Theodore McFarland, 57, and Gail McFarland, 65, returned from an afternoon picnic in mid-September 2011 when Mr. McFarland started to experience severe abdominal pain. “I thought I had food poisoning,” he recalled. “I had pain all night for about 10 to 12 hours before it subsided. I thought I might go unconscious it was so bad. After several hours it finally stopped and I got some sleep. But when I woke up it felt like I had a severe flu.”

Over the next week, his pain returned in the evenings intermittently and lasted for about eight hours. When the pain finally stopped, he developed jaundice and other symptoms. Jaundice causes the skin and whites of the eyes to appear yellow caused by excess bilirubin, a substance found in bile and can be elevated in liver disease.

After visiting his primary care physician, he underwent blood tests and a CT scan. The testing revealed a tumor in the pancreas. The pancreas is a large organ located behind the stomach that produces enzymes to help breakdown food and hormones to help control blood sugar levels.

“The tumor in my pancreas was squeezing off a bile duct in the area of the liver and not draining properly which caused the jaundice,” explained Mr. McFarland. He underwent an intermediate procedure to drain the bile duct but he still needed major complex surgery called a Whipple procedure (see medical explanation on page 2). This highly specialized procedure requires a skilled and experienced surgeon and surgical team. After consultation with his primary care physician and a gastrointestinal specialist, he was told that a Whipple procedure could take six to 12 hours and it was unavailable without the use of blood. For religious reasons, Mr. and Mrs. McFarland do not accept blood transfusions.

“At that point, I contacted our congregation’s liaison committee who gave me names of five area hospitals that could perform the surgery without the use of blood. I selected
Cancer in the pancreas often grows and spreads for a long time without any symptoms. Therefore, pancreatic cancer is frequently well-advanced when diagnosed and most tumors cannot be removed through surgery. According to the National Cancer Institute, 29,000 Americans are diagnosed with pancreatic cancer each year. When the cancer has spread or the tumor cannot be removed, most patients receive treatment through chemotherapy and/or radiation. Other patients, like Mr. McFarland (see patient profile on page 1), may be eligible for Whipple surgery if the tumor has not spread. Approximately 20 percent of patients with pancreatic cancer are eligible for this procedure.

This complex surgery is recommended for patients with tumors that are contained or confined within the head of the pancreas and have not metastasized or spread to other organs such as the liver, lungs or abdomen, or to major blood vessels or lymph nodes. Patients that have pancreatic tumors that can be surgically removed may have better outcomes or curative rates than those patients who cannot have surgery.

Whipple Surgery
The Whipple procedure, also known as pancreaticoduodenectomy, is named for Allen Whipple, MD, an American surgeon from Columbia University who refined an original form of the surgery in 1935. Earlier forms of the surgery were described in the late 19th and early 20th centuries by Italian and German surgeons. It is the most common surgery to remove tumors in the pancreas.

In a standard Whipple procedure, the surgeon removes the head or wide part of the pancreas and the upper part of the duodenum or small intestine, a portion of the common bile duct, the gallbladder, the pylorus or small portion of the stomach and lymph nodes near the head of the pancreas. After these organs are removed, the surgeon reconnects the remaining pancreas, digestive organs, intestine and bile duct so that the pancreatic digestive enzymes, bile and stomach contents will flow into the small intestine during digestion.

Another type of Whipple procedure, called pylorus preserving Whipple, preserves the bottom portion of the stomach. Post-operative complications from the Whipple procedure may include:

- Bleeding
- Diarrhea
- Digestive difficulties
- Fistulas and leakage from surgical site where bowel is reconnected
- Infections
- Problems with stomach emptying after meals
- Weight loss

Most patients continue treatment after the surgery with chemotherapy and radiation in case of undetected cancer cells. The Whipple procedure is complex and intricate and takes several hours to perform. The American Cancer Society strongly recommends that patients who qualify for the Whipple procedure select a hospital, surgeon and surgical team with advanced skills and significant experience with the operation.

“For that reason other surgeons typically will want to have four to six units of blood available for transfusion. In fact, there are a number of surgeons who will not do the procedure on a patient who will not accept a blood transfusion,” he explained.

However, Pennsylvania Hospital's CBMS program has significant experience with the Whipple procedure. Dr. Kirkland performs about 20 Whipple procedures per year on both bloodless and other patients. He averages approximately 3.5 hours for the procedure from start to finish. Dr. Kirkland performs approximately 700 surgeries annually.

“It's clear that the more these Whipple procedures are done the lower the risk to the patients,” Dr. Kirkland noted, adding that these procedures are not done by every surgeon. “Historically, every gastrointestinal tract surgeon started doing a small number of procedures but complication rates and operative times became substantially higher,” he explained. “It’s a matter of having a team who does these procedures on a regular basis and works together well in concert so the operation is done efficiently and safely.”

For patients opting for no blood during a Whipple procedure, Dr. Kirkland and the CBMS team use various non-blood techniques.

