NURSING RESPONSIBILITIES TOWARDS A PATIENT SCHEDULED TO RECEIVE NEOADJUVANT TREATMENT FOR THE MANAGEMENT OF CANCER

Oncology nurses practice in a variety of settings including acute care hospitals, ambulatory care clinics, private oncologists' offices, radiation therapy facilities, home healthcare agencies, and community agencies. They practice in association with a number of oncologic disciplines, including surgical oncology, radiation oncology, gynecologic oncology, pediatric oncology, and medical oncology. The roles of the oncology nurses vary from the intensive care focus of bone marrow transplantation to the community focus of cancer screening, detection, and prevention. Oncology nurses serve in numerous leadership positions, such as chief executive officers, directors of cancer service lines, and directors of admission services, at hospitals and clinics. The following discussion on the role of the oncology nurse focuses on patient assessment, patient education, coordination of care, direct patient care, symptom management, and supportive care. To illustrate how varied the role may be and its importance across the continuum of cancer care, examples related to the role of the oncology nurse in direct patient care, symptom management, and supportive care are provided.

**Patient Assessment**

Nurses are expected to be expert in assessing a patient's physical and emotional status, past health history, health practices, and both the patient's and the family's knowledge of the disease and its treatment. The oncology nurse reviews the treatment plan with the oncologist, is aware of expected outcomes and possible complications, and independently assesses the patient's general physical and emotional status. It is essential that a detailed nursing history and physical examination be completed. An oncology nurse is expected to be aware of the results and general implications of all relevant laboratory, pathology, and imaging studies. Assessment of the patient's understanding of the disease and proposed treatment is fundamental in allaying anxiety and formulating a care plan. Obtaining this information will help avoid misunderstanding and confused expectations. Thorough patient preparation improves compliance with treatment programs and may impact treatment outcomes as well. A nursing care plan is developed in response to the particular needs identified from the assessment.At a minimum, this plan promotes (1) the patient's understanding of therapy goals, treatment schedules, and possible side effects of therapy; (2) physical and psychological preparation for therapy; (3) physical and psychological comfort; and (4) compliance.

**Patient Education**

The nurse often has a better opportunity than any other member of the healthcare team to develop the required rapport for effective educational efforts with patients and their families. Patient and family education starts before therapy and continues during and after therapy. Continual reinforcement throughout the treatment course helps to ensure success. Appropriate written and visual teaching aids may be used, as well as referrals to other professionals or community programs, such as cancer support groups. Such education includes structured and unstructured experiences to assist patients with coping with their diagnosis, long-term adjustments, and symptoms; to gain information about prevention, diagnosis and care; and to develop skills, knowledge, and attitudes to maintain or regain health status. The patient and/or family should be able to (1) describe the state of the disease and therapy at a level consistent with the patient's educational and emotional status; (2) participate in the decision-making process pertaining to the plan of care and life activities; (3) identify appropriate community resources that provide information and services; (4) describe appropriate actions for highly predictable problems, oncologic emergencies, and major side effects of the disease and/or therapy; and (5) describe the schedule when ongoing therapy is predicted. Nurses should be able to understand the possible side effects of each antineoplastic agent and the self-care activities for reducing their severity. Describing the side effects or problems that patients might experience from the regimen as a whole is more effective than focusing on each separate drug. Patients often express more concern about the occurrence and management of side effects than the mechanism of action of particular agents. Printed, visual, and audiovisual educational materials are used in conjunction with discussion and continued reinforcement. With the increased development of the Internet, more and more cancer patients and family members are accessing the World Wide Web to gain information about cancer. Chat groups are serving as a source of information as well as support. This method of communication will continue to be an increasing source of knowledge for consumers. Patients should be encouraged to keep personal, written, daily diaries that record treatment dates, symptoms, test dates, and questions.

