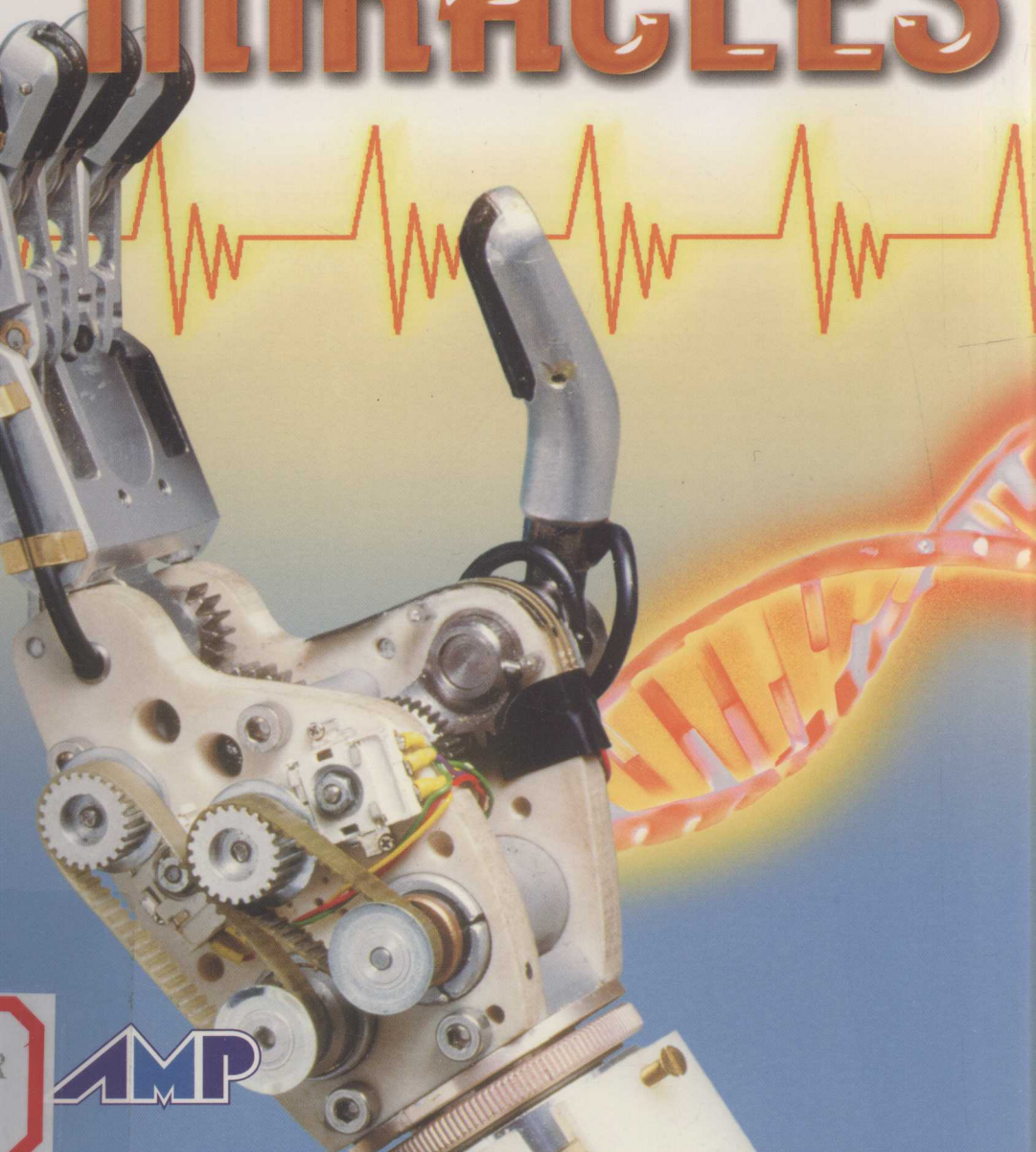


MEDICAL MIRACLES



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MEDICAL MIRACLES

Fast Life in the ER

by Amanda Onion



Amazing
Medical Breakthroughs

by Lou Ann Walker

GLOBE FEARON
Pearson Learning Group

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Fast Life in the ER



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Fast

Life in the

ER

by Amanda Onion

Chapter 1

Emergency!

