Speech Outline
Full Speech Video: Speaking to Inform
“Medical Robots: From Science Fiction to Science Fact”

Introduction

I. Maureen Schrader lay on the operating table at Saint Barnabas Medical Center.
   A. Four mechanical arms moved over her abdomen.
      1. One arm held a high-definition camera.
      2. The others made a five-centimeter incision just below her ribcage.
      3. The opening was tiny, but big enough to put a new kidney into Maureen’s body.
   B. At no point did the surgeon touch Maureen.
      1. He sat several feet away peering into a monitor and holding what looked like video game controls.
      2. The movements of surgeon’s hands were sent to the robotic arms that mimicked his every movement.
      3. Together, the robot and the surgeon transplanted the kidney.

II. Robots in the operating room are now a reality.
   A. The next operation you undergo may involve a robot.
   B. But surgery is just one area in which robots are changing modern medicine.

III. As a pre-med student, I have long been fascinated by medical robots, and I have researched the topic further for this speech.

IV. Today I’d like to introduce you to the world of medical robots.
   A. We’ll take a look at three kinds of robots—orderly, remote-presence, and surgical robots.
   B. Let’s begin with orderly robots.

Body

I. Orderly robots help hospital staff accomplish routine tasks.
   A. Their primary job is to transport medicine, food, and lab supplies.
B. The TUG robot is one of the most popular orderly robots.
   1. TUG is used in more than 100 hospitals in the United States.
   2. A September 2010 story in *Discovery News* explains how it works.
      a. Relying on a digital map of the hospital, the robot moves from room to room
         transporting supplies.
      b. It sense people and obstacles by using “light whiskers”—invisible beams of
         sonar, infrared, and laser.
      c. These light whiskers constantly scan the environment to avoid collisions.
      d. TUG robots can also communicate with one another about the best route to a
         location.
C. Orderly robots have several benefits.
   1. They are highly efficient and make fewer errors than people.
   2. Mark Weigel, director of food services at Bethesda Memorial Hospital in Maryland,
      notes that the TUG robot “never argues with patients, takes no breaks, is always
      polite and always on time.”
(Transition: But orderly robots are not the only robots transforming modern medicine.)

II. Remote-presence robots help doctors visit their patients even when they are not in the
same room.

C. Imagine sitting in a hospital room when in comes the RP-7.
   1. A 2009 story in *US News and World Report* explains that physicians can pilot
      these robots from a laptop.
   2. A screen, camera, microphone and speaker system allow the doctor to interview
      the patient.
   3. Hospital staff can even attach medical devices to the robot so the doctor can
      review a patient’s vital signs.

B. Remote-presence robots have caught on in American hospitals.
1. According to a 2010 article in *Hospital Management*, the RP-7 is used in more than 250 U.S. hospitals and has performed more than 100,000 clinic sessions.

2. They are particularly important in hospitals with a high patient-to-doctor ratio.

(Transition: In addition to orderly and remote-presence robots, a third kind of robot is changing modern medicine.)

III. Surgical robots are being used in operating rooms around the world.

A. The most popular is daVinci.

   1. According to a 2010 article in the *Miami Herald*, more than 1,400 daVinci robots are in use.

   2. They help perform 200,000 operations a year.

B. Intuitive Surgical, maker of daVinci, explains that a surgeon controls the robot from a remote terminal.

   1. The terminal is usually a few feet away but can be thousands of miles away.

   2. The doctor moves the robot’s arms by utilizing an interactive 3-D imaging system.

   3. Even though the robot is touching the patient, the surgeon is in control.

C. Doctors love daVinci because it dramatically improves the quality of surgical procedures.

   1. Dr. Jeffrey Wolf, a head-and-neck surgeon at the University of Maryland medical center, states that daVinci “gives us unprecedented access with really good 3-D visualization. We’re now able to perform intricate surgeries in a very small space with great dexterity.”

   2. DaVinci also reduces the risk of complication, allows for faster healing, and helps patients leave the hospital sooner.
Conclusion

I. In conclusion, we’ve seen that medical robots are playing an important role in medicine.

II. Whether they’re running errands, helping physicians connect with patients, or acting as a surgeon’s eyes and hands, medical robots have brought the future into the present.

A. The next time you’re at the hospital, keep your eyes peeled for the kind of technological marvels that used to exist only in science fiction.

B. Medical robots are now a matter of science fact.