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Contact Hours: **4**

Prostate Cancer

Current Approaches in Nursing Care and Patient Management

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LEARNING OUTCOME AND OBJECTIVES: Upon completion of this course, you will understand current, evidence-based interventions to support the patient impacted by prostate cancer and effects of treatment. Specific learning objectives to address potential knowledge gaps include:

- Review the risk factors and prevalence of prostate cancer.
- Describe the steps in the prostate cancer diagnostic process.
- Summarize treatment options for prostate cancer, including benefits, risks, and side effects.
- Outline the nurse's role in management and care during treatment.
- Discuss the nurse's role in helping manage the long-term sequelae experienced by the prostate cancer patient post-treatment.

INTRODUCTION

Being diagnosed with prostate cancer is difficult to deal with both physically and emotionally. Men respond to the diagnosis in ways that may include feeling angry and fearful. They may be anxious and uncertain regarding treatment options and the impact of treatment side effects.

Nurses play a pivotal role in helping these patients by listening to and addressing their concerns. They help patients understand what is involved with each treatment option, what the risks and benefits are, what their experience may be during treatment, and what they can expect following treatment.

Nurses are also a valuable resource and support for helping the prostate cancer patient manage the long-term, post-treatment effects and improve their quality of life.

PROSTATE CANCER OVERVIEW

Prostate cancer is usually slow growing and seldom causes symptoms until it enters an advanced stage. Most men who develop prostate cancer die from other causes, and they may even be unaware they have it. However, once the cancer begins to grow quickly or when it spreads beyond the prostate gland, it becomes threatening. Whether and how prostate cancer grows is different from one individual to another, and it is difficult to predict accurately how it will continue to develop in a specific person.

Types of Prostate Cancer

Localized prostate cancer refers to cancer that affects the prostate gland, has not spread to lymph nodes, and has not formed tumors in other areas of the body (metastasis) (IQWiG, 2020).

There are many types of prostate cancer; **adenocarcinoma**, diagnosed in 99% of prostate cancer cases, is the most common type (CTCA, 2021a). This type of cancer may occur anywhere in the body and forms in the glandular epithelial cells lining organs that secrete mucus or other fluids. Adenocarcinoma in the prostate is also referred to as *glandular prostate cancer*. There are two main subtypes of adenocarcinoma:

- Acinar, a cancer that accounts for practically all prostate adenomas
- Prostate ductal adenocarcinoma (PDA), a rarer and more aggressive type of adenocarcinoma, which is hard to detect, as it does not always increase PSA (prostate specific antigen) levels
(CTCA, 2021a)

Other prostate cancers are very rare and include:

- Transitional cell carcinoma (or urothelial cancer), which spreads to the prostate from the urethra or bladder
- Neuroendocrine tumors (carcinoids), which appear in nerve and gland cells that make and release hormones into the bloodstream
- Small-cell carcinoma, the most aggressive type of neuroendocrine cancer
- Squamous cell carcinoma, a very rare but fast-growing form that starts in fat cells covering the prostate gland
- Prostate sarcoma, which develops outside the prostate gland in the soft tissue of the prostate (muscles and nerves)
(CTCA, 2021a)



Risk Factors for Prostate Cancer

The exact cause of prostate cancer is not known, but certain factors are known to increase the risk. These include:

- **Age:** Age is the greatest risk factor, and prostate cancer risk increases with age.
- **Close relatives with prostate cancer:** Having a blood-relative father or brother increases risk, and having several other close relatives with prostate cancer increases risk even higher.
- **Family history of breast cancer:** Having a family history of genes that increase the risk of breast cancer or family history of breast cancer raises the risk for prostate cancer.
- **Ethnicity:** Black men have a somewhat higher risk.
- **Obesity:** Obesity raises the risk of prostate cancer, although studies have shown mixed results. In obese patients, the cancer is more likely to be more aggressive and more likely to return after initial treatment.
- **Vitamin E:** Dietary supplements with a high level of vitamin E have been shown to increase risk 17% if taken over many years. No biological mechanism has been proposed to explain the increase.
(OSU, 2021)

No high-quality studies have been done that show that diet influences risk (IQWiG, 2020; Mayo Clinic, 2021a).

Prostate Cancer Prevalence

Second to skin cancer, prostate cancer is the most common cancer in men. About 1 in 8 (12.5%) men will receive a prostate cancer diagnosis during their lifetime. Prostate cancer is the second leading cause of cancer death in men, second only to lung cancer. About 1 in 4 men will die from it.

About 6 cases in 10 are diagnosed in men ages 65 or older. Prostate cancer is rarely diagnosed in men under 40. Average age at diagnosis is about 66.

The percentage of prostate cancers diagnosed at the local stage is 74.3%, and the five-year relative survival for localized prostate cancer is 100.0%. The overall five-year relative survival for those diagnosed with prostate cancer is 97.5% (ACS, 2021a; NCI, 2021).

Clinical Manifestations

In most cases, prostate cancer symptoms are not evident in the early stages. About 85% of prostate cancers are detected during early screening tests before the patient develops any



symptoms. The severity of symptoms may depend on where the cancer is located in the prostate and how advanced it has become.

Due to the proximity of the prostate gland to bladder and urethra, the cancer may produce a variety of **symptoms**, including:

- Urinary frequency and urgency
- Dysuria
- Increased urination at night
- Loss of bladder control
- Decreased flow or velocity of urine stream
- Hematuria
- Hematospermia
- Erectile dysfunction

Symptoms in the **advanced stage** may include:

- Lymphedema in legs or pelvic area
- Numbness or pain in hips, legs, or feet
- Chronic bone pain and fractures
- Weight loss
- Uremic symptoms

(CTCA, 2021b; Johns Hopkins Medicine, 2020)



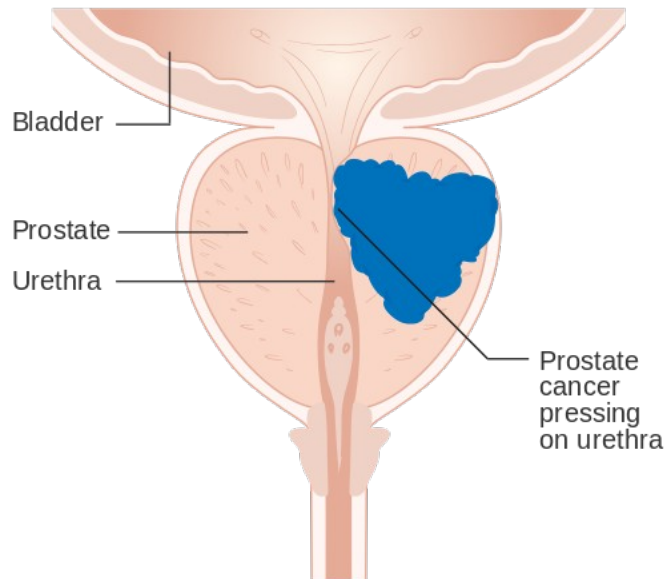


Diagram showing prostate cancer pressing on the urethra, which can cause symptoms.