“Crack!” The batter hits the baseball and makes a dash for first base. A boy named Joe is on first base and starts running for second. The fielding players are fast. Someone is already throwing the ball to second base. As Joe slides in the dirt to touch the base, he is hit in the head with the baseball.

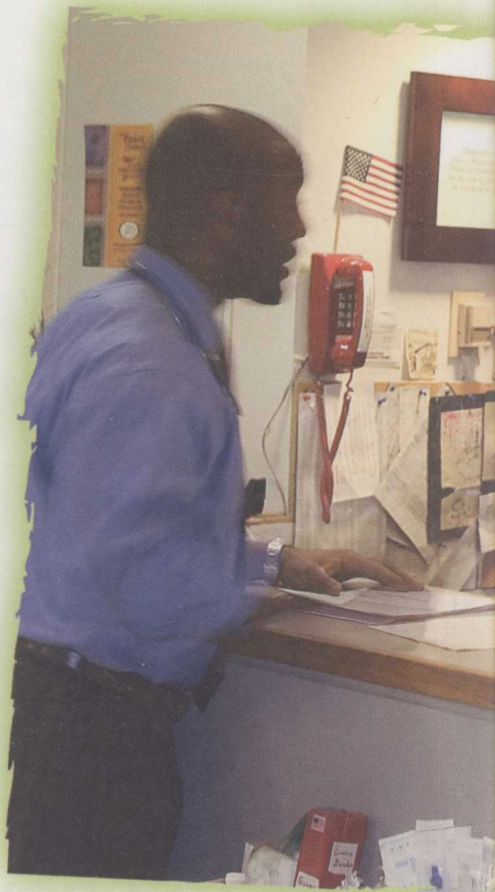
It was an accident, but the ball hits him hard. At first, Joe feels fine. He even finishes the game and goes home with his parents. However, a few hours later, he has a **belated** reaction. He starts to feel very tired. Then, he starts to feel woozy, and he begins to throw up. Joe’s parents are very worried. They think he needs help right away. Joe’s parents drive him to a place where people are always ready to help—the emergency room at the local hospital.

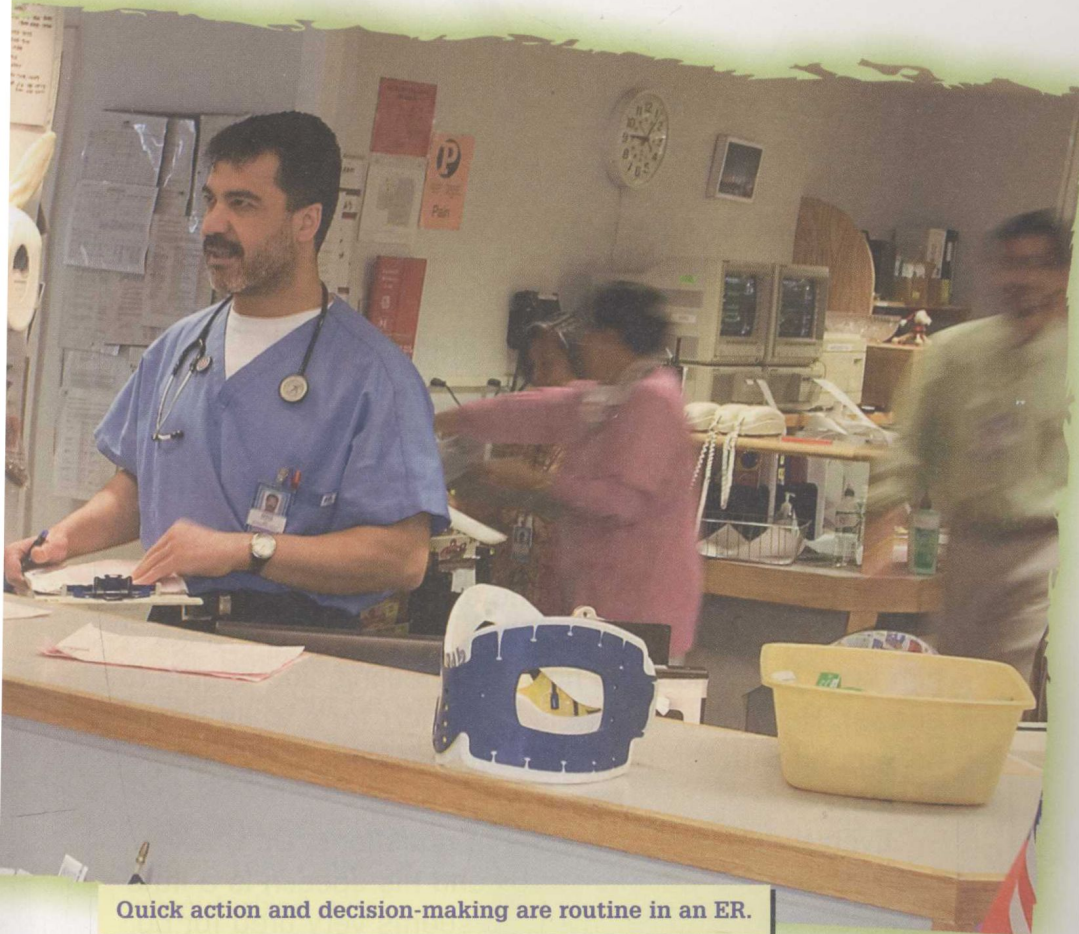
What is an emergency room? It's not really just a room. It is an entire department in a hospital. There is also a whole field of medicine that is called emergency medicine. The "ER," as it is sometimes called for short, is a **hub** of activity where people are trained to act fast.

