

CHAPTER 1

Healthcare Personnel

LEARNING OBJECTIVES

By the end of this chapter, students will be able to:

- Differentiate between direct contact health providers and those with limited or no patient contact
- Understand the essential educational requirements and duties of varied healthcare providers
- Explain how many healthcare providers work together to improve the health outcomes of patients

CHAPTER OVERVIEW

In the modern world of healthcare, there are numerous types of healthcare personnel. To introduce the topic of healthcare personnel, this chapter will present the first segment of a case study. After the case study, the chapter provides a description of healthcare professions divided into two major categories: limited or no patient contact and direct patient contact. For each health profession, the chapter includes educational requirements, locations of employment, and descriptions of the primary duties, annual salary, and professional organizations. The case study continues in segments throughout the chapter to show the reader examples of how numerous health professions intertwine to serve one individual, Katherine. Prior to starting with the case study, let us review the role of the health navigation professional. The chapter

notes where health navigation professionals serve in the healthcare system. See **Box 1.1**.

CASE STUDY: PART ONE

Brief description: Katherine, age 53, is a white female who works full-time at the local community college. She is married to Michael, and they have two children: Rachel, who is 24 and works full-time as an elementary teacher while living at home with her parents; and Paul, who is 18 and a freshman at a state university about 5 hours from home. Michael is employed as a computer science technician. Katherine's mom died last year at the age of 90 from congestive heart failure, with a history of breast cancer at age 80. Her father died at age 82, 15 years ago, from an acute myocardial infarction (AMI). Katherine has never been hospitalized other than for childbirth.

September: Katherine and Michael, her husband, arrive at the outpatient surgery center at 5 a.m. The valet parking attendant opens the passenger door to help Katherine get out of the car. Michael walks around and exchanges the key for a valet ticket. They walk inside and meet the front desk clerk, who asks for Katherine's driver's license and insurance card. She verifies that Katherine is on today's schedule for a **colonoscopy**

BOX 1.1 Description of Health Navigation Professionals**Health Navigation Professional**

Education	<p>Associate's degree programs that include basic science, medical terminology and additional general education coursework.</p> <p>Preferred skills and experience: Experience with community programs and services; strong analytical skills, ability to work independently with little supervision and ability to handle concurrent projects; strong interpersonal skills, including professional telephone skills and ability to work with medical and support staff in a professional manner; must type and possess computer skills, with experience in Microsoft applications; must have experience in drafting letters, memos, and spreadsheet applications and have the ability and skills to format, distribute, and maintain health communications and reports; knowledge of office administration and the ability to create and maintain organized systems; experience in working with culturally diverse populations and knowledge of medical systems and community resources desirable.</p>
Work Duties	<p>A health navigator is a health professional who focuses on the patient's needs, including guiding patients through the healthcare system and working to overcome obstacles that are in the way of patient required care and treatment. Some of the responsibilities of the health navigation professional include organizing schedules and managing appointments for patients to ensure they receive services in a timely manner; facilitating communication among the patient, family members, and healthcare providers to ensure patient satisfaction and quality of care; managing healthcare records, informing the patient on financial aspects of care and linking patient to financial resources as needed; accommodating interpretive language services when needed, managing follow up visits, and ensuring continuation of care and linkage to community resources. In addition, the health navigation professional is involved with outside entities. Patients may have needs to arrange legal counsel, home health care, transportation, or specialty care outside the hospital setting. Health navigation professionals collaborate with diverse organizations and personnel to ensure the needs of the patient are met, are involved in patient education about their care, and foster patient understanding of treatment options.</p>
Alternative Work	<p>Health navigation professionals work in a variety of healthcare settings, but hospitals are the most common place of employment. Health navigation professionals may specialize in a certain area such as oncology or diabetic care. Patient navigators may work with patients of all ages, from infants to geriatric populations. The patient navigator also works closely with the healthcare providers and healthcare institution.</p>
Salary	<p>\$44,000 average salary, depending on location, industry, experience, and benefits.¹ The employment outlook for health navigation professionals is good, because the Affordable Care Act created a need to ensure patient satisfaction and quality health care at an affordable cost.²</p>
Hours	<p>40-hour workweek; work is full-time or part-time; hours are 8- or 12-hour shifts; usually involves daytime work with some night and weekend shifts.</p>

