags

The nursing staff will give you a 3-day supply before your child is discharged home. Future supplies may be obtained through your home care provider. The special G-tubes, buttons, and other G-tube related supplies can be ordered by your clinic. Please check with your nurse or doctor.

The Spanish version of this Health Facts for You is #5472

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person’s health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 6/2017 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#4277