If you haven't been to an emergency room, you have probably seen one in action on television or in the movies. Sometimes movie and TV-show producers can be a bit **liberal** in the way they portray an ER. They show a lot of shouting and excitement as doctors and nurses run around, rolling patients from room to room on stretchers.

An emergency room operates as a **hub** for treating all kinds of emergencies, and there are usually many people to care for at once. Someone may come in with a sprained ankle; another could have a very bad toothache. Another person may come in with a small cut that can be treated with an **adhesive** bandage.

Depending on where an emergency room is located—in a city or a suburb or a rural area—it can be quiet or very busy or both. Even when it is very busy in a real emergency room, there is a lot of structure that helps doctors and nurses make sure everything goes smoothly. Everybody has a job and knows how to **collaborate** so people can get care fast.





Quick action and decision-making are routine in an ER.

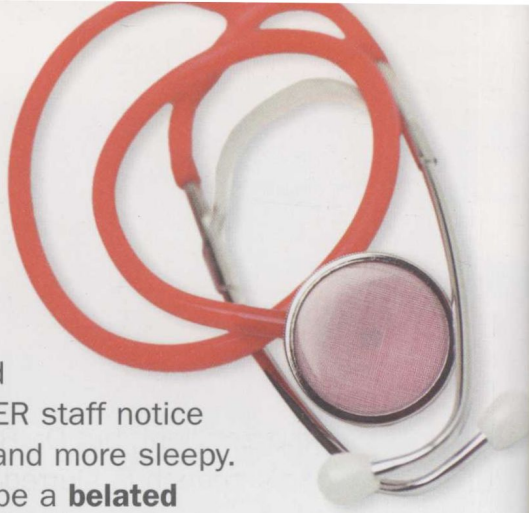
The main doctor who will take care of Joe is Dr. Hillard Boskey. Dr. Boskey is an emergency-room doctor. He has gone through many years of training. You will see how Dr. Boskey uses his knowledge to save Joe's life. For **benevolent** people like Dr. Boskey, saving lives is one of the best jobs in the world.

In the pages that follow you will read about what takes place once Joe arrives at the ER, and what happens to him. In addition, you will get a behind-the-scenes look at a real emergency room. You will learn about the various members of an ER team, the kinds of training they need, and the tools they use to do their work. Finally, you will get a view of a real day in the life of an ER doctor.