(Source: Cancer Research UK / Wikimedia.)

PROSTATE CANCER DIAGNOSIS

Accurately diagnosing prostate cancer is crucial in determining which treatment options will be the most effective.

Early Detection and Screening

Most prostate cancers are first found as a result of screening. Two tests commonly used to screen for prostate cancer are:

- Prostate specific antigen (PSA) level (age-adjusted normal range 4.0 to 6.5)
 - Digital rectal examination (DRE)
- (Roberts et al., 2018; ACS, 2021b)

Prostate Cancer Biopsy

If prostate cancer is suspected based on results of screening or symptoms, the actual diagnosis can only be made by performing a prostate biopsy. A biopsy involves removing about 12 small core samples of the prostate for histological examination. A core biopsy is the main method used.

Biopsies can sometimes miss a cancer, and if it is strongly suspected cancer is present after the biopsy, a repeat biopsy may be considered or other lab tests carried out to confirm it.



These tests include:

- Prostate Health Index (PHI)
- 4K Score Test
- PCA3 (Progensia)
- ExoDxProstate (IntelliScore)
- TMPRSS2-ERG
- ConfirmMDx
(ACS, 2021c)

Determining the Extent of Cancer

To determine if cancer has spread outside of the prostate, imaging tests may be used to provide information about the cancer's location. Such imaging may include:

- Bone scan
- CT scan
- MRI
- PET-CT scan
(ASCO, 2020a)

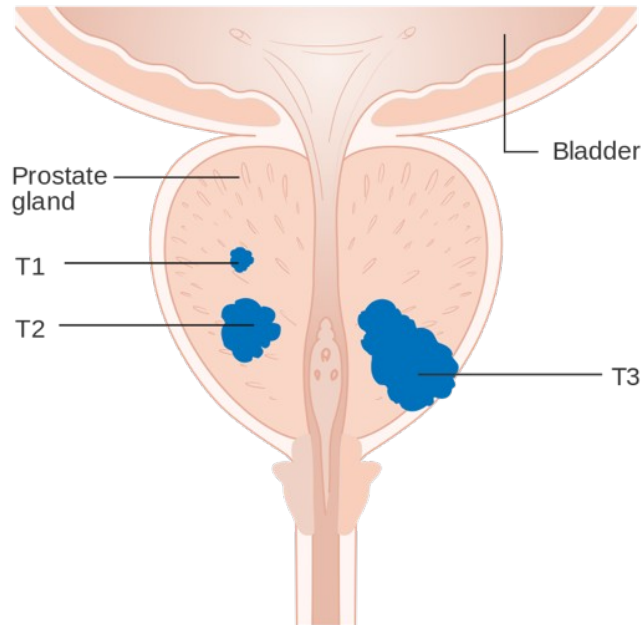
Grading and Staging

When cancer is found on biopsy, it is graded using the **Gleason scoring system**, which indicates how quickly a cancer is growing. The lower the score, the healthier the cells appear. The lowest score for a low-grade cancer is 6. A score of 7 is medium grade, and 8–10 are high grade cancers.

Staging indicates how advanced the cancer is. The most common method is the **TNM staging system**. For instance:

- T (tumor) indicates extent of primary tumor.
- N9 (node) indicates spread to lymph nodes near the bladder.
- M9 (metastasis) indicates spread to other lymph nodes and organs.
(ASCO, 2021a)





Stages T1-3 prostate cancer. (Source: Cancer Research UK / Wikimedia Commons.)

UNDERSTANDING TREATMENT OPTIONS

Involvement of patients in treatment decisions is fundamental, enabling them to understand both benefits and risks of available treatment options. Patients must be given information that is clear and understandable to ensure their preferences are based on fact and free of clinician bias.

Nurses, being patient advocates, are in a unique position to assist prostate cancer patients in making the most appropriate decision for treatment through education and clarification of the evidence supporting each option. Nurses must remain knowledgeable about the following treatment options and be prepared to educate and discuss them with their patients, to support them through their decision-making process, and to provide care during and following their treatment.

Conservative Treatment for Localized Prostate Cancer

Watchful waiting and **active surveillance** are conservative measures for management of low-risk, low-grade (Gleason score ≤ 6 and PSA ≤ 10), stage I and II prostate cancer. These forms of management are based on research that shows many men diagnosed with early-stage, low-grade prostate cancer need little if any immediate medical treatment, especially older men (PCF, 2021a).

It is important when discussing these forms of treatment with the patient that there is a clear understanding of how the physician defines each approach. Some consider them identical; others consider them as separate management approaches (PCUK, 2019).



WATCHFUL WAITING BENEFITS AND RISKS

Watchful waiting, often called *observation*, is a noninvasive approach that monitors for symptom development. When symptoms occur, treatment is directed toward slowing the disease progression or relieving its symptoms, and not to cure.

This approach is recommended for men 65 years of age and older who have significant comorbidities and those whose cancer is low-risk and slow-growing. It is also an option for patients with life expectancy of less than 5 years. Its purpose is to avoid the risks and complications associated with more aggressive forms of treatment.

The **benefits** of watchful waiting include avoiding aggravation of other health conditions that would be caused by the side effects of aggressive forms of treatment. Watchful waiting avoids overtreatment, maintains the patient's quality of life, reduces the chance of complications, and treats symptoms as soon as possible.

Risks include the chance that a possibility for a cure may be missed, that characteristics of the cancer will change, and that the cancer will start to grow and metastasize. Living with untreated cancer and its frequent monitoring can also be a source of psychological stress for men (Leslie et al., 2021; Hinkle & Cheever, 2018).

ACTIVE SURVEILLANCE BENEFITS AND RISKS

Active surveillance for men with prostate cancer involves avoiding or postponing immediate treatment combined with monitoring. Definitive treatment is offered if there is evidence that the patient is at increased risk for disease progression (Richie, 2020).

Active surveillance is appropriate for men under 65 years of age with a considerable life expectancy (>10 years) and low-risk disease. It involves a monitoring protocol, with the American Society of Clinical Oncology (ASCO, 2020a) recommendations including:

- PSA test every 3 to 6 months
- DRE every 12 months
- Confirmatory prostate biopsy within 6 to 12 months
- Repeat biopsy every 2 to 5 years
- MRI if clinical or PSA changes of concern arise

Initiation of active treatment is recommended for Gleason scores ≥ 7 or significant increases in the volume of cancer. Terminating serial biopsies should occur when patients turn 80 years old (Sosnowski et al., 2020).