procedure and requests a credit card to process the co-payment insurance charge. Upon receipt of payment, she directs Katherine and Michael to the outpatient surgical waiting room. They wait a few minutes; then, the admitting registered nurse (RN) calls Katherine's name. She verifies her name, date of birth, and reason for visit. She places a plastic band on Katherine's wrist and asks if she has any allergies. Katherine states that she is allergic to penicillin. The RN writes "penicillin" on a pink armband and places it on Katherine's wrist. Another RN, Lisa, comes to get Katherine and Michael. She will be in the exam room during the colonoscopy. She instructs Katherine to change into a gown and place all of her clothing and belongings in a large plastic bag, which is given to Michael. Lisa starts an intravenous (IV) catheter in Katherine's arm, so the physician has access to a vein for medications during the procedure. Prior to starting the procedure, the anesthesiologist stops by Katherine's bed and asks a few more questions related to her medical history and allergies. She comes back in a few minutes and injects some relaxation medication into Katherine's IV tubing. Within an hour, the gastroenterologist is ready to perform Katherine's colonoscopy. She is wheeled into the exam room, the anesthesiologist injects quick-acting, short-term medication, and Katherine drifts off to sleep. This procedure usually takes about 20 minutes, but for Katherine the procedure lasted only 10 minutes. The RN moved Katherine back to her outpatient room where Michael was waiting. The anesthesia wore off quickly and the gastroenterologist stopped by to inform Katherine and her husband that he suspected that she had colon cancer. There was a blockage in her colon that did not allow him to examine the colon as the procedure is intended to do. He explained that he had removed three tiny pieces of the suspected tumor that was causing the blockage and had sent the tissue samples to the lab for a pathologist to confirm the colon cancer diagnosis. After the cancer diagnosis was discussed and Katherine's questions were answered, the gastroenterologist gave Katherine a referral to a colorectal surgeon to schedule a surgical procedure to remove the tumor.



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The RN returned to her room and removed the IV. She told Katherine that she could get dressed. In a few minutes, the RN returned with Katherine's discharge summary papers, a paper copy of the referral for the gastroenterologist (colorectal surgeon), and a paper prescription for a stool softener and pain medication.

Although this case study explores various types of healthcare personnel, it also reveals the number of individuals that a patient encounters when receiving health care. More of this case study is presented near the middle and at the end of this chapter.

HEALTHCARE PERSONNEL

Using this case study, let us begin to explore various types of healthcare personnel. The list provided is not meant to be all-inclusive, but rather a descriptive sampling of healthcare employment opportunities. The list is divided into two categories: healthcare personnel with limited patient contact and healthcare personnel with extensive patient contact. Each category begins with entry-level positions and advances through the list to positions requiring higher levels of education. Because the health navigation professional is a relatively recent addition to the healthcare system, a description of how health navigation professionals supplement or stand alone in a variety of healthcare duties is provided. Throughout the chapter, the U.S. Bureau of Labor Statistics was used for salary information (www.bls.gov).

Limited or No Patient Contact

Hospital Billing Clerk*

*Entry level for Health Navigation Professional

Education	Entry-level position that requires completion of a coding certification program plus a 2-year associate's degree in health information technology.
Work Duties	Responsible for coding and entering medical records, communicating with insurance companies and billing patients; uses computer software and knowledge of insurance and billing practices to correctly translate verbal descriptions of diagnoses and procedures into numerical codes.
Alternative Work	Bill and Account Collector; Bookkeeping, Accounting, and Auditing Clerk
Salary	\$33,450 median salary
Hours	40 hours per week; some evenings and weekends
Professional Organizations	American Health Information Management Association (www.ahima.org)

Medical Transcriptionist*

*Entry level for Health Navigation Professional

Education	Entry-level position that requires a 1-year certificate program or a 2-year associate's degree program.
Work Duties	Transcribes recordings made by physicians and other healthcare workers to produce medical records, regulatory documents, and other pieces of correspondence; documents are then returned for review, corrections, or signing.
Alternative Work	Hospital Transcriptionist; Dental Transcriptionist; Radiology Transcriptionist
Salary	\$35,260 median salary
Hours	Self-employed; work at home; freedom to choose own hours
Professional Organizations	Association for Healthcare Documentation Integrity (AHDI), formerly the American Association for Medical Transcription (www.biotechmedia.com/AAMTrans-Maillist.html)

Medical Record and Information Technician*

*Entry level for Health Navigation Professional

Education	Associate's degree with specialized credentials and courses in coding systems, healthcare reimbursement, anatomy, physiology, and data systems.
Work Duties	Organize and maintain medical records by collecting information about patients, including test results, diagnoses, exam results, recommended treatments, prior medical history, and other relevant data; records must be well organized; security and accuracy of the records is essential because small mistakes could result in a large liability.
Salary	\$37,710 median salary
Hours	40 hours per week
Professional Organizations	Professional Association of Health Care Coding Specialists (PAHCS); the Board of Medical Specialty Coding (BMSC); the American Academy of Professional Coders (AAPC); and the National Cancer Registrars Association (NCRA)

Ophthalmic Laboratory Tech

Education	Ophthalmic laboratory technicians complete on-the-job training, though there are courses available at technical institutes for certificates in ophthalmic technology; students learn customer service through equipment maintenance for creating contact lenses and glasses.
Work Duties	Ophthalmic laboratory technicians make glasses and contact lenses based on the optometrists' instructions.
Work Alternative	Some ophthalmic technicians create telescope lenses and binoculars.
Salary	The salaries for ophthalmic technicians range from \$18,487 to \$38,555. ³
Hours	40 hours per week; some evenings and weekends
Professional Organizations	None at this time