Joe Gets Examined

Joe's parents have brought him to the emergency room. As soon as they arrive, the people who work at the ER talk to Joe and his parents. Members of the ER staff notice that Joe appears to be more and more sleepy. The ER team thinks this may be a **belated** reaction to the accident on the ball field. They decide to send him straight to an examination room.



A stethoscope

Dr. Boskey meets Joe in the examination room. The first thing that Dr. Boskey does is talk to Joe. He asks him what happened and how he is feeling. Joe is able to answer. He explains that his head hurt for a while after he was hit with the baseball, but that went away. Now, he feels very tired.

Even though Joe answers the questions, Dr. Boskey notices that Joe speaks slowly and his speech is a little confused and strange. Joe also seems very tired for no obvious reason. The doctor gently touches the spot where the ball struck Joe in the head.

Emergency room doctors have lots of tools and machines to help them do their job. Some of their most important tools are their eyes, ears, and hands. As Dr. Boskey demonstrates, one of the best ways to find out what's wrong with patients is to ask questions, look at them closely, and touch places that might be injured. This way, patients can offer clues about what may be wrong. It's the emergency-room doctor's job to use those clues to learn what might be wrong as fast as possible. Joe is starting to feel more and more tired. He needs help fast.



Chapter 2

What's Wrong With Joe?

Joe doesn't have any obvious injury. He has no broken bones and is not bleeding from any part of the outside of his body. Joe has told the doctor that he felt fine just after the accident, but Dr. Boskey takes clues from the way Joe's speech is slurred and slow and that Joe is becoming confused. Another clue is that Joe is very tired. He is nearly falling asleep on the examining-room table.

When Dr. Boskey checks Joe's heartbeat and breathing, all seems normal. Yet clearly something is wrong. What is making Joe behave strangely?

Dr. Boskey already thinks he knows what the problem is, but he wants to be sure. It's time to order a test. He calls to the ER nurse and asks him to order a test called a computerized axial tomography, or CAT scan. The test should give Dr. Boskey and his team the information they need to understand what is wrong with Joe.

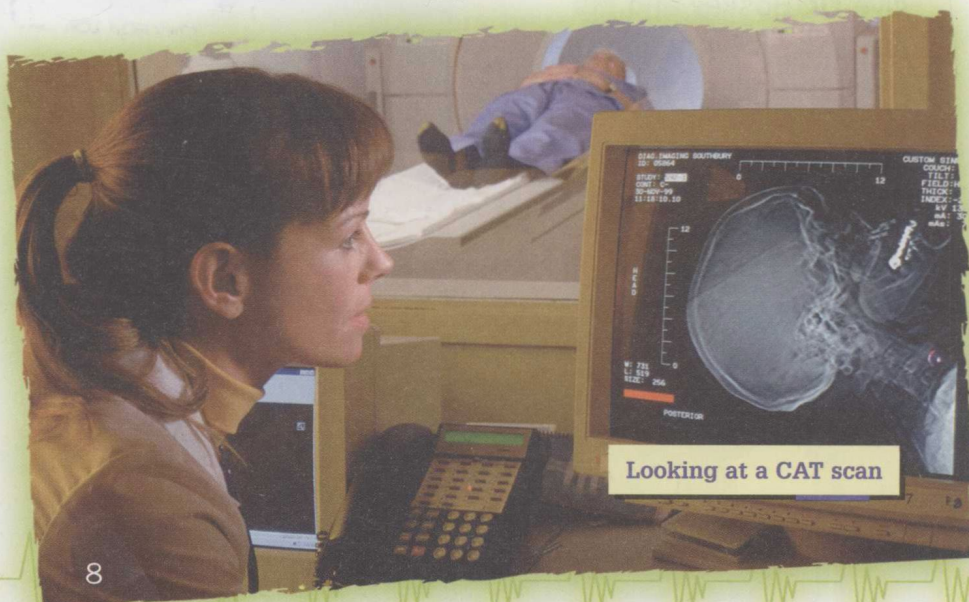
What could be wrong with Joe?

Snapshot of the Brain

Joe is taken to a room with a large machine in the middle of it. At the end of the machine is a round circle that is shaped like an upright donut. Joe lies on a narrow table in front of the machine so his head is just beside the base of the donut.