The **benefits** of active surveillance include avoidance of unnecessary treatment and its resultant side effects. **Risks** are that it can create ongoing worry about having cancer and “doing nothing”



or missing the window of opportunity for curative treatment should the cancer become more aggressive (NFPCSG, 2021).

Aggressive Treatments for Prostate Cancer

High-risk prostate cancer carries an increased risk of disease recurrence and death. It is treated locally, focally, or systemically. Aggressive treatments increase the potential for definitive cure for localized prostate cancer and for cancer that has spread beyond the prostate. Hormonal therapy, targeted therapy, radiopharmaceuticals, immunotherapy, and chemotherapy are the standard treatments for cancer that has spread beyond the prostate and is no longer considered curable (Leslie et al., 2021; ASCO, 2020b).

LOCAL TREATMENTS

Local treatments affect the cancerous tumor and the area surrounding it. These include surgery and forms of radiation therapy.

Surgery

A radical prostatectomy is the complete removal of the prostate, seminal vesicles, tips of the vas deferens, and often, surrounding fat, lymph nodes, and blood vessels. An attempt is made to protect the nerves that control penile erection and the bladder from damage.

Radical prostatectomy is the treatment of choice for high-risk localized prostate cancer, offering the **benefits** of a significant improvement in overall survival, cancer-specific survival, and the development of distant metastases. These benefits over other therapies are not evident before 10 years after treatment and are most pronounced in men younger than 65 years at time of diagnosis (Leslie et al., 2021).

A **radical retropubic prostatectomy** is performed through an incision in the wall of the lower abdomen under general, spinal, or epidural anesthesia along with sedation. Postoperatively, a urinary catheter remains in place for up to 2 weeks. The operation requires a hospital stay for a few days and limited activities for several weeks.

A **radical perineal prostatectomy** is done through an incision in the skin of the perineum. This approach is used less often, as it is more likely to lead to erectile dysfunction and because nearby lymph nodes cannot be removed. It is useful for men with other medical conditions that make retropubic surgery difficult. This approach may result in less pain and easier recovery.

A **laparoscopic radical prostatectomy (LRP)** is done through several smaller incisions. Special surgical tools are used to remove the prostate, one of which has a small video camera on the end for visualization purposes. The surgeon either holds the tools directly or uses a control panel to precisely move robotic arms that hold the surgical tools. This approach has become more common. Rates of major side effects from LRP, however,



appear to be about the same as for open prostatectomies. Recovery of bladder control may be slightly delayed with this approach.

Transurethral resection of the prostate (TURP), the surgery done for benign prostatic hypertrophy, may be recommended for men with advanced prostate cancer to help relieve symptoms, such as difficulty with urination. It is not used as a curative measure, however. During this procedure, under spinal or general anesthesia, the inner part of the prostate gland that surrounds the urethra is removed using a resectoscope passed through the urethra. A laser is used to cut or vaporize the tissue.

Risks of prostate surgery during or shortly after the operation can include:

- Adverse reaction to anesthesia
- Bleeding
- Blood clots in legs or lungs
- Infections at surgical site
- Damage to nearby organs

Rarely, the intestines may be injured, leading to possible abdominal infections that may require reparative surgery. Injuries are more common with laparoscopic and robotic surgery than with the open approach (Leslie et al., 2021; ACS, 2019a).

Side effects of surgery may include erectile dysfunction, which may occur immediately and improve over time, urinary incontinence, urethral strictures, and an increased risk of inguinal hernias (Leslie et al., 2021).

Radiation Therapy

Radiation therapy involves destroying cancer cells using high-energy rays or particles. Cure rates with radiation are comparable to those of radical prostatectomy. Two major forms of radiation therapy are external beam radiation (EBRT) and brachytherapy (internal radiation). External beam radiation is used as initial treatment for high-risk localized cancer, and brachytherapy is an option for patients with low- or intermediate-risk prostate cancer.

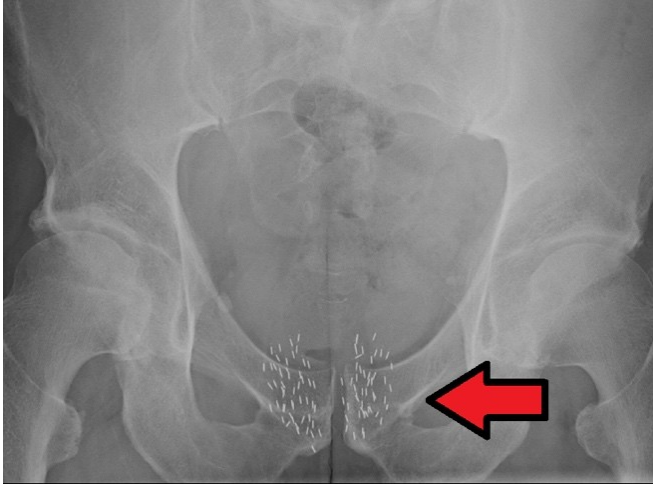
External beam radiation involves focusing high-energy beams, such as X-rays or protons, directly at the prostate from a machine outside the body, called a *linear accelerator*. It can be used to attempt a cure in an early-stage cancer or to help relieve symptoms, such as bone pain.

Brachytherapy is a type of radiation therapy that can be given as either high-dose-rate or low-dose-rate. With high-dose-rate brachytherapy, radioactive material is temporarily placed in the body for a short period (from a few minutes up to 20 minutes); this may be repeated once or twice a day over a number of days or weeks. Low-dose-rate seed



brachytherapy involves placing 80 to 100 radioactive metallic seeds permanently inside the prostate gland. These seeds slowly deliver a high dose of radiation to the gland and seminal vesicles over several months before the radiation completely decays.

Brachytherapy can be given by itself or along with external beam radiation.



Brachytherapy seeds used to treat prostate cancer. Arrow marks the beads.

(Source: James Heilman, MD / Wikimedia Commons, Creative Commons License BY-SA 4.0.)

Depending on the stage of the prostate cancer and other factors, **indications** for radiation therapy include:

- As initial treatment for high-risk localized cancer, resulting in cure rates that are approximately the same as for radical prostatectomy
- As part of the first treatment (along with hormone therapy) for cancers that have spread into nearby tissues
- If the cancer is not removed completely or recurs in the area of the prostate post surgery
- To help keep advanced cancer under control and to prevent or relieve symptoms

Side effects of radiation include:

- Radiation proctitis, which can cause bowel dysfunction, including diarrhea, blood in the stool, rectal leakage, and rectal fistula
- Radiation cystitis, which causes frequency, burning on urination, and/or hematuria. These usually improve over time, but in some men it is permanent. The U.S. Food and Drug Administration (FDA) has approved a device called a *SpaceOAR* that places a hydrogel between the prostate and the rectum to physically separate those two structures, thereby reducing the dose of radiation delivered to the rectum.