**Coordination of Care**

The oncology nurse plays a vital role in coordinating the multiple and complex technologies now commonly employed in cancer diagnosis and treatment. This coordination encompasses direct patient care; documentation in the medical record; participation in therapy; symptom management; organization of referrals to other healthcare providers; both patient and family education; as well as counseling throughout diagnosis, therapy, and follow up. The nurse should serve as the patient's first line of communication. Ideally, the patient and family should feel free to contact the oncology nurse by phone during the entire treatment program. Many patients travel long distances, so the importance of communication by telephone must be emphasized. It allows continuous patient communication, early recognition of emergencies, and regular emotional support. It is important for the nurse to gather sufficient information to determine patient management. Many institutions have developed guidelines for triaging phone calls and problems. These guidelines provide basic steps that are helpful in identifying patient problems over the phone before consulting with the physician and relaying specific instructions for follow-up care. Communication between personnel at different facilities may be suboptimal, and the communication and coordination that the oncology nurse can provide represents an invaluable service to patients who may be confused and frightened.

**Direct Patient Care**

The majority of ONS members provide direct patient care involving chemotherapy. National certification for chemotherapy currently does not exist. Each institution should have written policies for chemotherapy certification, administration of antineoplastic drugs (all routes), safe drug handling and disposal, management of untoward reactions, such as allergic reactions, and methods for documentation. The ONS currently offers a chemotherapy trainers course. These trainers may then offer chemotherapy training courses in the community to oncology nurses based on ONS guidelines and curriculum. An important responsibility of nurses involved in the delivery of chemotherapy is to ensure that the correct dose and drug are administered by the correct route to the right patient. Complex regimens of potentially lethal drugs are being employed in a variety of settings. A survey of ONS members to determine extent and type of medication errors noted that 63% of the respondents reported evidence of medication errors occurring in their patient care settings. These errors included errors in dosing, incorrect drugs administered to patients or drugs administered by an incorrect route, and errors in administration and preparation. Individual institutional guidelines should be developed to minimize the risk of chemotherapy errors. These guidelines should include a reporting system for errors and a systematic way to review current practice to provide changes to prevent repetition of errors.

**Symptom Management**

Oncology nurses are challenged on a daily basis to deal with the numerous symptoms patients with cancer and their families encounter as a result of their cancer or its treatment. Nurses triage patient problems and assist in the evaluation of symptoms and initiation of interventions. For example, subjective and objective data, including information about the last chemotherapy treatment and knowledge of the patient's history, guide the nurse in determining the patient's disposition and treatment. Much progress has been made in managing the side effects of chemotherapy, and nurses have contributed significantly to this success. For example, nausea and vomiting are two of the most common symptoms associated with chemotherapy. Control of these symptoms has been a nursing research priority. Multiple studies have helped to define nausea and vomiting and to develop tools to measure occurrence, distress, and individual experiences associated with these symptoms. This information assists in the treatment of nausea and vomiting and evaluation of the effectiveness of prescribed treatments. Oncology nurses have assisted in the development of guidelines for the use of antiemetics particularly the 5-hydroxytryptamine–receptor antagonists.These guidelines outline the optimal use and safe delivery of antiemetic drugs and have proved to be an effective means of cost containment. Fatigue is the most distressing side effect reported by patients and is a cancer-related symptom that nurses have played a major role in managing. Nurse researchers have contributed significantly to the definition, incidence, measurement, and management of fatigue