“We developed two strategies intraoperatively, including hemodilution and cell saver, in order to prepare for the unlikely situation that we would need to deal with bleeding. In addition, we optimize the situation by giving intravenous iron if counts are low pre-operatively. We also administer intravenous iron and epogen post-operatively, if necessary.”

“By doing the Whipple procedure on a frequent basis on all patients and patients who will not accept blood, we refined our techniques so that even patients who will accept blood, often don’t need transfusions,” he added.
Pennsylvania Hospital because they respected my wishes and I had spoken with others that had medical care there who also opted for no blood, which went well.”

Matt L. Kirkland, MD, a surgeon at Pennsylvania Hospital since 1988, (see physician profile on page 5) performed the Whipple procedure on Mr. McFarland in October 2011.

“When I met with Dr. Kirkland he said he had performed several Whipple procedures that same month. He really put me at ease. I felt that he was confident and competent,” Mr. McFarland recalled. The surgery took less than four hours due to Dr. Kirkland’s extensive experience with various techniques for this operation and his long history working with the CBMS team.

“He removed the entire tumor and it was free of blood vessels,” noted Mr. McFarland. After five days, Mr. McFarland was discharged. “I had no problems in the hospital after the surgery or when I got home. I had no pain whatsoever. I lost very little blood, probably just enough to fill an eight ounce soda can.”

Since the surgery, Mr. McFarland, who works for a contractor that does pumping for major oil companies, continues to receive radiation and chemotherapy treatments as precautionary care.

“I didn’t lose my hair or feel nauseous, I was not affected at all! I returned to my regular routine. I know I made the right choice with CBMS and Pennsylvania Hospital,” he added.

In March 2012, five months after Theodore McFarland’s major Whipple surgery for pancreatic cancer at Pennsylvania Hospital (see patient profile on page 1), Gail McFarland also started having bad pain in the abdominal area.

“Initially the pain felt like it was in my lower right side. I immediately thought it was appendicitis. I went to a local hospital’s emergency room because my husband was undergoing regular radiation and chemotherapy treatments and I wanted to be close by,” she recalled.

She had a CT scan, but it was inconclusive. Mrs. McFarland spoke with a surgeon about the possibility of bloodless care if her condition worsened and she needed surgery. “We got negative feedback from him regarding bloodless care and I did not feel comfortable in that hospital. My husband had a positive experience at Pennsylvania Hospital so that’s where I wanted to go.”

At Pennsylvania Hospital, another CT scan revealed a bowel obstruction (see medical explanation on page 4).

“I had adhesions from scar tissue from a previous surgery. I was diagnosed with a small bowel obstruction,” she noted. After meeting with CBMS medical director, Patricia Ford, MD, she also consulted with surgeon Allen H. Bar, MD, FACS (see physician’s profile on page 5) about bowel obstruction surgery. Her initial treatment plan involved intravenous medication and diet restrictions which can resolve an obstruction without surgery. Mrs. McFarland was sent home and the treatment helped temporarily, but the pain returned and surgery became necessary. “It was a very stressful situation for me at the time because my husband was undergoing chemotherapy and radiation treatment near our home and I had to have surgery,” she recalled.

She underwent bowel obstruction surgery in March 2012 with no complications and she lost little blood. “While I was in the hospital, I felt at ease and comforted that CBMS would check in regularly. I had a bloodless arm band. My medical chart had the ‘no blood’ symbol. When I went for tests, everything had the no blood symbol. It was also posted above my hospital bed and I found that comforting.”

Mrs. McFarland’s recovery went well and she returned to normal activities such as her regular exercise routine and working for her church’s ministry.

“I had a wonderful experience with Dr. Bar. We have a good rapport, I really liked him. I truly appreciated everything that CBMS did for my husband and me. The doctors and nurses were respectful of our conscience and bible training. They put us at great ease given the situation,” she added.

“Everyone we dealt with at Pennsylvania Hospital respected our desire for not using blood, from Dr. Patricia Ford and the CBMS team, our surgeons, to the nurses and staff. Everyone was on board with us. They were all agreeable to bloodless care and that made the whole process much easier. We thank everyone at the hospital who took care of us.”

– GAIL AND THEODORE MCFARLAND
A bowel or intestinal obstruction is a condition related to partial or complete blockage of the small or large intestine. The condition prevents intestinal contents such as food, fluid and gas from normally passing through a person’s system at the point of obstruction. There are two types of bowel obstructions, mechanical or non-mechanical (also called ileus). Mrs. McFarland (see patient profile on page 3) had a mechanical obstruction in the small intestine due to scar tissue from a previous surgery.