- Seed migration (with brachytherapy)
- Urinary incontinence, but less often than with surgery. The risk is low at first, but increases each year for several years after.
- Rarely, urethral stricture requiring further treatment
- Erectile dysfunction, including impotence
- Skin reactions
- Fatigue
- Reduced blood counts
- Pubic hair loss

The **benefits** of having brachytherapy include avoiding the risks of major surgery, and because brachytherapy is delivered with a high degree of accuracy, it has minimal **side effects**, especially sexual dysfunction. Preserving sexual function for as long as possible is what men may value the most. Opting for radiation rather than surgery may help avoid erection problems (ACS, 2021d; UM, 2021; Hall et al., 2021).

FOCAL TREATMENTS

Focal treatments are noninvasive techniques using heat or cold to target small low- or intermediate-risk tumors inside the prostate. The goal of the treatment is to ablate, or destroy, the tumor and a safety margin within the prostate while leaving the remainder of the gland intact. Focal treatments can also be an option for men whose cancer has returned after other treatments.

Cryotherapy

Cryotherapy, also called *cryosurgery* or *cryoablation*, is a focal treatment that uses very cold temperatures to freeze and kill prostate cancer cells as well as most of the prostate gland. Compared to surgery or radiation therapy, long-term effectiveness of cryotherapy is not well known.

Cryotherapy treatment is **indicated** for a cancer that has recurred following other forms of treatment such as radiation therapy. It is an option for men with large prostate glands, for treating low-risk early-stage prostate cancer, or for a man who is not a candidate for surgery or radiation. In most cases, cryotherapy is not used as the initial treatment for prostate cancer.

Cryotherapy is done under spinal, epidural, or general anesthesia, and for most patients, it is a same-day procedure. During this treatment, a transrectal ultrasound (TRUS) is used to guide several hollow needles through the skin of the perineum, and very cold gases are then passed through the needles to freeze and destroy the prostate. Warm saltwater is



passed through a catheter placed in the urethra during the procedure to keep it from freezing. This catheter remains in place for several weeks during recovery.

Side effects tend to be worse in men who have already had radiation therapy compared to those who have it as initial treatment, and may include:

- Hematuria for a day or two following the procedure
- Soreness in the needle insertion sites
- Swelling of the penis or scrotum
- Pain or burning sensation in the bladder and rectum
- Bladder and bowel frequency (most individuals recover normal function over time)
- Damage to nerves near the prostate that control erections (erectile dysfunction is more common following cryotherapy than after radical prostatectomy)
- Urinary incontinence (rare for those who have cryotherapy as initial treatment but more common in those who have already had radiation therapy)
- Development of a fistula between rectum and bladder (a rare [$<1\%$] but serious occurrence that allows urine to leak into the rectum, often requiring surgical repair)
(ACS, 2021e)

Cryotherapy has several **benefits** over other forms of treatment, including:

- Performed on an outpatient basis, with half of all patients going home the same day and half the next day
- Less blood loss
- Reported success rates similar to surgery and brachytherapy
- Quick patient recovery, return to normal activities in about 10 days
- Minimal pain, which can be treated with anti-inflammatory medications for several days; narcotic pain medications not needed
- Lower risk over surgery and radiation of incontinence, irritable bladder, and bowel problems
- Can be repeated if prostate cancer recurs
(SHS, 2021)



High-Intensity Focused Ultrasound

High-intensity focused ultrasound (HIFU) is a heat-based type of focal therapy in which sound waves are directed at cancerous parts of the prostate gland via a probe inserted into the rectum. HIFU causes the temperature of the tissue to rise, and the heat destroys the targeted tissue area. It is an alternative to active surveillance for patients with early-stage prostate cancer and an alternative or follow-up to radiation, surgery, or other failed treatment for tumors that are small and localized.

Benefits include:

- Requires no surgical incisions and does not use radiation
- Can target cancer cell tissue, leaving nontargeted tissue unharmed
- Is an outpatient procedure with short recovery time (within 24 hours)
- Reduces (but does not eliminate) the risk of urinary incontinence and erectile dysfunction compared to surgery or radiation therapy

HIFU is associated with fewer **side effects** compared to more aggressive therapies and may include:

- Erectile dysfunction, ejaculation problems, and sexual impotence
- Urinary tract infections, incontinence, frequency, burning sensation, urinary retention
- Rectal wall injury, rectal incontinence, burning and bleeding from the probe
- Prostate infection
- Return of prostate cancer
(Cleveland Clinic, 2021)

SYSTEMIC TREATMENTS

Systemic treatments are standard for disease that has spread beyond the prostate and is no longer considered curable. These include:

- Hormone therapy
- Immunotherapy
- Targeted therapy
- Chemotherapy
- Radiopharmaceuticals



Hormone Therapy

Androgen deprivation therapy (ADT) (also sometimes referred to as *antihormone therapy*)—through pharmaceuticals (antiandrogens/chemical castration) or surgery (orchiectomy/medical castration)—is standard care for advanced and metastatic prostate cancer.

Androgen hormones such as testosterone are the main fuel for prostate cancer cell growth and the target of hormone therapy. Its purpose is either to stop testosterone from being produced or to directly block it from fueling prostate cancer cell growth. Without androgens, prostate cancer goes into remission, often for many years. Hormone therapy alone, however, does not cure prostate cancer (CancerCare, 2021).

While hormone therapy is generally effective at controlling cancer growth, in many men some cells gain the ability to grow in the low-testosterone environment. As they grow, the therapy has less and less effect over time on the growth of the cancer. This is referred to as *castration-resistant prostate cancer (CRPC)*.

Orchiectomy (the surgical removal of the testicles) is an effective method for drastically reducing testosterone release. The procedure is most often done on an outpatient basis, and recovery tends to be quick, with no further hormone-therapy required. Although orchiectomy does not cause the side effects associated with other hormonal therapies, it is associated with considerable emotional impact. For some men who are concerned about cosmetic appearance following orchiectomy, artificial testicles that look like normal ones can be inserted into the scrotum. Because orchiectomy is permanent and irreversible, most men opt for drug-based therapy instead.

Drug-based hormone therapy involves the use of medications (luteinizing hormone-releasing hormone [LHRH] agonists and antagonists) to block the release of LHRH. Drugs are also available that block the formation of androgens made in other parts of the body, such as the adrenal glands and the prostate glands themselves, which can still produce male hormones.