**Supportive Care**

Oncology nurses are closely involved with numerous supportive care issues encountered by cancer patients and their families. This chapter does not allow a detailed discussion of the numerous areas of supportive and palliative care, but two areas deserve special mention, that is, the involvement of nurses in pain management and in survivorship. Because nurses spend more time with patients experiencing pain than does any other health professional, it is of utmost importance that the nurse be knowledgeable about pain assessment and both pharmacologic and nonpharmacologic management of pain, in order to provide good pain control as well as patient and family education. However, as with other healthcare professions, barriers to providing effective pain control exist within nursing as well. The major problems are misconceptions and fears about addiction, drug tolerance, sedation, and respiratory depression; lack of knowledge about pain assessment and analgesics; and undertreatment with analgesics.This is understandable when one considers the minimal time that is devoted to pain control in traditional undergraduate nursing curricula. Fortunately, these problems are now being addressed, and the education programs and resources available have improved considerably. State cancer pain initiatives, guidelines, and organizational position statements have been excellent efforts toward improving pain management. Nursing care should be planned to promote patient comfort, provide patients and their families with information related to pain control, provide information about and assistance with behavioral and physical interventions, prevent and alleviate side effects of pharmacologic therapies, and promote patient compliance with therapy and required follow up. The nurse should explain the rationale for interventions and provide time for patient and family questions. Patient education should include the names of the pharmacologic agents, dosage schedules, side effects, interventions to alleviate nausea and vomiting, such as antiemetics, and interventions to alleviate constipation. The nurse should monitor the effectiveness and side effects of pharmacologic interventions, respiratory status, and bowel functioning, as well as mental and cognitive functioning. The patient and family must know how to contact medical personnel in case of an emergency and should feel free to do so.

Nursing responsibilities can be grouped as:

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| **Prior to Administration** |
| * Patient assessment, confirm allergies, and evaluate any preexisting symptoms.
* Verify signed consent for treatment was obtained and signed by provider and patient.
* Monitor laboratory values and verify laboratory values within acceptable range for dosing.
* Take measures to prevent medication errors:
	+ Perform independent double-check of original orders with a second chemotherapy-certified RN.
	+ Double check for accuracy of treatment regimen, chemotherapy agent, dose, calculations of body surface area, schedule, and route of administration.
* Recalculate chemotherapy doses independently for accuracy.
* Verify appropriate pre-medication and pre-hydration orders.
* Ensure patient education completed and address outstanding patient questions.
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| **Administration** |
| * Dual nurse verification and sign off *at the bedside*:
	+ Compare original order to dispensed drug label at the bedside with another chemotherapy-certified RN and verify patient identity.
* Safe handling of hazardous medications; reduce exposure to self and others.
* Intravenous line management: insertion, evaluation, and assessment.
	+ Check patency of IV site for brisk blood return immediately prior to connecting hazardous agent to the patient and as indicated during infusion.
	+ Continuous monitoring for infiltration, phlebitis, extravasation, or infection.
* Continuous patient monitoring for acute/adverse drug effects and allergic reactions.
* Prompt recognition and management of hypersensitivity reactions.
* Safe handling and management of chemotherapy spills.
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| **After Administration** |
| * Flush IV line, ensure brisk blood return prior to removing peripheral IV device, flush/maintain vascular access device according to institution policy.
* Safe handling and disposal of hazardous waste according to institution policy.
* Document in medical record the medications given, patient education, and patient response, including any adverse events.
* Ensure patient has appropriate discharge instructions, anti-nausea medications, and education, and emergency contact information of physician’s office in event of emergency.
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DIFFERENT SIDE EFFECTS AND NURSING RESPONSIBILITIES

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| **Side Effects by System** | **Patient Education - Evidenced-Based Interventions****The oncology nurse should educate the patient to…** |
| ***Generalized*****Fatigue, lack of energy** | * Fatigue during chemotherapy is different from everyday fatigue. Symptoms may include feeling worn out, drained, or an overall lack of energy that does not go away with rest or sleep.
* The patient should focus on sleep hygiene. Take short naps as needed, but do not nap for longer than one hour. Long naps make it harder to sleep at night.
* Cluster activities, and take frequent periods of rest.
* Consume a well-balanced diet with foods rich in protein, iron, and vitamins and stay adequately hydrated at all times.
* Engage in light exercise as tolerated throughout the week.
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| ***Hematopoietic*****Bone marrow suppression** | **Neutropenia**: * Abnormally low levels of white blood cells (neutrophils).
* Absolute neutrophil count (ANC) of 1,500/mm3 or less.
* High risk for infection when ANC < 500/mm3.
* The immune system is suppressed, increasing susceptibility to infection, which can rapidly progress to bloodstream infection.
* Fever is most the common sign of infection in neutropenic patient.
* Highest risk for infection is seven to ten days after the last chemotherapy treatment, which is the point where the white blood cells are at their lowest (chemotherapy nadir).
* The nurse should educate the patient to avoid sick contacts.
* The best way to prevent infection is routine hand hygiene.
* Wear a mask when out in the community.
* May require an injection to stimulate white blood cell production.

