

Nuclear Pharmacy

Holland Code: IRC

Background

Nuclear pharmacy was the first pharmacy specialty established by the Board of Pharmaceutical Specialties (BPS) in 1978. This specialty area is involved with the preparation of radioactive materials to improve and promote health through the safe and effective use of radioactive drugs to diagnose and treat specific disease states.

There are two main types of environments where nuclear pharmacists are employed. Institutional nuclear pharmacy is usually linked to a major medical center/hospital where preparations are made on-site. This is in contrast to the commercial centralized nuclear pharmacy where radiopharmaceuticals are prepared and then delivered to the hospital and/or clinic. While the quantity of radiopharmaceuticals used is relatively small in both settings, nuclear pharmacists must complete additional training in radiation safety regarding the compounding, preparation, and delivery of radioactive materials. Because nuclear pharmacy is a unique field, this profile offers a non-inclusive list of responsibilities encountered by pharmacists in this career:

- Ordering, receiving, storing, and controlling inventory of radioactive drugs (radiopharmaceuticals), other drugs used in nuclear medicine, and related supplies.
- Preparing radiopharmaceuticals by combining radioisotopes with reagent kits and compounding radiopharmaceuticals that are not commercially available.
- Performing functional checks of instruments, equipment, and devices and determining radiopharmaceutical quality and purity.
- Filling prescription orders.
- Packaging, labeling, and transporting radiopharmaceuticals.
- Properly handling hazardous chemicals and biological specimens.
- Communicating radiopharmaceutical-related information to others.
- Ensuring that patients receive proper preparation before radiopharmaceutical administration and trouble-shooting unanticipated outcomes.
- Laboratory testing of new radiopharmaceuticals, new compounding procedures and quality control methods and participating in clinical trials.

As one can see in the above list, nuclear pharmacists have diverse responsibilities. According to survey results, 37% of their time is spent on medication preparation/compounding. Sixteen percent is spent on medication dispensing (including associated patient counseling), followed by 11% on service (such as committee work for the institution), and the remainder split across a variety of other functions.

Characteristics

Thirty-two pharmacists responded to the 2012 *APhA Career Pathway Evaluation Program* survey. Among the respondents, 75% had earned a PharmD degree. Fifteen percent had earned an advanced degree (MS) and 35% indicated earning some other degree (other than MA, MS, MBA, or PhD). Forty-five percent achieved BPS Certification, 66% had earned a certificate and 14% had taken other training. The mean age of respondents was 41 years old. Seventy-five percent were male. Just over half (55%) identified themselves as being in management. None of the respondents to this survey earned less than \$100,000. Fifty percent earned \$100,000 - \$120,000, 20% earned \$120,000 - \$140,000 and 30% earned greater than \$140,000. Twenty-one percent of these pharmacists reported that they earn between \$80,000–\$100,000 per year. Nuclear pharmacists work an average of 46 hours per week.

Fifty-five percent reported that they are “extremely satisfied” with their job and 42% indicating they are “somewhat satisfied” with their work. Similarly, 32% report being “extremely challenged” with their work and 58% reported “somewhat challenged.”

Insider’s Perspective

What aspects of the job are most appealing?

Most respondents said that they really enjoyed their work environment. Specifically, “it’s dynamic and changing, so it’s not boring, “its hands on work, you’re not behind a desk all day long,” and “work[ing] directly with hospital staff to determine what each patient needs.” Several respondents enjoyed that their job did not include insurance or billing issues. “We are not open to the public and do not have any involvement with patient insurance.” Another respondent said that nuclear pharmacy “combines the science with the art. [There is] not much patient contact but [the job] still requires [a] broad clinical background.”

What aspects of the job are least appealing?

Many pharmacists shared that they didn’t enjoy the hours that are typical of nuclear pharmacy practice. “Due to the time sensitive nature of radiopharmaceuticals, the hours worked are frequently during the night.” In some instances, pharmacists also have to be on call, which was mentioned as a negative. Others mentioned that they miss patient and colleague interaction as nuclear pharmacists rarely see patients and there is typically a small staff in the pharmacy.

What advice should students and practitioners consider when selecting the option of working in nuclear pharmacy?

The majority of respondents recommended that when considering nuclear pharmacy, make sure that the hours will work for you. Be ready to work early hours, be on call, and to work the midnight shift. One pharmacist said that, despite the challenging schedule, “nuclear is the best kept secret in pharmacy.”

Adapted from the American Pharmacists Association