There are many **side effects** for androgen deprivation therapy, including:

- Decreased libido
- Erectile dysfunction
- Shrinkage of the testicles and penis
- Hot flashes
- Anemia
- Osteoporosis leading to fractures
- Decreased mental sharpness, especially in memory
- Loss of muscle mass and physical strength



- Insulin resistance
- Weight gain
- Mood swings and depression
- Fatigue
- Gynecomastia and mastodynia
(ACS, 2020a; PCF, 202b)

Immunotherapy

In recent years, immunotherapy has made a major impact on the treatment of metastatic cancer and has altered the standard of care for many tumor types. Immunotherapy uses the power of the body's immune system to prevent, control, and eliminate cancer, and it is effective on many different types of cancer. Immunotherapy has become a treatment for patients with certain types of cancer that are resistant to chemotherapy and radiation treatment. The ability of immunotherapy to recognize and target cancer cells makes it a universal response to cancer (CRI, 2021).

There are two FDA-approved types of immunotherapies for prostate cancer. **Sipuleucel-T** (Provenge) is a vaccine created by collecting immune cells from the patient's blood and incubating them with a prostate cancer-associated antigen intended to stimulate and direct them against prostate cancer. Ultimately, the engineered product is reinfused into the patient over three treatments, two weeks apart.

The most common **side effects** seen in those receiving sipuleucel-T are:

- Fevers
- Chills
- Headache
- Influenza-like illness
- Myalgias
- Hypertension
- Hyperhidrosis
- Groin pain

These side effects are associated with the infusion period and usually last only for a few days (Fay & Graff, 2020; Zero, 2021a; Johns Hopkins, 2021a).

Pembrolizumab is a type of immune checkpoint inhibitor that blocks signals that mask cancer cells and activates tumor-killing immune cells. It is approved for treatment of all solid tumors with specific genetic characteristics. Patients who qualify for this



treatment must have progressed on prior treatment and have no satisfactory alternative treatment options.

This therapy is delivered intravenously once every 3 weeks, and the most common **side effects** include:

- Fatigue
- Cough
- Shortness of breath
- Nausea
- Constipation
- Itching
- Rash
- Decreased appetite

There are also rare but serious side effects related to overactive immune responses, which are treated by discontinuing the drug. In some instances, steroid medications must be used to suppress the immune reactions (PCF, 2021c; CRI, 2020).

Two other medications, abiraterone acetate (Zytiga) and cabazitaxel (Jevtana injection), are treatment options for patients requiring care for management of metastatic castration-resistant prostate cancer that does not respond to sipuleucel-T or the usual treatment options (Hinkle & Cheever, 2018).

Although immunotherapy for prostate cancer does not lower PSA, treat symptoms, or delay disease progression, it has been shown to increase survival in patients with metastatic castration-resistant cancer who show few or no symptoms. There are ongoing studies attempting to clarify exactly how this treatment works (PCF, 2021c).

Targeted Therapy

Targeted therapy uses drugs or other substances to precisely identify and attack the specific genes, proteins, or the tissue environment that contribute to cancer growth and survival while causing limited damage to healthy cells.

Such drugs used in the treatment of prostate cancer include the poly (ADP-ribose) polymerase (**PARP**) **inhibitors** rucaparib (Rubraca) and olaparib (Lynparza). These target PARP, which is an enzyme involved in the normal pathway to repair damaged cellular DNA. By blocking this pathway, these drugs make it difficult for tumor cells with an abnormal gene to repair damaged DNA, leading to the death of these cells. Tests of saliva and tumor are done to be certain the patient has the genetic mutation before starting treatment with this drug.



PARP inhibitors have been shown to improve cancer patient outcomes when used alone or in combination with treatments such as chemotherapy and radiation, both of which damage DNA.

Enzalutamide (XTANDI), approved for metastatic castration-sensitive prostate cancer (mCSPC), is an **androgen receptor-signaling inhibitor** that interferes with androgen receptor nuclear translocation, DNA binding, and coactivator mobilization, leading to cellular death and decreased prostate tumor volume.

Targeted therapy is often used along with chemotherapy and other treatments. These drugs may cause side effects including nausea, vomiting, weakness, changes in blood counts, as well as skin, hair, nail, and/or eye problems (ASCO, 2021b; FDA, 2019).

Chemotherapy

Chemotherapy is recommended for treatment of hormone-resistant prostate cancer, usually for men who fall into one of three groups:

- Those with fast-rising PSA levels
- Those who are developing metastatic cancer symptoms
- Those with metastatic cancer that is rapidly growing

Chemotherapy can extend life, reduce pain, and improve quality of life, but it does not cure prostate cancer. Many men experience symptomatic improvement after starting chemotherapy.

Taxane chemotherapy given along with prednisone is the standard of care for metastatic prostate cancer that is spreading and progressing despite hormone therapy. Approved taxane chemotherapy agents include docetaxel (Taxotere) and cabazitaxel (Jevtana) (PCF, 2021d).

Chemotherapy targets cells that grow and divide quickly, as cancer cells do. These drugs work by inhibiting mitosis and inducing apoptosis (death) in cells undergoing the division process. The main **benefit** of chemotherapy is its potential to destroy cancer cells. It is the most potent tool for fighting cancer, and the potential benefit depends on the type of cancer, how advanced it is, and the patient's goals in receiving the treatment.

While chemotherapy may kill rapidly growing cancer cells, the **risk** is that it may also damage fast-growing healthy cells throughout the body. These include blood-forming cells in the bone marrow, hair follicles, and cells lining the mouth, digestive tract, and reproductive system. Chemotherapy can also cause damage to nerves.

Chemotherapy is given in cycles, each lasting a few weeks, followed by a period of rest. Many patients experience some side effects, both short- and long-term, but others experience very few. Each person's experience with chemotherapy is unique.



More common **short-term side effects** may include:

- Fatigue (the most common side effect)
- Alopecia
- Anemia
- Nausea and vomiting
- Appetite changes
- Constipation
- Diarrhea
- Mouth, tongue, and throat sores (mucositis)
- Urine and bladder changes
- Mood changes

Long-term side effects are less common and may include:

- Peripheral neuropathy
- Skin and nail changes
- Increased risk of dental problems
- Increased risk for cardiac problems
- Lung damage in those who also received radiation, smoke, or have a history of lung disease
- Weight changes
- Changes in libido and sexual function
- Fertility issues
(ACS, 2020b)

Most types of pain improve or disappear between treatments, but nerve damage often worsens with each dose of chemotherapy. It can take months or years for nerve damage to improve or disappear, and in some people, it never completely disappears (ASCO, 2019).

Systemic Radiopharmaceuticals

Systemic radiopharmaceuticals, or radionuclides, are liquid drugs administered orally or intravenously. They travel throughout the body and collect in places where cancer cells are located. This allows for delivery of radiation doses exactly to the tumor or cancer cells.