**Febrile neutropenia:** * Fever in the setting of neutropenia is a medical emergency that can lead to life-threatening sepsis. It requires prompt evaluation, work up, and initiation of empiric antibiotics.
* The nurse should encourage patients to immediately report symptoms of fever ≥ 100.4, cough, chest pain, shortness of breath, dysuria.
* Implement food preparation, cooking, and storage precautions:
	+ Wash fruits/vegetables well to remove germs/pesticides.
	+ Avoid eating raw or undercooked food as they may have bacteria that can cause infection.
	+ Refrigerate all leftover foods.

**Thrombocytopenia**: * Low platelet count (blood clotting factors), risk for bleeding.
* Risk of bleeding when platelet count < 50,000/mm3.
* High risk when platelet count < 20,000/mm3.
* Critical risk when platelet count < 10,000/mm3.
* May require platelet transfusion when count is < 20,000mm/m3
* Patients should monitor for signs of bleeding or easy bruising,
* Use a soft toothbrush, avoid flossing, no contact sports or activities that increase risk for injury, and blow nose gently.
* Any falls with head trauma must be evaluated by clinician due to risk for hemorrhage in the brain.
* Avoid blood thinners: aspirin, non-steroidal anti-inflammatory drugs (NSAIDs).
* Do not use any rectal suppositories and avoid dental work.