Medical and Clinical Laboratory Science Professions

Education	Associate's degree with specialized credentials and courses to carry out laboratory tests and operate laboratory equipment under the supervision of a certified medical laboratory technologist. Bachelor's and master's degrees are available in a variety of laboratory science professions. Graduate degrees focus on research and leadership skills for supervisory and management careers.
Work Duties	Maintain all laboratory equipment; prepare the laboratory equipment and specimens for tests; collect patient's body fluids for lab tests and analysis; analyze and record test results; issue reports that utilize graphs, charts, and narratives; perform blood counts and blood tests; assist medical laboratory technologists in less complex laboratory tests and procedures. Possible professions include Blood Bank Specialist, Clinical Genetic Technologist, Clinical Laboratory Sciences, Cytotechnologist, Hematology Technician, Histologic Technician, Histological Technologies, Medical Laboratory Technologies, Phlebotomy, and Renal and Dialysis Technician.
Work Alternative	Various health care facilities, including hospitals, medical offices, research laboratories, health clinics, veterinary laboratories, medical diagnostic laboratories, and biotechnology companies.
Salary	\$33,619–\$41,000 median salary
Hours	40 hours per week; some evenings and weekends
Professional Organizations	American Medical Technology (www.americanmedtech.org/default.aspx)

Medical Staff Services*

*Entry level for Health Navigation Professional

Education	High school diplomas for entry-level positions; however, most employers prefer candidates with associate's or bachelor's degrees in business administration or a related field; courses include health information science, management principles, medical terminology, and health care law.
Work Duties	Ensure health care staff is compliant with regulatory requirements; responsible for coordinating credentialing processes and maintaining databases of physician information, as well as other administrative duties; required to be familiar with relevant government regulations and be responsible for monitoring compliance.
Work Alternative	Health care office manager, medical credentialing specialist, medical staff coordinator
Salary	\$41,755–\$64,665 range
Hours	40 hours per week

Medical Facilities Management

Education	Entry-level positions are available after completing a degree at the undergraduate level; many positions require a master's degree; some medical facilities managers have degrees in engineering or architecture, while others have a degree in health administration.
Work Duties	Ensure that health care facilities, such as surgical centers, clinics, public health organizations, and hospitals, are properly cleaned, maintained, and supplied; oversee implementation of new technology and energy efficiency initiatives.
Work Alternative	Facilities maintenance director, facilities administrator, certified facilities manager, facilities coordinator
Salary	\$93,290 median salary
Hours	40 hours per week

Medical Ethics and Bioethics

Education	Educational requirements include a master's or doctoral degree in bioethics, applied ethics, or a law degree in health care ethics. Some degrees have clinical practicum requirements for students to gain experience. A degree in medical ethics or bioethics can lead to a position creating health care policies, working in hospital administration, teaching bioethics at the postsecondary level, or working as a medical professional.
Work Duties	Medical ethicists and bioethicists work in large hospitals, law offices, and universities. Their work focuses on the emerging questions related to the latest advances in medicine, science, and technology.
Work Alternative	Additional career options include Bioethics Programs, Medical Ethics Programs, Health Care Consultant, Health Care Lawyer, Hospital Administrator, and Legal Nurse Consultant
Salary	The median annual salary for medical ethicists and bioethicists is \$68,800. ⁴
Hours	40 hours per week with some evenings and weekends
Professional Organizations	There are no specific professional organizations; however, most ethicists join professional associations closely related to their field of expertise.

CASE STUDY: PART TWO

On the way home from the outpatient center, Katherine's husband dropped off the two medication prescriptions at the pharmacy. The pharmacy technician logged the paper prescriptions into the computer, and the pharmacist filled the prescription. With the medication in hand, Michael took Katherine home. She felt tired, but was not experiencing any pain. She took a nap and then called to schedule an appointment with Dr. Smith, the colorectal surgeon recommended by the gastroenterologist who performed the colonoscopy. The medical assistant scheduled the appointment for the next week.

When Katherine returned to work the following day, she talked to a coworker who recommended another colorectal surgeon, Dr. Williams,

in the same office. Katherine called the office back and asked the medical assistant from the previous day about the difference between the two surgical techniques.

She learned that Dr. Smith did not use the laparoscopic procedure for colon cancer and that Dr. Williams used only the laparoscopic procedure for colon cancer. Because the laparoscopic procedure involved three tiny half-inch incisions and only 2 days in the hospital and the standard procedure involved a 6-inch incision and 4 days in the hospital, Katherine decided to select the laparoscopic procedure. Dr. Williams did not have any surgery appointments open for 2 weeks, but Katherine decided to wait the extra week for the laparoscopic procedure.

