

Health Science Career Pathways

THERE ARE MORE THAN 200 careers in the health science field. Presenting information on every one of them in one course would be impossible. It is often easier to study a large number of things by organizing them in some way. Therefore, we will identify five health science career pathways (also known as health career clusters or health service areas), which provide a framework for studying a multitude of careers in health care.



Objectives:



1. Identify and describe the five health science career pathways.
2. Distinguish between the five health science career pathways by identifying some of the primary employee duties and responsibilities in each pathway or health service area.
3. Match several specific health care careers to the correlating pathways while understanding that some health care careers correlate to multiple pathways.
4. Utilize knowledge of health science career pathways to facilitate additional career exploration.

Key Terms:



bioinformatics
biotechnology
Biotechnology Research & Development
Diagnostic Services
Health Informatics
Support Services
Therapeutic Services

Understanding Health Science Career Pathways

The five health science career pathways allow for the grouping of similar health care careers because workers in those jobs share common duties and responsibilities. The career pathways provide a framework (structure, outline, or means of organizing) for studying a multitude of careers in health care. The framework can be useful in determining a career match.

Health science career pathways are also referred to as health care career clusters or health service areas. The five health science career pathways are:

1. Biotechnology Research & Development
2. Diagnostic Services
3. Health Informatics
4. Support Services
5. Therapeutic Services

DESCRIPTION OF THE FIVE PATHWAYS

Biotechnology Research & Development

The **Biotechnology Research & Development** pathway consists of careers that focus on highly scientific research and the application of that research to life, health, and human problems. Careers in this area focus on research, experimentation, and the development and evaluation of new equipment, medicine, organisms, models, and treatments.



FURTHER EXPLORATION...

ONLINE CONNECTION: Career Exploration

Before you invest your time and energy in a career, it is best to know as much about the career as possible. To do this, you may interview some people in the career field of interest or job shadow people. Yet you may also benefit from using some Web sites for additional information.

Visit the following links:

<http://www.nchste.org/career-cluster/>

<http://www.nchste.org/>

<http://www.bls.gov/oco>

Biotechnology is the application of science and technology to living organisms (and to parts, products, or models of living organisms) to alter living or nonliving materials for the production of knowledge, goods, and services (adapted from an OECD definition at <http://www.oecd.org>). **Bioinformatics** is the use of computer technology to analyze biological information. The study of the human genome is accomplished through the use of bioinformatics.

Diagnostic Services

The Diagnostic Services pathway focuses on creating a picture of a patient's health status, usually at a single point in time or over a short interval. **Diagnostic services** generally concentrate on establishing a diagnosis for illness and disease.

Health Informatics

Careers in the **Health Informatics** pathway focus on documenting and processing patient (or other health care) information. Careers in this pathway often support other medical services.

Support Services

The **Support Services** pathway consists of careers in which the focus is providing a supportive environment in which to deliver health care. Health care workers in this service area frequently do not provide direct patient care as part of their jobs. Instead, they support and maintain environments, facilities, and equipment.

Therapeutic Services

Careers in the **Therapeutic Services** pathway are concerned with providing care over time and with changing a patient's health status over time. Health care workers in this pathway interact directly with patients and their health care environment. They may utilize a variety of medical instruments and equipment in their work with patients.

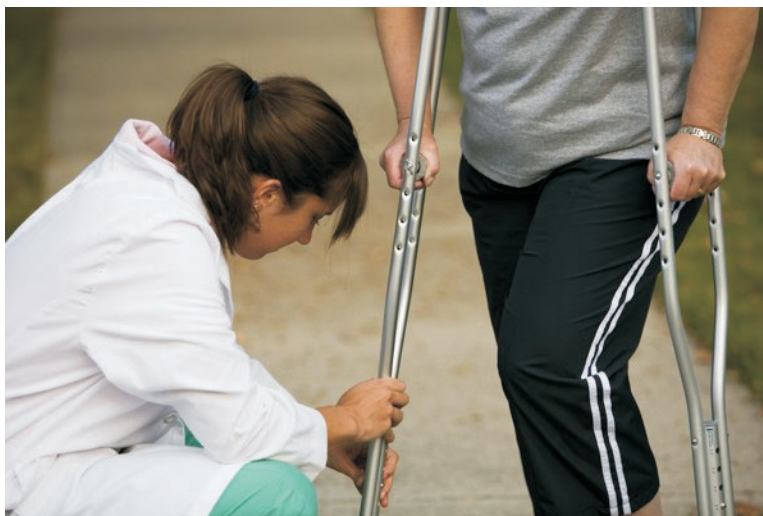


FIGURE 1. Physical therapists utilize a variety of medical equipment in their work with patients.