**Anemia**: * Low red blood cell count, may require red blood cell transfusion or injection of erythropoietin.
* Symptoms may include: fatigue, weakness, pallor, chest pain, shortness of breath, activity intolerance.
* Patients should consume an iron-rich diet, take iron supplementation
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| ***Integumentary*****Alopecia (hair loss), dermatitis/skin rash, folliculitis,****urticaria (hives), pruritis (itching), nail changes, hyperpigmentation (skin discoloration), radiation recall** | * Not all chemotherapy agents cause hair loss; usually begins about 7-15 days after the first dose.
* Patients should be told to avoid harsh shampoos or soaps on bare scalp as these can cause irritation and folliculitis.
* Wash and clean any lacerations with warm water and soap, cover the area with a clean bandage.
* Inform doctor or nurse if wound has any signs of infection (redness, swelling, warmth, exudate).
* Use mild, moisturizing soap and lotion frequently to reduce skin dryness, itching and irritation.
* Avoid showering/bathing with hot water, gently pat skin dry.
* Nail changes may occur: disruption of nailbed, nails may become discolored or ridged.
* Avoid nail salons due to risk for nail infection.
* Skin darkening may occur and is usually not harmful and does not require intervention.
* Photosensitivity: educate regarding proper precautions in the sun to avoid sunburn.
* Radiation recall can occur; usually managed with topical steroids and by discontinuing the offending agent
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| ***Gastrointestinal*****Nausea,****vomiting,****diarrhea, constipation, anorexia, mucositis/stomatitis (ulcers in mouth or throughout GI tract), dysgeusia (altered taste), dry mouth,****dyspepsia (heartburn)** | * The nurse should educate the patient to take anti-nausea medications and steroids as prescribed.
* If eating is difficult, eat small, frequent high-calorie meals and drinks throughout the day instead of three large meals.
* Add high-protein shakes and supplements.
* Avoid foods that are spicy, greasy or have strong odors.
* Stay adequately hydrated at all times.
* Add electrolyte sport drinks for oral rehydration and to prevent dehydration due to diarrhea.
* Report foul-smelling, continuous, liquid stools, as this may indicate a GI infection such as C. difficile.
* Take loperamide (Imodium) for diarrhea (if approved by provider).
* For constipation, patients should increase dietary fiber and add stool softener, such as Docusate Sodium (Colace) or laxative, such as Senna (Senokot) as needed.
* Eat with plastic utensils to help reduce any metallic taste in the mouth.
* Avoid alcohol-based mouthwashes due to their drying effects.
* To preserve the integrity of oral mucosa, patients should rinse mouth with salt water (normal saline solution) often, especially before and after meals to keep mouth clean.
* Patients can prepare homemade mouth rinse by mixing 1 cup of warm water with 1⁄2 teaspoon of salt or baking soda. Swish the rinse mouth for at least 30 seconds and spit out.
* For painful mouth sores, patients should be given special oral rinses (Magic Mouthwash) which contain topical analgesics to relieve pain
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| ***Genitourinary*****Acute kidney injury, renal failure, cystitis,****hematuria** | * Encourage patients to stay adequately hydrated at all times to protect the kidneys
* Urine should be clear to light yellow in color.
* Report any blood in urine or any painful urination, flank pain, pelvic pressure, reduced urine output or dark-colored urine.
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| ***Neurologic*****Peripheral neuropathy (altered sensation in the hands/feet),****central neurotoxicity, ototoxicity (ringing in the ears)** | * It is important for the nurse to encourage all patients to report any symptoms in this category in order to ensure proper assessment and management.
* Painful neuropathy may require intervention with medication and/or referral to neurologist.
* Progressive neuropathy may require interruption or discontinuation of offending chemotherapy agent.
* The patient should take measures to prevent falls: Wear closed toe footwear with rubber soles, non-slip mats in bathroom, remove tripping hazards in home; consider use of cane or other mobility devices to steady oneself when walking.
* Take caution not to cut or burn oneself when preparing and cooking food, or when handling hot water/coffee.
* Make sure the water temperature is not too hot while washing dishes or bathing.
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| ***Cardiovascular*****Weakening of heart muscle, heart failure, venous fibrosis, peripheral edema** | * The nurse should educate all patients to immediately report any symptoms of shortness of breath, leg swelling, chest pain, chest tightness, or finger swelling.
* Mild leg swelling induced by chemotherapy can be managed with elevating legs above heart level and reducing dietary sodium/salt intake.
* Assess for signs and symptoms of heart failure or irregular apical or radial pulses.
* Some cardiotoxic chemotherapy agents require evaluation of baseline cardiac studies (i.e. electrocardiogram, multiple-gated acquisition scan/ejection fraction) before administering such as doxorubicin (Adriamycin) or trastuzumab (Herceptin).
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| ***Vascular*****Phlebitis, Vein Sclerosis (scarring), Infiltration, Extravasation** | * Nurses should reassure patients that discoloration and erythema at the intravenous site is common. Mild discomfort can be managed by applying warm packs to the affected site for 15 minutes, 4 times daily.
* Veins may at times become permanently damaged and scarred due to chemotherapy.
* Advise patients to *immediately* report pain, burning, swelling, or other abnormal sensation at the IV site.
	+ Serious complications include chemotherapy infiltration and extravasation.
	+ Prompt recognition and intervention are critical .
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| ***Pulmonary*****Pulmonary fibrosis, pneumonitis, pulmonary edema** | * Patients at risk for pulmonary complications of chemotherapy include those over age 60, former and current smokers, those receiving or having had pulmonary radiation, or those with any pre-existing lung disease.
* Certain chemotherapy agents have a high risk for pulmonary toxicity, i.e. bleomycin (Blenoxane), and pulmonary function tests must be performed prior to each treatment, and cumulative dosing must be monitored.
* The nurse should encourage the patient to immediately report any shortness of breath, fever, productive cough with pink/red mucus, difficulty taking a deep breath, feeling easily winded, or feeling like you are ‘under water’.
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| ***Reproductive/Sexuality*****Infertility, loss of libido, impotence, erectile dysfunction, amenorrhea, induced premature ovarian failure or early menopause** | * For patients of child bearing age: the nurse should ensure that discussions regarding fertility preservation (egg harvesting or sperm banking) occur prior to starting treatment.
* The nurse should make referrals to fertility clinics and specialists as indicated.
* Patients should be told to engage in safe sex practices, such as use of a barrier method (i.e. condom) to avoid exposure to partners during intercourse and prevent pregnancy while on chemotherapy. Chemotherapy can induce significant harm to the fetus.
* Patients should speak openly with their partner about sexual problems and fears.
* Females: avoid douching, as well as using soaps, bubble bath and creams that can irritate the vulva and vagina.
* Water-based moisturizers may be used for vaginal dryness.
* Wear cotton underwear, as cotton releases sweat and moisture to reduce the chance of infection.
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| ***Psychiatric*****Anxiety, depression,****anger, fear, grief/loss, body image distortion** | * Symptoms of anxiety and depression are common in patients with complex disease progresses such as cancer.
* Active listening and empathy are critical skills for oncology nurses.
* The nurse should assess patient needs and connect to and coordinate referrals to psychosocial services as appropriate: psychiatrist/psychologist, therapist, or social workers.
* The patient should consider complementary and alternative medicine modalities to reduce anxiety (i.e. imagery, relaxation, reiki therapy).
* The patient should also consider joining a support group.
* Antidepressants and anxiolytics may be offered.
* Light physical exercise can help improve mood through endorphin release.
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**RESPONSIBILITIES TOWARDS A PATIENT RECEIVING RADIOTHERAPY IN AN ONCOLOGY UNIT**