October: Prior to the day of surgery, Katherine had to go to the hospital for a chest X-ray, blood



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work, and pre-authorization for the procedure through her health insurance provider. During the course of this hospital visit, she encountered the valet parking attendant and the hospital information clerk who had given directions to the preadmission clerk. The preadmission clerk verified that Katherine's health insurance policy had agreed to authorize payment for her surgery, and then the

clerk told Katherine that her surgical co-payment was \$150. Fortunately, Katherine and Michael are both employed, so they had sufficient money to pay the \$150 **co-payment** required by her insurance policy for any surgical procedure. After making the payment, she was given directions to the lab, so she could have her blood drawn prior to surgery. The lab technician took Katherine's paperwork and directed her to sit in one of the chairs. The lab technician wrapped a tourniquet around Katherine's arm, inserted a needle into her arm, and withdrew two vials of blood. The lab technician placed the computer label with Katherine's name and date of birth on each vial. Both vials were delivered to the laboratory hospital courier to send it to the laboratory for processing. The medical technologist in the laboratory processed the blood and sent a final computer report to the surgeon's office. Katherine's next stop for the day was the Department of Radiology. The same basic procedure was conducted here as well. The radiology technician took her paperwork and instructed Katherine to follow her into a room for the chest X-ray. There was no need to remove any articles of clothing for the chest X-ray. Katherine put down her purse, stepped up to the X-ray machine, held her breath when instructed to do so, and in a few seconds was told that she was finished and could leave. Katherine had completed the preoperation requirements, so she found her way back through the maze of hallways to the parking valet and left the hospital.

Extensive Patient Contact

Medical Office Assistant*

*Entry level for Health Navigation Professional

Education	There are no formal education or training requirements for medical assistants; 1-year programs lead to diplomas or certificates, while associate's degree programs require 2 years.
Work Duties	Perform a variety of administrative tasks key to the overall functioning of a doctor's office, including office administration, medical terminology, insurance billing, and basic back-office clinical duties.
Salary	\$27,420–\$30,740 range
Hours	40 hour per week
Professional Organizations	American Association of Medical Assistants (www.aama-ntl.org)

Certified Nursing Aide (CNA)

Education	Six-week to 3-month training programs are located in medical facilities, vocational schools, and community colleges. Once the requirements for certification are met, a certified nursing assistant credential (CNA) is awarded. Courses include medical terminology, geriatric care, nutrition, rehabilitation, vital signs, mental health, patients' personal care needs, patient rights, and responding to medical emergencies.
Work Duties	Assisting patients with eating, bathing, and dressing; taking some vital signs (e.g., respiration rate, temperature, blood pressure), making beds, noticing any changes in the physical or emotional state of a patient, and notifying a nursing supervisor.
Work Alternative	CNAs work in hospitals, skilled nursing facilities, long-term care facilities, and in home health care.
Salary	\$24,890 median salary
Hours	40-hour workweek: 8-hour shifts including days (7 a.m.–3 p.m.), evenings (3 p.m.–11 p.m.), and nights (11 p.m.–7 a.m.).
Professional Organizations	The federal government provides oversight on the certification of nurse aides.

CASE STUDY: PART THREE

Monday arrived—the day of Katherine’s surgery. Michael and Katherine arrived at the hospital at 6 a.m., as stated on the paperwork that was given to her at the preadmission appointment. They parked the car and walked into the main hospital lobby. A large sign reading “INPATIENT ADMISSION” marked the entrance for admission. A receptionist verified Katherine’s name, date of birth, and requested a copy of her health insurance card. Again, Katherine received a plastic identification (ID) bracelet with her name, date of birth, hospital barcode, and admitting physician’s name and hospital number. Upon completion of the verification process, Katherine and Michael were asked to take the elevator to the third floor. As they stepped off the elevator, another large sign directed them to the surgical waiting room. Michael was asked to wait in this area while Katherine was prepared for surgery. Katherine was told to change into a hospital gown, paper booties, and a hair cap. The presurgical RN checked her ID bracelet and then explained that after she started the intravenous line in Katherine’s arm, Michael would be able to stay at Katherine’s bedside until it was time for surgery. Michael sat next to Katherine’s bed for over an hour, waiting for Dr. Williams, the surgeon. While they waited, the **anesthesiologist** came by, performed a brief

history and physical exam, and asked Katherine a few questions related to her past experience with surgery and anesthesia. Because Katherine had never had any anesthesia prior to her colonoscopy, she did not have much information for the anesthesiologist.

About 8:30 a.m., Dr. Williams arrived in the presurgical area. He reintroduced himself to Katherine and Michael and gave a brief overview of her surgery and the laparoscopic procedure. He introduced Nancy, the circulating RN during the surgery, and Eileen, the RN (“scrub nurse”) assisting with the surgery. Then he asked Katherine to sign the surgical consent form; Eileen witnessed her signature. The presurgical nurse gave Katherine the IV medication prescribed by the anesthesiologist, and then Michael gave her a kiss and was escorted back to the waiting room. By this time, their daughter had arrived to wait with her father while her mother was in surgery.