One such drug, radium Ra 223 dichloride (Xofigo), is approved by the FDA for men whose prostate cancer has metastasized to bones but not to other organs and that has not responded to other treatments. Xofigo has been found to improve pain-related quality of life and to reduce the risk for or delay the time before it becomes necessary to use opioids and before the first skeletal event.

Adverse reactions to Xofigo can include:

- Pancytopenia due to bone marrow suppression
- Nausea
- Diarrhea
- Vomiting
- Peripheral edema
- Renal impairment and failure
- Increased risk of bleeding or infection
(ACS, 2019b; Weaver, 2021)

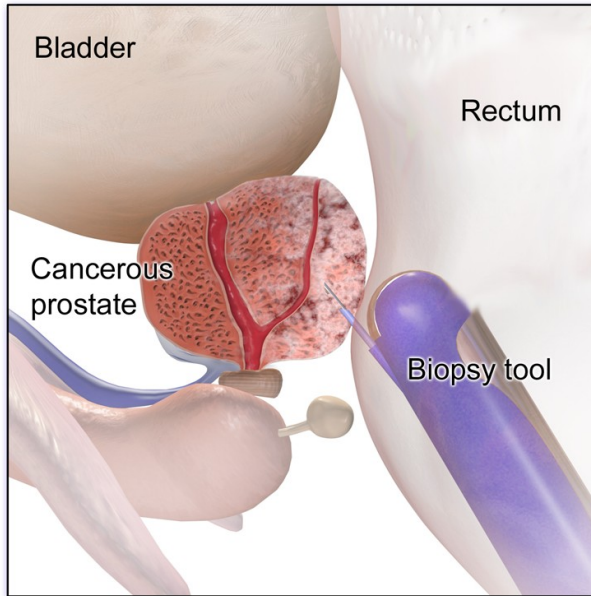
NURSING MANAGEMENT DURING TREATMENT

Patient education is at the heart of caring for those undergoing treatment for prostate cancer. Nurses are in a unique position to educate men with prostate cancer and their families, screen for and identify adverse effects of treatment, and provide support throughout the treatment process. Nurses are also central to care coordination within the multidisciplinary team and the provision of both physical care and emotional support for men and their partners along their journey through the healthcare system.

Prostate Needle Biopsy Nursing Care

The diagnosis of prostate cancer can only be confirmed by histological examination of tissue removed surgically. **Fine needle aspiration** is a quick, generally painless method done either transrectally or transperineally to obtain prostate cells for cytological examination and to determine the stage of disease that may be present. The procedure typically causes a very brief uncomfortable sensation each time the spring-loaded needle takes a sample. Nurses are involved in the diagnostic process when caring for a patient who has undergone prostate biopsy.





Prostate needle biopsy. (Source: Blausen Medical, 2014.)

The nurse's role in the process of obtaining a needle biopsy involves:

- Managing procedure setup
- Prepping the patient
- Assisting during the procedure
- Providing emotional support
- Providing pain control measures

The nurse provides **discharge instructions** to the patient and/or family/caregivers that include:

- Completing any course of prescribed antibiotics
- Avoiding strenuous exercise such as jogging, heavy lifting, golfing, and bike riding for at least 7 days
- Drinking at least six glasses of water a day for the first few days
- Waiting at least 7 days to resume sexual activity
- Notifying the physician promptly in case of:
 - Fever of 100 °F or higher, shaking, or chills
 - Heavy rectal bleeding or clots, or bleeding that continues longer than 2 to 3 days
 - Pure blood stools



- Increased urinary pain, frequency, or burning
- Inability to urinate within 8 hours
- Blood in urine for longer than 2 to 3 days

(Hinkle & Cheever, 2018; Johns Hopkins Medicine, 2021b)

Prostatectomy Nursing Care

Preoperative nursing care for patients undergoing prostatectomy includes:

- Reducing anxiety by assessing the patient's understanding of the diagnosis, planned procedure, and expected postoperative outcomes, and addressing any other concerns and questions
- Educating the patient regarding anatomy
- Relieving discomfort with bedrest and analgesics
- If hospitalized, preoperative monitoring of voiding patterns, assessing for bladder distension, and performing catheterization if prescribed
- Preparing the patient for surgery, which may include:
 - Prepping the patient
 - Administering an enema
 - Application of antiembolic stockings
 - Administering prophylactic antibiotics

Postoperative nursing care involves:

- Maintaining fluid balance and documenting intake and output, including fluid used to irrigate the catheter
- Assessing for electrolyte imbalance
- Monitoring vital signs
- Observing for signs of confusion or respiratory distress
- Relieving pain by administered analgesics as ordered and evaluating effectiveness
- Increasing mobility beginning with early ambulation
- Assessing for bladder spasms and administering prescribed smooth muscle relaxant medications and/or warm sitz baths



- Monitoring wound drainage and providing wound care as needed
- Monitoring drainage tubing and irrigating the system as prescribed
- Providing aseptic catheter and tubing care
- Preventing constipation
- Providing reassurance and explanations of care to the patient and significant others (Hinkle & Cheever, 2018)

Ideally, **discharge planning** begins when the patient is admitted. Discharge education is provided throughout the patient's hospital stay, and the patient's understanding is confirmed on the day of discharge. Nurses play a major role in the discharge process by coordinating care and providing timely communication with families and community providers.

Instructions for the patient who is being discharged to home following a prostatectomy includes:

- Caring for the wound
- Urinary catheter care
- Dealing with bladder spasms
- Need for and training in performing Kegel's exercises
- When to call the physician
- Other self-care, such as:
 - **Not** driving for the first 3 weeks after discharge
 - If long car trip is necessary, stopping at least every 2 hours
 - **Not** lifting anything heavier than a 1-gallon milk jug (8.6 pounds) for the first 6 weeks
 - Drinking at least 8 glasses of water daily
 - Eating lots of fruits and vegetables
 - Taking stool softeners to prevent constipation
 - **Not** straining during bowel movements
 - **Not** taking aspirin, ibuprofen, naproxen, or other similar medication for 2 weeks post surgery, as they may restrict the body's ability to clot blood (NIH, 2019)



Upon discharge, community-based or transitional care may be indicated, depending on the patient's health status and presence of family or other caregivers. **Home visits** by the nurse involve assessment of:

- Cardiovascular status
- Respiratory status
- Fluid and nutritional status
- Patency of urinary drainage system
- Wound status
- Catheter care and wound care

During the home visit, the nurse also reinforces previous education, assesses the patient and family's ability to manage required care, encourages ambulation and perineal muscle exercises as prescribed, answers questions, and provides emotional support (Hinkle & Cheever, 2018).

