

# Genetics and Genomics

## An oncology nurse's journey in practice

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**BACKGROUND:** Cancer genetics and genomics are now an integral component of oncology care. Genetics and genomics guide recommendations not only for cancer prevention and early detection, but also for cancer treatment.

**OBJECTIVES:** This article documents the personal experiences of an oncology nurse who has worked in cancer prevention and early detection since the 1990s and describes the many changes that have occurred in cancer-related genetic and genomic care during that time.

**METHODS:** This is a personal account of genetic practice in the past 30 years.

**FINDINGS:** Nurses can no longer ignore cancer genetics and genomics in oncology care. Some aspects of care have changed dramatically, including the number of genetic tests and potential uses for genomic information; however, some remain the same, particularly the human component of care. Patients and families need comprehensive education and support to understand the role that genetics and genomics play in cancer care. Oncology nurses are well suited to provide this care.

### KEYWORDS

genetics; genomics; cancer prevention; early detection

### DIGITAL OBJECT IDENTIFIER

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**IN HIS 1980 COMMENCEMENT SPEECH** at Connecticut College, actor Alan Alda encouraged graduating students to do the following: “Begin challenging your own assumptions. Your assumptions are your windows on the world. Scrub them off every once in a while, or the light won’t come in” (para. 18). If I had not challenged my assumptions about what encompasses oncology care, I would have missed a most amazing professional journey. In 1988, I accepted a position to direct a cancer screening program that included risk assessment and management of individuals with suspected hereditary risk for developing cancer. I had held positions on busy academic medical oncology, gynecologic oncology, and bone marrow transplantation inpatient units, but this opportunity turned out to be a completely unexpected and life-changing professional experience for me.

Shortly after I began my new role, a respected oncology nurse and colleague approached me at an Oncology Nursing Society (ONS) chapter meeting and told me she was so sorry I had given up oncology nursing practice. I was surprised, discouraged, and saddened by her comment. I was settling into my new role. I had traveled to take additional classes in other states and engaged in mentorship with a well-known genetics expert to develop the skills and knowledge base I was going to need for my new position. After only a few months, I was awed, amazed, and more clinically challenged than I had ever been in my career. Almost 30 years later, I realize that, at the time, I could not have imagined or predicted how genetics (the study of hereditary and single genes) and genomics (the study of the entire organism’s genes) would revolutionize oncology care and how privileged I would be to have one of the best possible oncology nursing positions to observe and be a part of the implementation of this exciting science, which is transforming oncology care.

The age of genomic and precision medicine has arrived. In the less than three decades since the Human Genome Project was initiated, the impact and magnitude of the information gleaned from this project continues to expand exponentially and directly affects oncology practice (see Table 1). This era in health care presents many exciting and unforeseen challenges and opportunities because genetics and genomics intersect with all aspects of oncology care.

### The Early Years

When I first began working in this area, genetic assessment was confined to collecting family histories and drawing pedigrees on large pieces of paper