The surgery lasted about 2 hours. Dr. Williams was assisted by Eileen, the RN scrub nurse. The title “scrub nurse” is used because this RN wears a sterile gown, gloves, and mask and stands next to the surgeon during the operation. The scrub nurse hands sterile surgical instruments to the surgeon. The other RN, Nancy, is the circulating nurse in the operating room. Her position involves handling non-sterile items, such

as non-sterile plastic bottles to collect tissue samples, using the phone or intercom system, and moving the surgical lights, as needed. Dr. Williams sent 3 tissue samples from the colon tumor that was removed and 16 lymph nodes to pathology. The pathologist, a board-certified medical physician, specializes in diagnosing tissue, bone, muscle, and forensic types of medical conditions. After Dr. Williams completed the surgical procedure and closed the tiny puncture wounds from the laparoscopic procedure, Katherine was moved to the post-anesthesia recovery area. Because her vital signs (temperature, pulse, respirations, blood pressure) were stable, Michael was allowed to visit for a few minutes and then return to the waiting room. Katherine was moved to her hospital room. She was groggy, but awake with minimal pain. Because Katherine was in a private room, Michael was able to spend the night and get some sleep on the couch in her room. The next morning, Katherine was able to eat clear liquids (Jell-O, broth, ginger ale) and walk a bit in the hallway. Dr. Williams stopped by her room in the afternoon and told Katherine that he had been able to remove the colon tumor and blockage. He told

her that the pathology report would be available on Friday. Of course, Katherine was eager to learn about the pathology report, because this report was needed to determine whether the cancer had spread to her lymph nodes or to another organ in her body. After a quick physical examination, Dr. Williams told Katherine that she could plan on going home on Wednesday. She walked a little in the halls and took a few naps. By Wednesday morning, she felt better. The certified nurse's aide recorded her vital signs in the morning and again around noon. Dr. Williams stopped by after lunch and wrote her discharge orders. The staff nurse RN reviewed Katherine's discharge orders, including the need to rest for the next few days, to eat several small meals each day for a few days, and avoid high-fiber foods to allow her colon to rest; she gave Katherine a prescription for pain medication. Michael arrived and Katherine was taken by wheelchair to valet parking, where their car was waiting. Because Katherine had pain medication left over from the colonoscopy, they did not fill this prescription for additional pain medication.

Allied Health Positions*

*Mid-level for Health Navigation Professional depending on job description and duties

Education	Some of these professionals may have 6 months to 2 years of training after high school, while others required a 4-year bachelor's and master's degrees. Allied health careers include emergency medical technicians (EMTs), paramedics, sonographers, radiology technician, health educators, dietitians, medical librarians, and dental hygienists.
Work	Because the field of allied health is so diverse, the careers are also diverse. However, most individuals in allied health work closely with patients and other health care providers. For example, a radiology technician works closely with physicians to provide accurate imaging for diagnosis, including X-rays, magnetic resonance imaging (MRI), and computed tomography (CT). EMTs and paramedics transport patients and perform emergency procedures as allowed by state laws. Dietitians and health educators work directly with patients with or without referrals from health care providers. Most allied health workers are employed by a hospital or closely linked community health care service, such as clinics.
Work Alternative	Some allied health professionals work as private consultants, such as dietitians and health educators. Others are employed in schools, universities, large corporations, and manufacturing industries.
Salary	Salary range is varied due to the number of professions linked to the classification of allied health.
Hours	40 hours per week; some evenings and weekends
Professional Organizations	Each allied health classification has a unique professional organization to serve the needs of their members.

Health Navigation Professional

Education	<p>Associate's degree programs that include basic science, medical terminology, and additional general education coursework.</p> <p>Preferred skills and experience: Experience with community programs and services; strong analytical skills, ability to work independently with little supervision, and ability to handle concurrent projects; strong interpersonal skills, including professional telephone skills, and ability to work with medical and support staff in a professional manner; must type at least 45 w.p.m. and possess computer skills, with experience in Microsoft applications; must have experience in drafting letters, memos, and spreadsheet applications and have the ability and skills to format, distribute, and maintain health communications and reports; knowledge of office administration and ability to create and maintain organized systems; experience in working with culturally diverse populations and knowledge of medical systems and community resources desirable.</p>
Work Duties	<p>A health navigator is a health professional who focuses on the patient's needs, including guiding patients through the health care system and working to overcome obstacles that are in the way of patients receiving required care and treatment. Some of the responsibilities of the health navigation professional include organizing schedules and managing appointments for patients to ensure they receive services in a timely manner; facilitating communication among the patient, family members, and health care providers to ensure patient satisfaction and quality of care; managing health care records, informing the patient on financial aspects of care, and linking the patient to financial resources as needed; accommodating interpretive language services when needed, managing follow-up visits, and ensuring continuation of care and linkage to community resources. In addition, the health navigation professional is involved with outside entities. Patients may have needs to arrange legal counsel, home health care, transportation, or specialty care outside the hospital setting. Health navigation professionals collaborate with diverse organizations and personnel to ensure the needs of the patient are met, are involved in patient education about their care, and foster patient understanding of treatment options.</p>
Alternative Work	<p>Health navigation professionals work in a variety of health care settings, but hospitals are the most common place of employment. Health navigation professionals may specialize in a certain area such as oncology or diabetic care. Patient navigators may work with patients of all ages, from infants to geriatric populations. The patient navigator also works closely with the health care providers and health care institution.</p>
Salary	<p>\$44,000 average salary; depends on location, industry, experience, and benefits (www.simplyhired.com/salaries-k-health-care-navigator-jobs.html). The employment outlook for health navigation professionals is good because the Affordable Care Act (www.hhs.gov/healthcare/rights/law/index.html) created a need to ensure patient satisfaction and quality health care at an affordable cost.³</p>
Hours	<p>40 hour workweek; work is full-time or part-time; hours are 8- or 12-hour shifts; usually involves daytime work with some night and weekend shifts.</p>