**Supporting Patients Undergoing Radiation Treatments**

Radiation oncology nurses are equipped with a specific subset of skills that allows them to address issues unique to radiation treatments. Beyond managing symptoms and addressing patient education, radiation nurses proactively seek to understand their patients’ medical history, susceptibility to treatment issues, and potential for radiation-specific adverse events.

ONS member Annette Quinn, RN, MSN, program manager of radiation oncology at the University of Pittsburgh Medical Center’s Hillman Cancer Center in Pennsylvania, notes the minutiae that nurses address when caring for patients undergoing radiation therapy.

“Using their knowledge of radiobiology and radiation principles, radiation oncology nurses determine patients most at risk for treatment-related side effects,” Quinn says. “They work with patients and physicians to develop an appropriate plan of care, providing psychosocial support throughout the course of treatment. Because of daily radiation treatments—coupled with restrictive immobilization devices—patients can develop disturbances in psychosocial function, and that’s managed by the nursing team.”

ONS member John Hollman, RN, BSN, radiation oncology nurse at Texas Oncology in Round Rock, explains that the role of the radiation oncology nurse is multifaceted, ranging from teacher to caregiver to support staff and beyond.

“Most radiation oncology nurses are in charge of new patient education, among other things,” Hollman says. “We see our patients five days a week, sometimes for up to two months straight, so ongoing education is a huge part of what we do. Of course, we’re responsible for side effect management, especially since we’re interacting face-to-face with our patients daily. We also have to recognize that our patients’ sole responsibilities are not just to come for treatment. They’re people too, and they have to work and have families. We guide them through those challenges too.”

Radiation oncology nurses’ pretreatment assessments can differ depending on patients, cancer variations, and treatment types. It’s up to nurses to dive into their patients’ medical history to prepare them for successful treatment.

“Every patient undergoes a pretreatment assessment by the radiation oncology nurse focusing on past medical history and review of symptoms, allergies, and current medications,” Quinn says. “A pretreatment assessment in radiation is significant because it determines aspects of a patient’s health that may affect precise treatment so they can be managed before simulation. For example, a patient with claustrophobia may have trouble with a mask, or a patient with rotator cuff issues may have difficulty keeping his arms above the head for treatment.” Hollman says that pretreatment assessments are crucial for addressing patients’ fears and misunderstandings. It’s important to help them understand the technology and potential side effects, as well as how they can overcome barriers to their care.“By looking into their history, I can get a good idea of our patients’ needs before they even step foot in our clinic,” Hollman says. “Once they arrive, we get a baseline and vital signs, and that gives us a good picture physically. After we’re in a room, I try to give them a quiet environment where they can discuss their fears. Most patients feel comfortable talking to a nurse about their radiation fears, and I help them understand that it isn’t like what they’ve heard—it’s not the 1950s or ’60s. I show them the latest technology and assure them that reactions and side effects are nowhere near what they used to be.”