A technician explains that the table Joe is lying on will roll into the machine's donut-shaped circle. Once Joe's head is within the circle, the machine will take pictures of his brain. The technician asks Joe if he's ready. Joe is a little nervous, but he nods his head yes. The table moves forward, and Joe slowly glides into the middle of the machine's circle.

The technician goes into a small room beside the room with the machine. She talks to Joe through a microphone. The technician explains to Joe through the microphone that he will hear some loud clicking and whirring noises. What makes the noises? Inside the CAT scan machine is an x-ray camera in the shape of a tube that is moving around the circle to produce pictures of Joe's brain. It makes a whirring sound as it moves and a clicking sound as it produces pictures of his brain from almost every possible angle.



Looking at a CAT scan

Proof in a Picture

The CAT scan machine takes pictures by passing x-ray beams through Joe's skull and brain. A camera device spins with the tube so it is always opposite the x-ray tube. This way, it captures the images created as the beam passes through Joe's brain.

Because some parts of the brain are more **porous** than others, the x-rays create pictures of shadows in lighter and darker shades. All the information is then fed into a computer, which puts it together to make a complete picture.

The CAT scan machine takes many pictures of Joe's brain one segment, or slice, at a time. This way Dr. Boskey will be able to examine all areas of Joe's brain. If the baseball did any damage to Joe's brain, the doctor should be able to see the problem in at least one of these pictures.

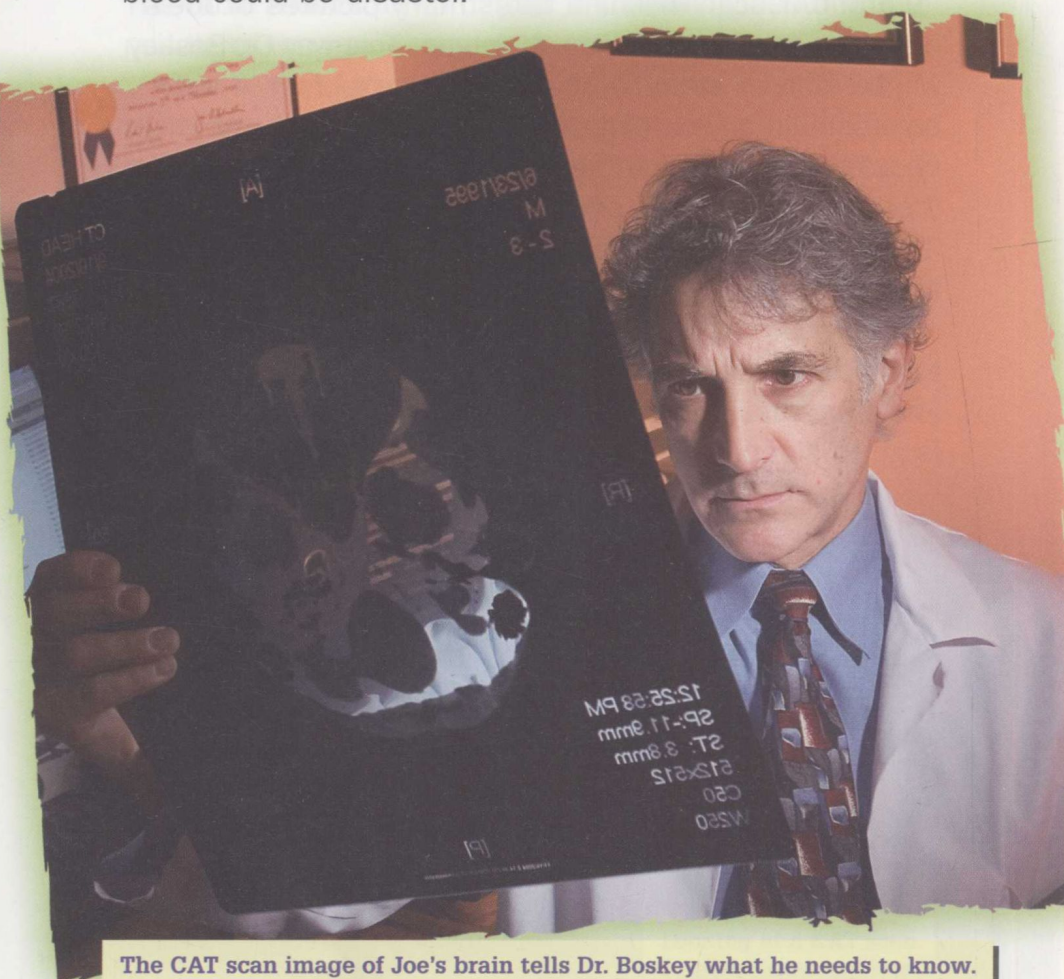
After more loud clicking and whirring, the technician tells Joe that the CAT scan is done. The platform that Joe is lying on glides out from the machine's circle. The technician develops the images and lets Dr. Boskey know the results are ready. By now, all Joe wants to do is go to sleep.