CASE STUDY: PART FOUR

On Friday, Katherine called the oncology office to receive any news regarding the pathology report. She was told that Dr. Williams was not in the office, and she would have to wait until Monday. After a frustrating weekend of waiting for the pathology report, she called the office again on Monday. This time she was told by the office staff that they had not yet received

the pathology report. Katherine decided that because she had a follow-up appointment on Wednesday, she would wait and talk to the surgeon, Dr. Williams.

Michael drove Katherine to the appointment so he could be there when she heard the pathology report. As Katherine was expecting, the pathology report stated that the colon cancer had spread to two of her lymph nodes near her groin. Her colon cancer was ranked Stage III.

Cancer is staged as Stage I (localized to one part of the body and can be surgically removed), Stage II (locally advanced and treatment is required), Stage III (locally advanced, depends on the type of cancer and whether positive lymph nodes are above or below the diaphragm), and Stage IV (cancer spread or metastasized to other organs or throughout the body).⁵ Dr. Williams referred Katherine to Dr. Clark, an oncologist, for cancer treatment. Once again, she called to make an appointment and was told that the first available appointment was in 3 weeks. The office staff person told her that the appointment delay was fine, because the oncologist would not start any cancer treatment until about 6 weeks after surgery, so the patient has adequate time to heal.

The day of her appointment finally arrived, and Katherine and Michael went to Dr. Clark's office to discuss her treatment options. However, Dr. Clark did not offer many options. He told her that she needed chemotherapy because radiation would not be appropriate for her Stage III pathology report. She asked a few questions and signed some informed-consent forms. Before leaving the office, Regina, the office nurse, met with Katherine and Michael to go over some additional details. Regina explained that on the following Monday, Katherine was scheduled for an outpatient procedure at the hospital. A physician specializing in intervention radiology would place a plastic port with access to her vein on the upper-left side of Katherine's chest. The port would allow her to receive chemotherapy medication without having to start an intravenous line in her arm every other week. The port would be located under the skin to decrease the chance of infection. The nurse would be able to palpate (feel) the end of the port when placing a needle through the skin and into the port. Regina also explained that Katherine would be coming into the oncologist's office every other Monday for 6 months for a total of 12 rounds of chemotherapy. Katherine was scheduled for what the nurse called "slow chemotherapy infusions," and she went on to explain the schedule. On the first Monday, Katherine would come to the office and receive 1 liter of glucose fluid through her port access. This liter



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of fluid would ensure that Katherine was well hydrated prior to receiving the chemotherapy medication. The nurse would disconnect the tubing from the liter of fluid and connect the tubing to the chemotherapy medication.

This technique will save Katherine from getting a needle inserted into her port access twice. The chemotherapy tubing is then connected to a small pump device (about the size of a deck of cards) that contains the chemotherapy medication. The pump delivers small doses of medication every few minutes for the next 48 hours. Katherine will return to the oncology office on Wednesday afternoon to be disconnected from the empty chemotherapy pump. On alternate Mondays, Katherine has a standing appointment for blood work to be drawn. This appointment will be fast and easy, because blood will be drawn from her port and thus does not involve any needle sticks in her arm. On the following Monday, if Katherine's lab results are within normal range, the chemotherapy pump will be reconnected, and the process will be repeated for 6 months. Before the patient education session concluded, Regina asked Katherine and Michael if they had any additional questions and talked a little about the side effects of chemotherapy. She explained that each individual reacts differently to the chemotherapy medications. Finally, Regina introduced them to Terri,

the health navigation professional employed by Dr. Clark. Regina explained that Terri coordinates all aspects of patient care in the office. After Regina left, Terri went on to explain her role in the office. She told them that the phone number on her business card is her direct line. They will no longer have to navigate the phone tree when calling the main office number. Terri said that she is the first point of contact for all patients receiving chemotherapy at Dr. Clark's office. If she does not know the answer to Katherine's or Michael's questions, she will locate someone who has the correct answer. They can call her during regular business hours, but she might have to call them back after hours when she finds the answers to their

questions. She calls herself "the stress buster" of the office. She wants every patient on chemotherapy to know that they do not have to go through the treatment with stress from unanswered questions. She can also arrange resources, such as health insurance options (e.g., in-network and out-of-network fees, co-payments), support groups, home health equipment rentals, meal delivery services, and safe and effective home remedies for the usual side effects of chemotherapy. Terri asked Katherine and Michael if they had any immediate questions; then, she handed them several of her business cards and reminded them to call her any time that they have a question.