The causes for a mechanical bowel obstruction include:

- Adhesions or scar tissue from previous surgery
- Abnormal tissue growth
- Foreign matter ingested that blocks the intestines
- Gallstones
- Hernias
- Impacted feces or stool
- Intussusception or telescoping one segment of bowel into the other
- Tumors
- Volvulus or twisted intestines

A non-mechanical obstruction occurs when peristalsis or the rhythmic contraction that moves material through the bowel stops working. It behaves like a mechanical obstruction but there is not a physical blockage. Non-mechanical obstruction is often associated with infection of membrane lining of the abdomen. Another common cause of non-mechanical obstruction occurs when the blood supply to the abdomen is reduced or disrupted. Patients who have had abdominal surgery are more likely to experience non-mechanical bowel obstruction, but the condition is usually temporary and resolves within a few days. This condition may also occur due to complications from other surgeries, kidney disease, heart disease and some chemotherapy drugs.

Bowel obstructions are frequently treated in the hospital through intravenous (IV) medications and fluids. Patients may also have a nasogastric tube (NG) placed through the nose and into the stomach to remove fluids and gas, to relieve pressure or pain or abdominal swelling or distention and vomiting. Many bowel obstructions resolve on their own or with further interventions such as the use of liquids, enemas or stents to open blockages.

Surgical Repair of Bowel Obstruction

Surgery is necessary when the intestine is completely blocked, when other non-surgical treatment does not resolve the obstruction or when there is risk of ischemia or decrease in the blood supply to the bowel. The type of surgery depends on the reason for the obstruction. Some patients undergo traditional surgery where the abdomen is cut open for access to the intestinal area. Other patients may qualify for less invasive laparoscopic surgery, where smaller incisions are made.

The surgeon locates the blockage, repairs it and removes damaged areas, as needed. The surgeon also makes sure that blood flows to the rest of the bowel properly. If a section of the bowel is removed, the surgeon reconnects the healthy areas with stitches or staples.

Mrs. McFarland’s recovery went well and she returned to normal activities such as her regular exercise routine and working for her church’s ministry.

If reconnection is not possible, the surgeon will create an artificial opening in the abdominal wall for a colostomy or ileostomy for digestive waste to exit out of the body. A colostomy or ileostomy may be short-term or temporary during the recovery period or it may be permanent.

Post-operative risks from bowel obstruction surgery include:

- Bleeding inside the abdomen
- Bowel leakage
- Bowel obstruction after surgery
- Internal leakage in the repaired intestines or problems with the colostomy or ileostomy
- New or further formation of scar tissue or adhesions inside the abdomen
- Temporary slowing of the bowel
- Wound or incision infection or reopening

In general, the prognosis for bowel obstruction surgery is good if treated before extensive damage to the bowel tissue. The recovery period depends on the patient’s overall health and the type of surgery.
Dr. Bar has practiced at Pennsylvania Hospital since 1974 and averages 550 cases each year for all surgeries. “I’ve been with the bloodless program ever since Dr. Ford established the program here,” he noted, “and the bloodless team does a fantastic job.”

“One major advantage of having a bloodless program is that our patients are prepared preoperatively. If it’s an elective surgery, we prepare for significant blood loss and attempt with cell salvage minimal blood loss,” he noted.

The combined efforts of the CBMS team, the hospital’s surgeons and clinical staff have benefited all patients, Dr. Bar noted.

“As a team member, Dr. Kirkland has witnessed the growth of the bloodless program at Pennsylvania Hospital. “CBMS has become more mature and consequently the pathways we follow and the team member relationships are better developed,” noted Dr. Kirkland.

“As for example, understanding intravenous epogen and iron strategies in bloodless medicine have increased. The ability on the oncology side for the indications to use these agents has become more clearly defined. I think it’s a process of the maturing program,” he noted.
Joel Hendley JOINS CBMS STAFF

The Center for Bloodless Medicine and Surgery welcomes Joel Hendley.

Joel grew up in Pottstown, Pennsylvania and graduated from Central Montgomery County Technical High School in 1989 with a certificate in electrical construction and maintenance. He has worked in the construction field, building schools and other educational structures for several years before accepting a position with Federal Express as a package delivery courier.

During the 14 years he worked with FedEx, Joel was also very busy with volunteer activities. These activities included conducting bible educational seminars in different parts of the country with Roxanne, his wife of 17 years. Joel enjoys culture and diversity, traveling on numerous occasions to Europe, Central America and the Caribbean. This love for people has led to his accepting a position here at Pennsylvania Hospital as a coordinator in the Center for Bloodless Medicine & Surgery. Joel looks forward to meeting and getting to know all the various staff and personnel at Pennsylvania Hospital, as well as getting to know all of our valued bloodless patients.

Going Green – Sign Up for E-Newsletter!

The CBMS newsletter is now available via email to help reduce printing and mailing costs. Newsletter subscribers who prefer to receive future issues by email should contact the CBMS Administrative Offices at: bloodlessmedicine@uphs.upenn.edu.

Note: All email addresses are kept confidential and used specifically to send the CBMS newsletter. Email addresses are never sold or used for other solicitation purposes.