As soon as he looks at the CAT scan images, Dr. Boskey sees that his suspicion is correct—there is bleeding inside Joe's brain. The bleeding is what has been making Joe feel dizzy and sick. It is probably also the reason why his speech is slurred.

Bleeding in the brain is a serious problem that needs attention right away. If the bleeding continues, it could pool inside of Joe's skull and place pressure on his brain. This pressure can hurt the brain. A brain surgeon will need to operate immediately to drain the blood and relieve the pressure.

Because Joe is young, he would normally go to a special hospital for children to have the surgery, but that hospital is about 5 miles away. Getting Joe to this special hospital would mean putting him in an ambulance and taking him there—and possibly driving through traffic. The time spent traveling could interfere with saving Joe's life.

Dr. Boskey must make a quick decision. What should he do? Dr. Boskey doesn't think Joe has time to go to another hospital. If the bleeding is allowed to continue, he could have brain damage. Even a tiny amount of blood could be disaster.



The CAT scan image of Joe's brain tells Dr. Boskey what he needs to know.

Dr. Boskey takes the **initiative**. He decides that a brain surgeon should perform the operation right away in the hospital. The ER team responds immediately. The team members will **collaborate** on this surgery. Joe is wheeled on a stretcher to another floor and into an operating room.

A brain surgeon in the hospital starts washing her hands very carefully so she won't **contaminate**, or spread any germs, to Joe during the operation. The surgeon and a team of nurses, a technician, and another doctor all put on gloves, masks, and surgical clothes and gather around the operating-room table on which Joe is lying.

Someone places a mask over Joe's nose and mouth. A gas with a **pungent** odor is pumped through the mask and makes Joe go right to sleep. Soon, the surgeon will make a small hole in his skull so the blood around his brain can drain away. It sounds scary, but it may be the only thing that will save his life.

Joe is fast asleep on the operating-room table, and a brain surgeon in the hospital is getting ready to operate. Since Dr. Boskey's **initiative** that Joe should have the surgery went into effect, the brain surgeon took over. She is in charge of Joe now.

Surrounded by a team of nurses, the surgeon begins to operate. Joe's CAT scan is the surgeon's guide. She locates the place where the scan shows there is bleeding. She finds the same place on Joe's head. This spot is where Joe was hit by the baseball.

The surgeon will have to cut into Joe's head and skull. She must drain the blood from underneath Joe's skull quickly before his brain can be damaged. The brain surgeon begins to make her cut. It won't hurt Joe, though. He has been given medicine with a special **ingredient** so he doesn't feel any pain.

Chapter 3

Brain Surgery

The brain surgeon manages to cut a small hole in Joe's skull near where he was hit by the baseball. The same way nurses, doctors, technicians, and doctors-in-training work as a team in the ER, the members of the surgery team work together in the operating room. The nurse hands the brain surgeon tools and instruments as she needs them. Another doctor monitors Joe's heartbeat and breathing to make sure he is okay.

A doctor-in-training may also be there to help, but, most importantly, he watches. Someday he could be performing similar surgeries. This is his time to learn.

Gently, the brain surgeon allows the blood that has pooled under Joe's skull to drain. Once it has been collected in a small pan, a nurse discards the blood. Otherwise the **pungent** odor of the blood would be pretty unpleasant! The brain surgeon then covers the hole in Joe's skull with Joe's skin and sews up where she made the cut.