PRECAUTIONS TO TAKE WHILE CARING FOR A PATIENT ON CHEMOTHERAPY

**How to Safely Prepare the Medication:**

* Do not open capsules, crush tablets or cut pills. (If you have trouble swallowing pills, please let your doctor know. The medication may be available in a liquid form).
* Make a special work area away from children, pets, and food when preparing or giving chemotherapy.
* Prepare the medication away from windows, heat ducts, or fans.
* Cover the area on which you prepare the medication with a paper towel.
* Wash your hands before and after giving chemotherapy.
* Wash any areas that come into contact with the medicine with soap and water.

**If you are caring for someone who is receiving chemotherapy:**

Always wear rubber or disposable waterproof gloves when preparing or giving chemotherapy. (These can be found in most drug stores.)

* Avoid vinyl gloves.
* If you use rubber gloves, wash the outside with soapy water before removing them.
* If you use disposable gloves, remove them carefully, turning them inside out, then seal them in a plastic bag and throw into the trash.
* Always wash your hands with soap and water after you take the gloves off.
* If possible, do not handle chemotherapy if you are pregnant or breastfeeding.

**What Is the Proper Way to Store Chemotherapy Medication?**

* Check the labels to see if the chemotherapy should be kept in the refrigerator or away from light.
* If refrigeration is needed, make a special area away from food items.
* Store the medication in a sealed plastic container or bag.

**Can I Travel with Chemotherapy Medication?**

Traveling with chemotherapy is usually not a problem. However, you may have to make special arrangements if the chemotherapy needs special storage, like refrigeration. Talk with your nurse, doctor, or pharmacist for more instructions.

Regardless of how you travel, you should always seal your chemotherapy medicine in a plastic bag.

**Getting Rid of Body Waste:**

It takes about 48 hours for your body to break down and/or get rid of most chemotherapy drugs. During this time, a small amount of chemotherapy comes out in your urine, stool, and vomit. There are many things you can do to keep your home safe from exposure to chemotherapy during and after treatment.

* If you are using a bedpan for body wastes or a container for vomiting, be careful not to splash or spill the contents while you are emptying them into the toilet.
* If the bedpan or container used for vomit is not disposable, rinse it with dishwashing or laundry detergent and water, and put the rinse water in the toilet. Flush the toilet with the lid down.
* Any sink or basin that is used for vomiting should be rinsed with dishwashing or laundry detergent and rinsed with water.
* Wash clothing or bed linens that have body wastes on them with laundry detergent and hot water, separately from the other laundry, as soon as possible. If you are unable to wash them immediately, place them in a sealed plastic bag until they can be washed.

**If you are caring for someone who is receiving chemotherapy:**

Always wear rubber or disposable waterproof gloves when you are cleaning or handling containers that are used for body waste. Always wash your hands with soap and water after you take the gloves off.

**What should I do if I get body waste or chemotherapy on my skin?**

If you get body waste or chemotherapy on your skin, wash

the area with soap and water for five minutes. Watch the

skin for the next seven days. If there is any redness or irritation,

contact your doctor.

**What should I do if my eyes are splashed by body waste or chemotherapy?**

* If your eyes are splashed by body waste or by chemotherapy, wash the eye with water or eye wash (artificial tears) for 15 minutes. Contact your doctor immediately for further instructions.
* Contact the poison control center in your area for any other concerns.

**How should I get rid of equipment and contaminated items?**

* Use puncture-proof containers for sharp or breakable items. Dispose of needles and syringes intact. DO NOT BREAK OR RECAP NEEDLES.
* Place gloves and empty chemotherapy tubing or containers in a plastic bag and throw away with regular trash.
* Place syringes, tubing, or containers with any remaining chemotherapy into a closed container. Label the container with the “Hazardous Waste” label that has been provided.
* Chemotherapy is considered a hazardous waste. • Keep containers used for “Hazardous Waste” away from children, pets, and food