WHAT IS BOTULISM?
There are four kinds of botulism – foodborne, infant, wound and unclassified. Foodborne botulism is a serious illness caused by the ingestion of a toxin (poison) produced by bacteria called Clostridium botulinum. There are several types of toxin that more commonly cause botulism in humans. These are types A, B and E.

Spores of the bacteria C. botulinum have a widespread distribution. They are present in soil and on the surfaces of many vegetables such as, onions and potatoes, where they usually cause no harm. There are certain conditions that favor the production of toxin from spores. These include: lack of oxygen, adequate nutrients, appropriate temperature and a low acidity level. Most outbreaks involve food that was not commercially canned, and either not processed properly or not properly handled so as to allow the toxin to develop from spores that were present.

WHAT ARE THE SIGNS AND SYMPTOMS OF BOTULISM?
The toxin of botulism affects the nervous system, usually in a symmetric manner (on both sides). The greatest concern is a descending paralysis causing weakness that can affect the structures involved with respiration leading to difficult breathing and respiratory failure.

Foodborne botulism is not always easy to diagnose early in an outbreak. Signs and symptoms may appear anywhere from two hours to eight days after eating the contaminated food. Constipation, diarrhea, abdominal cramps, nausea and vomiting may be early symptoms, but classic signs and symptoms eventually may include double vision (diplopia), blurred vision, slurred speech, difficulty in swallowing, muscle weakness, breathing difficulty, dry mouth, fatigue, drooping eyelids and certain neurological signs. Sometimes foodborne botulism may at first be mistaken for other conditions, such as the flu, allergic reactions, Guillain-Barre syndrome, chemical poisoning, myasthenia gravis, hangover and others.

The extent and severity of symptoms may vary because of the amount of toxin ingested, the type of botulism and the victim’s individual susceptibility.
ANTITOXIN
Antitoxin is available from the Centers for Disease Control (CDC) for use in botulism outbreaks. The antitoxin prescribed is heptavalent A-G antitoxin. It is believed most effective if it is administered before the toxin completely binds to the neuromuscular membranes. It is thought that the toxin will prevent further progression of illness.

HOSPITALIZATION
Most often persons with botulism are placed in an intensive care unit so that they can be carefully monitored and given supportive treatments as indicated. Initial treatment may include successive enemas and/or a laxative to try to rid the body of as much unbound toxin as possible; the placement of a needle with plastic tubing in the veins (IVs) to give fluids and medications and for taking blood for tests; vital signs such as blood pressure and pulse; frequent pulmonary function tests; and tests for oxygen and carbon dioxide in the blood that may necessitate removing a small sample of blood from the artery. Samples of stool may be taken for the presence of toxin and urine tests also may be done. Thorough physical exams that include testing reflexes and nervous system functioning are usually also done. Patients often have difficulty swallowing and eating may be restricted.

If pulmonary tests indicate impending respiratory failure, patients are placed on a ventilator to “breathe for them.” To do this, either an endotracheal tube is placed through the nose or mouth or a trachestomy (trach) with a surgical opening in the neck and placement of a tube is necessary. The ventilator may look frightening, but is necessary to assist in breathing. Fears of suffocation are common. If the patient has a trachestomy or endotracheal tube, periodic suctioning is necessary to rid the respiratory tract of secretions. Suctioning can be unpleasant and frightening. Let your nurse know what you feel can be done to minimize discomfort so that a plan can be worked out. Speech will temporarily not be possible because the tubes bypass the vocal cord. X-rays of the chest also may be necessary to either check for the possibility of developing pneumonia or for other reasons. Patients need to remain on the ventilator until they can breathe on their own. The length of time may vary from a few days through several months. A major problem for persons on a ventilator is the fact that they are not able to talk. Some persons with botulism may have a mild or moderate decrease in respiratory function, but not require mechanical assistance for respiration. They may feel like they are having difficulty in breathing, and may be monitored closely in the hospital with breathing tests occurring as often as every 10 minutes to every half hour.

Most patients with botulism have trouble speaking, even if they are not on a ventilator. There are ways to help with communication. Many patients also have trouble with vision either because it is double, blurred or because they are having difficulty opening their eyes. At the same time, they are usually mentally alert and know what is going on. Some staff members or friends of family may have difficulty remembering this. Sometimes they may need to be reminded that you have no difficulty in understanding and can hear what is being said. Many persons appreciate listening to music or books.

The muscle weakness that usually occurs in botulism may range from the very minimal to very severe. The muscles of the bladder and bowel are sometimes affected. This can mean that you may have difficulty in moving your bowels or in passing urine completely.
Sometimes it becomes necessary to have frequent enemas for a period of time, and/or to have an indwelling catheter (tube) placed in the bladder, or it may be necessary to pass a tube to the bladder after you urinate to determine if any residual urine is still there. If the bladder does not empty completely, there is the potential for infection.