Mental Health Services*

*Entry level for Health Navigation Professional with additional training

Education	Educational programs in mental health services lead to all levels of credentials. There are entry-level jobs that require a high school diploma and vocational certificates up to graduate and doctorate degrees. For example, mental health services technicians and psychiatric aides assist individuals with mental and/or behavioral disabilities. This position requires a high school diploma, and in some states additional training and licensure are needed. At the bachelor's level, mental health and substance abuse social workers complete training in the field and meet certification requirements. At the master's degree level, social workers have a bachelor's and master's degree in social work and complete an internship to become a license clinical social worker. Also at the master's level are counseling psychologists and mental health and substance abuse social workers serving specific populations, such as the elderly or adolescents. At the doctoral level, clinical psychologists serve as licensed practitioners in clinical settings or in private practice.
Work Duties	Mental health services professionals help individuals with psychological disorders to live functional lives by teaching them daily living skills and assisting them with social, recreational, educational, and occupational activities. Specific duties include assessing and diagnosing illnesses and developing and maintaining treatment plans. Mental health services occupations include mental health and substance abuse social workers, counseling psychologists, and psychiatric aides, who are also known as psychiatric assistants or technicians. Many graduates of mental health services programs work in hospitals or residential and rehabilitation facilities.
Work Alternative	Occupations that provide mental health services help individuals with mental or behavioral disabilities or illness to live a functional life. A wide variety of degree programs and career choices exist in this field, including clinical pastoral counseling, community health services, genetic counseling, marriage and family counseling, medical social work, mental health counseling, mental health services technician, psychotherapist, psychoanalysis, and substance abuse counseling.
Salary	As of 2013, the median salary for mental health workers was \$44,420. The level of educational attainment determines increased salary.
Hours	The hours are usually 8-hour, 10-hour, or 12-hour shifts. Because many healthcare facilities are open 24 hours/7 days per week, mental health workers work all shifts and all days of the week.
Professional Organizations	Professional organizations vary by specialization.

Registered Nurse and Advanced Registered Nurse Practitioner

Education	A 4-year bachelor's degree program is the most common educational path for a registered nurse (BSN). Some community colleges offer 2-year associate degrees in nursing (AND). The 2-year associate degree limits where the graduates work, but they can enroll in a bridge program to obtain their 4-year BSN degree. A graduate degree is required for licensure as an Advanced Registered Nurse Practitioner (ARNP).
Work Duties	Most nurses work in hospitals, including specialty areas such as surgical areas, intensive care, burn unit, labor and delivery; and ambulatory care centers, outpatient clinics, and private physician offices. ARNPs may work independently depending on the state licensure requirements, while others work in collaboration with physicians.
Work Alternative	Nurses also work at universities and schools, employee wellness clinics, corporate settings, and worker's compensation clinics in manufacturing and industry.
Salary	In 2013, the average annual salary for BSN registered nurses was \$68,910 and for an ARNP was \$92,670.
Hours	The hours are usually 8-hour, 10-hour, or 12-hour shifts. Because many healthcare facilities are open 24 hours/7 days per week, nurses work all shifts and all days of the week.
Professional Organizations	American Nursing Association (www.nursingworld.org); National League of Nursing (www.nln.org)

Body Movement and Therapies

1. Physical Therapy, Occupational Therapy, and Speech, Hearing, and Language Therapy

Education	Most fields of physical, occupational, or speech therapy require a graduate degree. However, physical therapy offers an associate degree for a physical therapy assistant that allows an individual to work in the field while continuing his or her education.
Work Duties	Most therapists work in hospitals and work directly with patients. Outpatient clinics, home healthcare agencies, and private practices employ therapists with graduate degrees in their field of expertise.
Work Alternative	Therapists also work within school districts, universities, employee wellness clinics, corporate settings, worker's compensation clinics, long-term care facilities, geriatric facilities, and wound-care clinics.
Salary	In 2012, the median annual physical therapy assistant salary was about \$53,000. The average salary for a physical therapist was \$64,958 per year. ⁶ The average salary for a speech therapist was \$53,498 per year ⁷ and for an occupational therapist was \$75,400. ⁷
Hours	The hours are usually 8-hour, 10-hour, or 12-hour shifts. Because many healthcare facilities are open 24 hours/7 days per week, therapists work day/evening shifts and 7 days a week.
Professional Organizations	American Physical Therapy Association (www.apta.org); American Speech, Hearing, and Language Association (www.asha.org/default.htm); American Occupational Therapy Association (www.aota.org)

2. Kinesiology and Exercise Science Professionals

Education	Exercise science and kinesiology are closely related fields and are used interchangeably with one another. Required education ranges from associate's to doctoral degrees. Kinesiology and exercise science professionals study the basics of mechanics and anatomy related to the movement of the body.
Work Duties	Most individuals in this field focus on injury prevention, nutrition, sports psychology, athletic training or motor skills in schools, universities, sports facilities, and fitness centers. Graduate-level degrees offer professionals the ability to conduct research and develop policies related to injury prevention.
Work Alternative	Other types of employment include personal trainers and involvement with all ages of sporting activities, ranging from little league to the Olympics.
Salary	In 2013, the median annual income was \$43,180 for a professional in kinesiology and exercise science.
Hours	40 hours per week; some evenings and weekends.