Duties and Responsibilities

One of the best ways to distinguish between the five pathways is to carefully examine the different duties and responsibilities.

BIOTECHNOLOGY RESEARCH & DEVELOPMENT PATHWAY

1. You will use complex chemical, mathematical, and statistical formulas to analyze data.
2. You will perform and evaluate scientific experiments in areas of biology, microbiology, chemistry, biochemistry, genetics, and bioinformatics.
3. You will develop and evaluate complex medical models, equipment, and instruments.

DIAGNOSTIC SERVICES PATHWAY

1. You will plan, prepare, perform, evaluate, and report the results of different medical procedures.
2. You will assess and evaluate patient status.

HEALTH INFORMATICS PATHWAY

1. You will collect, document, analyze, study, code, categorize, organize, and process patient and health information.
2. You will enter, retrieve, extract, maintain, and transfer information via computer systems and other electronic equipment.
3. You will understand the routes and flow of information in a health care facility.

SUPPORT SERVICES PATHWAY

1. You will purchase, supply, repair, and maintain general and medical equipment.
2. You will provide food items or other products for use by patients and health care personnel.
3. You will clean and maintain the health care facility.
4. You will transport patients and/or materials.
5. You will provide materials and services to maintain patient and employee safety.

THERAPEUTIC SERVICES PATHWAY

1. You will assess and monitor patient status and develop treatment plans.
2. You will perform procedures and treatments as well as evaluate their effects.
3. You will communicate with a team of other health service workers to provide care over time.
4. You will provide rehabilitative care.

Careers in the Health Science Career Pathways

It is now easier to match several specific health care careers to the correlating pathways while understanding that some health care careers correlate to multiple pathways. For additional information, you can refer to the Career Cluster Occupations flowchart on the National Consortium on Health Science and Technology Education's Web site at <<http://www.nchste.org/career-cluster/>> and <<http://www.nchste.org/cms/wpcontent/uploads/2007/07/framework07.pdf>>.



FIGURE 2. Cleaning falls into the Support Services pathway.

BIOTECHNOLOGY RESEARCH & DEVELOPMENT PATHWAY

1. Biochemist, research scientist, or toxicologist
2. Geneticist, biostatistician, or biomedical chemist

DIAGNOSTIC SERVICES PATHWAY

1. Physician, MRI technician, or radiologist
2. Nuclear medical technician or lab technician

HEALTH INFORMATICS PATHWAY

1. Medical assistant, unit clerk, or medical secretary
2. Epidemiologist, medical coder/biller, or health educator

SUPPORT SERVICES PATHWAY

1. Food service, housekeeping, or maintenance
2. Central supply or materials management

THERAPEUTIC SERVICES PATHWAY

1. Nurse, physical therapist, or nursing assistant
2. Pharmacist, pharmacy technician, or social worker

Choosing a Career Interest Area

There are more than 200 careers in the medical and health care fields. Each can be correlated to one of the five health science career pathways, which can be used to help you with career decision making by matching your interests and skills with a career pathway.

Review the career pathways and corresponding duties and responsibilities. Then determine which pathway you have the greatest interest in and which pathway best matches your skills and abilities. The best way to determine if a career is right for you is to complete careful research. So select a career, match it to a pathway, and then research that career in detail.

Summary:



There are more than 200 careers in the health science field. Five health science career pathways cover all of these careers. The five pathways share common duties and responsibilities for health care workers in those areas. The career pathways provide a framework for studying a multitude of careers in health care. The five health science career pathways are Biotechnology Research & Development, Diagnostic Services, Health Informatics, Support Services, and Therapeutic Services.

Checking Your Knowledge:



1. Which health care service area is primarily concerned with providing care over time and changing the patient's health status over time?
2. Which health care service area focuses on the documenting and processing of patient and health data?
3. In which health service area are careers highly scientific and involve experimentation with and production of new medical equipment, medicine, and machinery?

4. In which health service area do careers contribute to creating a picture of the patient's health at a particular point in time?
5. Health care workers in which service area contribute to the safe environment in which health care is provided?

Expanding Your Knowledge:



Visit your school Career Resource Center and share your career research. Investigate if there are any internships or job shadowing opportunities available in the career interest area of your choice. The school counselor may know of specific opportunities. If not, you may contact your local Chamber of Commerce.

Web Links:



National Sample Definitions

<http://www.careerclusters.org/definitions.php>

Career Planning

<http://www.workforceinfo.state.il.us/>

Employment Information

<http://www.acinet.org/acinet/>

Occupational Outlook Handbook

<http://www.bls.gov/oco>