Little is known regarding the feasibility and efficacy of an online continuing education program for oncology nurses. The Multiple Myeloma Mentorship Program, a quality improvement project for the Institute for Medical Education and Research, was designed to meet the educational needs of oncology nurses caring for patients with multiple myeloma. Twenty-five expert nurses with expertise in multiple myeloma from 23 cancer centers in the United States partnered with 50 oncology nurses in an electronic format from July 2009 to January 2010. The purpose of the program was to educate oncology nurses about the latest treatments and strategies for optimal side-effect management for patients with multiple myeloma. Nurse mentees selected their preferred form of learning—webcast, in-person speaker, or monograph. Two live webcasts allowed for didactic discussion between mentors and mentees. During and after the program, mentors conducted informal, unscripted interviews with nurse participants to determine preferred learning format, challenges, and implications for practice. Twelve nurses preferred Web-based learning to in-person presentations, citing flexibility and convenience as reasons for that choice. Time constraints with Web-based and in-person learning were a barrier to nurse mentees completing assigned modules. Several nurses implemented practice changes as a result of the program. Nurses who participated in the mentorship program were satisfied with the content. Learning styles and format should be considered in future mentorship programs.