Radiation Therapy Nursing Care

For patients receiving radiation therapy, the nurse:

- Advises the patient to report a fever over 100 °F and burning or difficulty with urination, excessive bleeding or clots in the urine, or rectal bleeding
- Monitors for adverse skin changes and provides skin care for those receiving external beam radiation therapy, stressing the importance of maintaining skin integrity, including:
 - Cleansing the skin with mild soap and water
 - Promotion of comfort and pain reduction
 - Prevention of additional trauma
 - Prevention and management of infection
 - Promotion of a moist wound-healing environment
 - Avoiding application of lotions, perfumes, or powders to the treatment area
 - Protecting the skin in the treatment area from sunlight and extreme cold
 - Wearing soft, nonrestrictive cotton clothing directly over the treatment area

Patients who are receiving low-dose-rate brachytherapy with temporary implants must have limited exposure to others. If hospitalized, the patient should be placed in a private room, and visits with others should be limited to 10 to 30 minutes. Patients should be monitored for burning sensations, excessive perspiration, chills and fever, nausea and vomiting, or diarrhea.



For men who are discharged following permanent seed implantation, patient and family **education** includes:

- Avoid lifting anything heavy for a few days after being discharged.
 - Drink plenty of fluids for 2 days following the procedure.
 - Expect some blood in the urine for 1 to 2 days following surgery.
 - Expect some burning during urination or ejaculation for 1 to 2 days after surgery.
 - Observe for lost seeds in linens, and follow instructions about straining urine for lost seeds.
 - Do not pick up seeds using fingers; use tweezers or tongs to pick them up and place them in a container of water or wrap them tightly in aluminum foil, or into a special packet, if supplied.
 - If any seed is found, return it to a healthcare facility following the radiation safety instructions provided at discharge.
 - Avoid close contact with pregnant women and infants for up to 2 months.
 - Use a condom during sexual intercourse for 2 weeks after implantation to catch any seeds that pass through the urethra.
- (Hinkle & Cheever, 2018)

Patients are also informed that the seeds may set off airport security systems, and they should ask their providers for a card or letter that states one has the seeds in their body in order to show to security personnel.

CASE

George is a 68-year-old man who has recently been diagnosed with low-risk adenocarcinoma of the prostate. The urologist referred George and his wife to Margaret, the urology nurse, who provided them with detailed information about the treatment options that would be appropriate for him, including conservative management, and a discussion of the risks and benefits of each.

George and his wife went home to discuss the options and to make a decision about which one would be the best. The next day George contacted Margaret to inform her that they had decided to proceed with low-dose-rate permanent seed brachytherapy.

Before beginning brachytherapy, George and his wife met with the radiation oncologist, who requested an MRI in order to adapt the dose of radiation to George's anatomy, accounting for the position of organs at risk.

Under general anesthesia, seed implantation was performed with transrectal ultrasound



guidance using 31 needles containing stranded seeds and two needles containing single loose seeds. Following recovery from anesthesia, George was discharged the same day. George returned the following day for a CT of the pelvis, which located all of the seeds within the vicinity of the prostate.

After returning home, George began to experience burning on urination, which he had been told was an expected side effect. Along with the burning he also experienced urinary frequency, both of which gradually subsided. A week later, however, he again began experiencing frequency and pain that he described as “razor-sharp.” The frequency and pain began to seriously disrupt his sleep.

George called the urologist’s office and talked with Margaret, who told him to come in for a urinalysis and culture, both of which were negative for infection. The urologist gave him prescriptions for Pyridium (phenazopyridine), a local analgesic that has a specific effect in the urinary tract, and Flomax (tamsulosin) 0.4 mg twice a day. George obtained no relief from the use of Pyridium or Flomax, however, and after two more weeks with pain and not being able to sleep longer than 45 minutes at a stretch, his urologist performed a cystoscopy that indicated a stricture at the urethral/bladder sphincter. The urologist stretched the stricture and prescribed ibuprofen 800 mg per day.

When George continued to have the same severe burning pain and frequency following this procedure, the urologist placed a Foley catheter into the bladder, where it remained for 3 weeks to allow for healing. During this time, the pain subsided, and George was sleeping well.

Following removal of the catheter, Margaret taught George how to perform clean catheter intermittent self-dilation to prevent the stricture from returning. He was told that the urologist would determine when this was no longer necessary to perform. He was given an appointment for a follow-up visit and instructed to call if he had any difficulties or return of symptoms. On his return to the clinic four weeks later, George was urinating without pain and sleeping through the night.

Cryotherapy Nursing Care

Patients receiving cryotherapy may have the procedure done under general anesthesia and will require routine recovery monitoring, including vital signs and pain management.

When stabilized, ambulation should be initiated, and when the patient is ready for discharge, **education** is provided to the patient and significant others, including:

- Caring for the needle insertion sites
- Managing and caring for the urinary catheter and tubing and collection device (which may remain in place for about two weeks to allow for healing)
- Complete antibiotic regimen for prevention of infection as prescribed



- Possible bruising and soreness for several days at insertion sites
- Possible blood in the urine for several days
- Problems emptying bladder and bowels (which usually resolves over time)
- Bathing instructions per provider’s protocol
- Probability of sexual dysfunction, including impotence following treatment
- Importance of notifying the healthcare provider in the event of:
 - Fever and/or chills
 - Redness, swelling, bleeding, or other drainage from any needle insertion sites
 - Increase in pain around the insertion sites

Prior to discharge the patient is also given an appointment for follow-up (Hinkle & Cheever, 2018; Mayo Clinic, 2020a).

High-Intensity Focused Ultrasound Nursing Care

Patients undergoing high-intensity focused ultrasound will receive either epidural or general anesthesia and require monitoring during recovery, including assessing for perineal pain.

The patient will be discharged home with an indwelling urethral or suprapubic catheter that will remain in place until swelling subsides. The nurse provides the patient with **discharge instructions**, including:

- Caring for the catheter, tubing, and collection device
- Completing antibiotics as prescribed and reporting signs and symptoms of urinary tract infection or signs and symptoms of infection in the testicles

An appointment should be made for 7 days following discharge for removal of the catheter and a trial of voiding. For patients with urinary retention or insufficient voiding following catheter removal, clean intermittent catheterization may be indicated, which will require education and training (Bandukwala, 2020; Columbia University, 2020).

Hormone Therapy Nursing Care

Nursing care for those undergoing androgen deprivation therapy (ADT) involves helping patients address the adverse effects caused by hypogonadism. Nurses provide education about the options available for management of these effects as well as the support and care for options chosen.