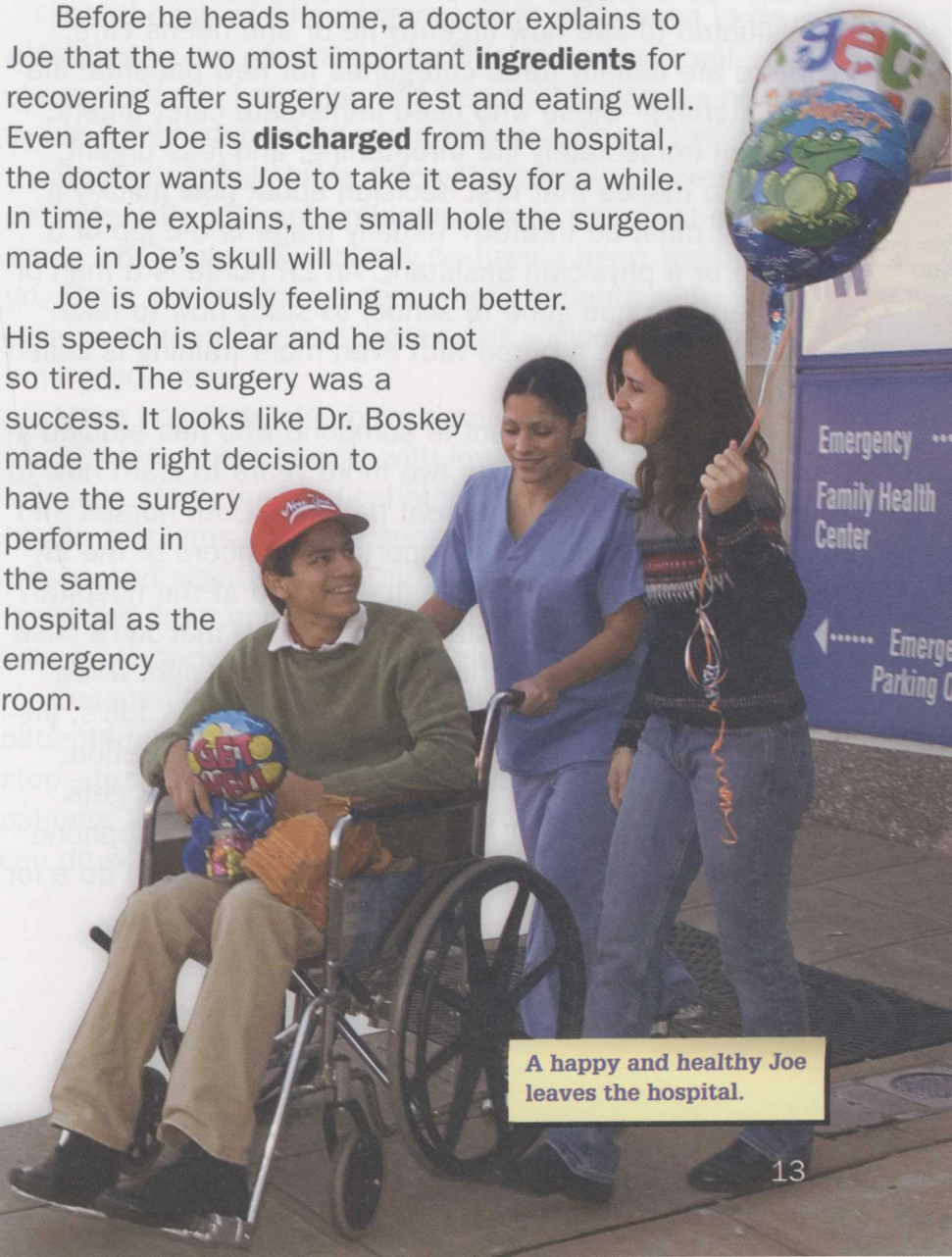
The operation goes fairly quickly because the operating team was so well prepared and focused as they worked. Joe, who is still asleep, is rolled into an area called the recovery room. His family has been waiting in still another room. Naturally they've been worried and are eager to hear how the surgery went.