Professional Organizations	Association for the Advancement of Applied Sport Psychology (AAASP) (www.appliedsportpsych.org); American Kinesiology Association (www.americankinesiology.org); National Collegiate Athletic Association (www.ncaa.org); National Academy of Sports Medicine (www.nasm.org); United States Olympic Committee (https://teamusa.org .)
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3. Massage Therapy

Education	Many states require formal training and licensure to work as a massage therapist.
Work Duties	Massage therapists manipulate the soft-tissue muscles throughout the body to reduce stress, improve circulation, treat injuries, and promote general health in a patient. Most massage therapists work part-time are self-employed, and work by appointment. Some massage therapists work for franchised locations that offer various types of massages and facial services.
Work Alternative	Some massage therapists are employed full-time and work in settings such as sports and fitness centers, hospitals, and nursing homes.
Salary	Massage therapists earn a median annual salary of \$40,400; however, the massage therapists that are employed in healthcare facilities earn up to an annual salary of \$55,700.
Hours	Because the work of a massage therapist is physically demanding, most massage therapists do not work more than 40 hours per week.
Professional Organizations	National Certification Examination for Therapeutic Massage and Bodywork (NCETMB) or the Bodywork Licensing Examination (MBLEx) offer certification for massage therapists. State licensing boards decide which certifications and examinations to accept.

Physician's Assistant (PA)

Education	Physician assistant (PA) programs are available at the associate's, bachelor's, and master's degree levels, but a master's degree program is the most common path for mandatory physician assistant licensure.
Work	Most PAs work in hospitals, outpatient clinics, or in group or private physician offices. States grant the PA license and regulate their scope of practice, which varies across states.
Work Alternative	PAs work within school districts, universities, and employee wellness clinics.
Salary	In 2012, the median salary for a physician assistant was \$90,930. ⁸
Hours	The hours are usually 8-hour, 10-hour, or 12-hour shifts. Because many healthcare facilities are open 24 hours/7 days per week, PAs work all shifts and any day of the week depending on their place of employment.
Professional Organizations	American Academy of Physician's Assistants (www.aapa.org .)

Pharmacist

Education	Becoming a pharmacist requires a 4-year bachelor's degree with a strong science background and admission into a college of pharmacy for another 4 years after the bachelor's degree. Upon graduation from pharmacy school, the individual is eligible to sit for the pharmacy license exam. After receiving a medical license, the individual may work as a pharmacist or select a pharmacy specialty for his or her residency. Depending on the area of specialty, the residency ranges from 2 to 5 years. Beyond residency training, physicians complete a 1- or 2-year fellowship to specialize further in their selected area of interest. For example, a radiologist wishes to further his or her training by specializing in oncology (cancer) radiology. Therefore, it is possible to have 12–15 years of education after completing high school.
Work	Physicians are generally employed in the healthcare system.
Work Alternative	Physicians also work in healthcare administration, law offices, political arenas, universities, and research institutions.

Salary	Salaries range from \$175,000 to more than \$1 million annually, depending on the specialty and geographic location.
Hours	The hours are usually 8-hour, 10-hour, or 12-hour shifts. Because many healthcare facilities are open 24 hours/7 days per week, nurses work all shifts and all days of the week.
Professional Organizations	The American Medical Association (ama-assn.org) is the primary medical organization, but there are national associations for all of the medical specialties.

Physician

Education	Becoming a physician is a long, intense educational process. The first step is a 4-year bachelor's degree with a strong science background. Admission into a college of medicine is extremely competitive and expensive. Medical school is 4 years after the bachelor's degree. Upon graduation from medical school, the individual is eligible to sit for the medical license exam. After receiving a medical license, individuals select a medical specialty for their residency. Depending on the area of specialty, the residency ranges from 3 years to 5 years. For example, family practice is a 3-year residency, while radiology is a 5-year residency. Beyond residency training, physicians complete a 1- or 2-year fellowship to specialize further in their selected area of interest. For example, a radiologist wishes to further his or her training by specializing in oncology (cancer) radiology. Therefore, it is possible to have 12–15 years of education after completing high school.
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Summary

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In summary, this chapter provided a detailed description of numerous types of healthcare personnel. The healthcare professions were divided into two major categories: no or limited patient contact and direct patient contact. For each health profession, the chapter

described the educational requirements, location of employment, and a description of the primary duties, annual salary, and professional organizations. The case study explained the interactions between the team members, the patient, and the family.

Student Activity

It is your turn to create the end of the story. Write a minimum of 1000 words describing the final chapter of Katherine's cancer chemotherapy. Using the established healthcare personnel, describe their continued role in caring for Katherine and supporting Michael.

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