Other procedures that may be carried out in the hospital include an intensive nutritional evaluation (and often provision for tube feeding or placement of a tube for total parenteral nutrition), muscle strength testing, speech therapy and rehabilitation for swallowing, walking, muscle strength and activities of daily living.

Usually pain is not a component of botulism itself. However, some patients have complained of headaches or muscle aches or discomfort. Be sure to let your physician and nurse know that you are having pain. Some type of remedy will be prescribed for you. If you become so nervous that you cannot rest, or feel uncomfortable, tell your nurse or physician so that some medication can be given.

The length of time persons usually remain in the hospital varies considerably. In a past outbreak, hospital stays ranged from four days to nearly seven months and stays in the intensive care unit ranged from 0-175 days.

FEELINGS COMMONLY EXPERIENCED BY PATIENTS AND FAMILIES
When a severe catastrophic illness such as botulism strikes unexpectedly, many people ask, “Why me?” This is a common reaction to serious illness that strikes without warning, and that is not brought about by the affected person directly. Feelings of anger also are common. Anger may be directed at the source of the contaminated food or at parts of the medical establishment. Anxiety and fear also are common feelings – fear of the unknown and anxiety about the course of the illness. Both patients and families regretted the loss of landmark events in their lives, time, control, freedom and dignity.

After you have been in the hospital awhile and realize that you are getting better physically, you will probably be less frustrated and impatient. You also may become depressed, cry more (if crying is possible, as some patients with botulism have dry eyes), or become very irritated and angry with the hospital, the staff or your family. Once again, these feelings are not abnormal and the best thing for your recovery is to express your anger, cry if you can, and release your feelings.

PROGRESS
If you have been in the ICU and are moved onto a regular hospital unit, you may feel uneasy at first, wondering whether you will receive adequate supervision. The floor nurses will make certain your call light is within easy reach and they also will make regular rounds to observe you. If you are worried, share these feelings with your nurse, physician and family. In botulism, in general, a person’s condition worsens over the first few days and then levels off. Gradually, improvement begins.

GOING HOME
As the day of your discharge approaches, you will probably be elated. But part of you also may be quite worried about how you will manage at home and what it will be like to be alone after
having been observed so closely. The after-effects of botulism can be long-lasting for some. For all but the most mildly affected, some types of assistance (such as help with household chores and activities) may be welcomed. In some cases, plans may be made for additional physical, occupational and/or speech therapy, either at home or on an outpatient basis at the hospital or clinic.

When you know the date of discharge, your hospital nurses should be available to work with you and your family in order to plan for your needs at home. They can provide a referral to a home healthcare nursing service. Remember to ask about this service.

It is helpful to make arrangements as much in advance of discharge as possible. Try to work with family or friends on what will be necessary in order to take care of yourself. They can provide ideas about where help is needed.

Recovery, although steady, can be slow. When you are tired, symptoms may tend to either reappear or worsen. It is important to plan for periods of rest during the day. Some of the Peoria patients complained that they would be performing some ordinary task, such as hanging clothes, and their arms would suddenly feel leaden and they would need to stop and rest. Try not to become discouraged because this extreme tiredness will eventually pass. In the most recent outbreak, signs and symptoms persisted in many of the patients for up to three years. Most common and prominent symptoms were fatigue and muscle weakness.

**FEELINGS AFTER BEING HOME**
Glad as you are to be home, there may be some difficulties. Many patients continue to feel very angry at the cause of their botulism. Some continue to wonder why this has happened to them. Others feel guilt over putting their loved ones through this experience. Some patients discover that things at home are not as they remembered – change has taken place. New relationships and routines may have been formed. Fatigue that lasts and the illness itself may cause you to examine your educational and career goals. Role changes may continue to be necessary if exhaustion and muscle weakness persist.

If feelings become too disruptive, if you cannot sleep or if family relationships become very difficult, we urge you to ask your physician for a referral to seek outside counseling.

**CONCLUSION**
You and your family have been through a difficult and challenging experience. As with many of life’s critical challenges, this can be a growth-producing event which draws the family even closer together and stimulates new strength and understanding within each family member. To do this, we encourage you to share what this experience has meant to each other and to use your physician as a professional resource person who can help you and your family with your physical and emotional needs.

**For further needs or questions, please call:** Your primary care physician or Fairfield Medical Center Infection Control at 740-687-8493. You also may call a Fairfield Medical Center Patient Representative at 740-687-8555.