After a while Joe wakes up. He probably feels groggy from the medicine that made him sleep so deeply, but his speech is normal again. Joe will still need plenty of time to fully recover from his operation. As Joe sleeps through the night, new patients keep streaming into the hospital's emergency room.

Joe spends about a week in the hospital. This way the hospital team can watch him through the night and make sure no **belated** reactions from the surgery arise. One morning, Joe wakes up feeling better than ever. He has breakfast and then gets ready to go home. He takes off the pajamas that the hospital staff gave him and puts on his own clothes. He's much better and ready for his doctors to **discharge** him from the hospital.

Before he heads home, a doctor explains to Joe that the two most important **ingredients** for recovering after surgery are rest and eating well. Even after Joe is **discharged** from the hospital, the doctor wants Joe to take it easy for a while. In time, he explains, the small hole the surgeon made in Joe's skull will heal.

Joe is obviously feeling much better. His speech is clear and he is not so tired. The surgery was a success. It looks like Dr. Boskey made the right decision to have the surgery performed in the same hospital as the emergency room.



A happy and healthy Joe leaves the hospital.

The ER Team

Joe was lucky. He got the help he needed—quickly. Now that you have seen how Joe's case worked out, let's go back and take a closer look at the ER. Many different people work in an emergency room, and they all have different jobs to do.

When Joe arrived at the ER with his parents, his first stop was at triage. This is where each patient is evaluated to see how urgently he or she needs care. There are usually three categories for new patients: life threatening—those who need immediate care; urgent, but not immediately life threatening; and less urgent.

Who makes that first decision about how quickly a patient must be treated? Usually triage is the job of a nurse or a physician assistant. An ER nurse is a man or woman who has gone to school to study how to take care of people. A nurse with even more training is called a nurse practitioner.

A physician assistant is someone who has studied in college and then studies two more years to learn how to examine, diagnose, and treat patients. Both nurses and physician assistants are important members of the ER team. Remember when Joe first arrived at the hospital? It was a physician assistant who decided that Joe's case was most urgent and that he needed help right away.

If a patient's condition is not as urgent as Joe's, the next stop after triage would probably be registration. Registration is where an emergency room clerk gets information, including the patient's address, telephone number, and insurance company. ER clerks also do a lot

more. They can help doctors order things like x-rays and blood tests. They take calls from worried family members, and they answer calls for the people who work in the emergency room.

If family members are feeling worried and upset, there are usually **benevolent** people around to help them too. The emergency-room technician may comfort them and try and **dilute** their worries.

It is the job of all emergency-room employees to be **attentive** to the patients. A technician or nurse will check patients' breathing and heart rate. Doctors need to have that information when they examine a patient.

Some hospitals have different examining rooms for patients with different problems. There are chest-pain areas where people who may be having heart trouble go. There are trauma centers where patients with serious injuries, such as from a car accident, can get emergency care.

Many hospitals also have a section called a "fast track" area, where people with less serious problems are sent. Here, the medical staff can take care of minor health problems, such as sprained ankles, broken wrists, and slight fevers. This way, people with small problems don't end up having to wait too long as people with more serious problems receive care first.

Because there are often many different areas patients may be sent, the people who work at the first stop—triage—are like traffic directors. They direct patients to the most appropriate area so the ER team can do what is needed for each patient.

Chapter 4

What Does It Take?

What does it take to work in an emergency room? One **ingredient** is experience. Dr. Boskey has worked as an emergency-room doctor for more than two decades. However, when it comes to being a good doctor, education and training are just as important as experience. Becoming an ER doctor takes a lot of training and education.

After finishing high school, Dr. Boskey studied for 4 years at college, then spent another year taking more science courses. That sounds like a lot of studying, but Dr. Boskey wasn't ready to be a doctor yet. Next, he went to medical school for 4 years.

At medical school, students learn how the human body works. They learn the name, place, and function of every bone in the human body. They learn how the muscles work and how the heart beats and lungs breathe. They learn how to recognize and treat diseases. There are thousands of diseases that affect people and many different medications to treat those diseases.

