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# Safety Considerations and Safe Handling of Oral Chemotherapy Agents

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**M**rs. S is a 76-year-old woman with metastatic breast cancer. Her oncologist has prescribed the oral chemotherapy agent capecitabine (Xeloda®, Roche Pharmaceuticals, Nutley, NJ) at a 1,650-mg dose every 12 hours. Mrs. S will take the drug for 14 days, followed by 7 days of not taking the drug. She then will repeat this process as a treatment cycle. Mrs. S lives in an assisted-living center that is staffed with one nurse during the day and evening, but no licensed healthcare workers are on the premises overnight. However, a nurse is on call to assist the healthcare aide in emergencies. The staff does not have any previous experience with chemotherapy. Unit-dose dispensing is not available locally, and medications are supplied by a local pharmacy in multidose containers. Residents at the assisted-living center can choose to manage their medications alone or with a nurse.

How should Mrs. S's care be coordinated? Who should administer the oral chemotherapy to Mrs. S? What processes need to be in place to ensure that the capecitabine is administered correctly and safely?

## Safety Issues

Chemotherapy administration practices are established on two characteristics that differentiate chemotherapy agents from other medications. Chemotherapy agents typically have low therapeutic indexes,

As a class of drugs, chemotherapy agents have two unique features. They have low therapeutic indexes, which places patients at an increased risk for medication errors, and they are considered hazardous drugs, which places patients and nurses at risk for environmental exposure. Policies and procedures for handling and administering oral chemotherapy agents are essential to promoting patients' and nurses' safety. Risk-reduction measures for administering oral chemotherapy in nontraditional healthcare settings, such as the home, require instituting a two-person dose-verification system, educating everyone who will administer and handle these agents, and developing procedures for securely and appropriately storing oral chemotherapy agents. Currently, no standardized guidelines exist for handling oral chemotherapy agents, and institutions must develop their own policies and procedures. This article discusses oral chemotherapy safety considerations, including safe handling of these agents, and offers recommendations for practice.

**Key Words:** antineoplastic agents, hazardous substances, safety

which places patients at increased risk for harmful effects resulting from medication errors, and they typically fall into the occupational classification of hazardous drugs, which also places others at risk for harmful effects from environmental exposure. Chemotherapy administration usually is governed by a number of guidelines and practices designed to protect and promote the safety of patients and the people around them. Consequently, these guidelines and practices are more complex than standard medication administration procedures.

Chemotherapy often is thought of as a parenteral treatment that is administered in the traditional settings of hospitals, infusion clinics, or physicians' offices. However, oral chemotherapy agents can be administered easily in many nontraditional settings, including patients' homes, nursing homes, or extended-care facilities. In most nontraditional settings, experienced oncology nursing staff are not available to administer medications, monitor patients, and manage patients' symptoms. Thus, oral chemotherapy drugs can be self-administered and monitored by patients or with the help of family members, friends, medication technicians, or nurses without oncology experience. Also, the possibility exists that one or two people will not be able to consistently administer oral chemotherapy because of work schedules or other commitments. Consequently, chemotherapy administration may need to be coordinated

among several individuals. The wide variety of settings and personnel involved makes adhering consistently to principles of safe chemotherapy administration and handling guidelines potentially difficult.

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