Patients who experience **vasomotor flushing** (hot flashes) can be advised to:

- Wear cotton clothes



- Take warm baths or showers instead of hot
- Exercise regularly
- Avoid eating spicy foods
- Avoid alcohol and caffeine
- Avoid nicotine
- Avoid eating large meals
- Use a fan

ADT decreases bone density, which can result in osteoporosis and fractures, and it has been recommended that patients include supplementation with calcium and vitamin D. Patients are also encouraged to exercise in order to reduce loss of muscle mass, weight gain, fatigue, and metabolic syndrome (Hinkle & Cheever, 2018).

Gynecomastia is common in those undergoing ADT, and the patient is educated about options for prevention. Pretreatment with radiation or taking tamoxifen along with antiandrogen therapy are two options for preventing breast tissue growth. Treating the breasts with radiation before antiandrogen treatment can prevent gynecomastia in approximately 30% of men. Gynecomastia that has already developed can be treated with higher radiation doses and may improve mastodynia. Additional nursing care and management is the same as for patients receiving radiation therapy (discussed earlier in this course) and includes education about the importance of taking tamoxifen as prescribed for the duration of antiandrogen therapy (Braunstein & Anawalt, 2019).

Orchiectomy Nursing Care

Patients who have undergone orchiectomy may be discharged the same day or may be hospitalized overnight. They will have received general anesthesia, requiring routine **postoperative recovery** nursing care and monitoring, including vital signs, fluid administration, and pain management. Ambulation is encouraged following recovery from anesthesia.

At discharge, the nurse provides **discharge instructions** that include:

- Drink 6 to 8 glasses of fluids each day, if not contraindicated.
- Take pain medications as prescribed.
- Gradually return to a normal diet.
- Avoid straining to have a bowel movement.
- Eat a diet with foods high in fiber, and use laxatives, stool softeners, or enema only as directed by the provider.



- Wait to shower until the day after surgery; do not swim or use a bathtub or hot tub until after a follow-up appointment.
- Keep the incision clean and dry and covered in gauze for the first few days; wash the incision gently with mild soap and warm water when necessary.
- Wear an athletic supporter (jockstrap) for the first few days, and then wear supportive briefs rather than boxer shorts.
- Complete the antibiotic regimen as prescribed.
- Apply ice to the scrotum or around the incision to control bruising or swelling for 10 to 20 minutes every 1 to 2 hours while awake for 2 or 3 days post surgery.
- Avoid strenuous activities and lifting 10 or more pounds for 2 to 3 weeks.
- Return gradually to normal activities.
- Do not drive until free of pain and no longer taking narcotic pain medicines, which may take from 2 to 4 weeks.
- Avoid sexual activity for 2 to 4 weeks.
- Contact the provider if any of these occur:
 - Pus in the wound or purulent drainage or bleeding from the incision
 - Bad smell coming from the wound
 - Redness and swelling that does not improve
 - Pain that is not controlled or does not improve
 - Stitches that come apart
 - Fever of 100 °F or higher

(Baycare, 2021)

Following orchiectomy, a man may choose to have testicular **prostheses implants**, either solid silicone or saline-filled. The benefits of implants include:

- A similar appearance to that prior to surgery
- Improved self-image
- Relatively easy to remove if there are any problems
- Can be inserted immediately following surgery

Factors to consider following implantation include:

- Infection



- Shifting of the implant
- Possible hardening of the capsule around the implant (UCLA Health, 2021)

Immunotherapy Nursing Care

Immunotherapy may be administered in a provider's office, clinic, or hospital outpatient department. Treatments may be given every day, week, or month. Some types are given in cycles of treatment followed by a period of rest. The nurse's role when caring for a person receiving immunotherapy includes:

- Monitoring laboratory indicators for acute alterations in renal, cardiac, liver, or gastrointestinal functioning
- Evaluating the response to therapy by conducting a thorough evaluation of the patient's symptoms
- Assessing the patient's coping behaviors and teaching new strategies as needed
- Managing fatigue and depression
- Encouraging self-care and participation in decision-making
- Providing close supervision for patients with altered mental functioning
- Caring for a central line, if indicated, and assessing for signs of infection
- Monitoring peripheral intravenous site for extravasation
- During administration of sipuleucel-T, closely monitoring patients with cardiac or pulmonary conditions

The nurse also provides patient and family **education**, which includes:

- Ways to minimize flulike symptoms, including fever
- Managing back and joint pain
- Managing fatigue
- Seeking assistance for serious problems not managed by usual means, such as dehydration from diarrhea
- Notifying the provider if any of the following occur:
 - Light-headedness
 - Racing or irregular heartbeats



- Signs of infection
- Signs of stroke
- Signs of blood clot deep in the body or lungs

Education for patients who are receiving **pembrolizumab** include:

- Using condoms during treatment and for at least 4 months following treatment to avoid conceiving a child
- Taking no other medications, including over-the-counter and herbal preparations, without discussing first with one's healthcare provider
- Notifying the healthcare provider immediately, day or night, if any of the following occur:
 - Fever of 100.4 °F or higher
 - Signs of reaction to the drug
 - New or worsening cough, chest pain, or shortness of breath
 - Diarrhea or severe abdominal pain, especially right-side
 - Blood in stools or dark stools
 - Jaundice of the eyes
 - Persistent or unusual headache, extreme weakness, dizziness, fainting, or vision changes

(Prentice Hall, n.d.; Hinkle & Cheever, 2018; Chemocare, 2021; RxList, 2019)

Chemotherapy Nursing Care

The nurse recognizes that chemotherapy agents affect both normal and malignant cells; therefore, effects are often widespread, impacting many body systems. **Laboratory and physical assessments** of metabolic indices and the dermatologic, hematologic, hepatic, renal, cardiovascular, neurologic, and pulmonary systems are therefore critical in evaluating the body's response to chemotherapy. These assessments are performed prior to, during, and after a course of chemotherapy to determine optimal treatment options, evaluate the patient's response, and monitor toxicity.

Nurses also have the responsibilities to:

- Administer chemotherapy safely, including taking measures for the prevention of extravasation.
- Assess fluid and electrolyte status and identify creative ways to encourage adequate fluid and dietary intake. Risk factors for nutritional and fluid and electrolyte disturbance may include anorexia, nausea, vomiting, alteration in taste, mucositis, and diarrhea.



- Assess for pain. Chemotherapy-induced peripheral neuropathy (CIPN) may result from damage caused to nerves by certain types of chemotherapy agents. Associated pain can then result in a patient stopping treatment if it is not well managed. Management of CIPN may include steroids, lidocaine patches, capsaicin cream, antidepressants, anticonvulsants, or opioids/narcotics.
- Assess for cancer treatment–related cognitive impairment, mental clouding, or foggiess (“chemo brain”). Chemotherapy can cause both short- and long-term cognitive problems, most noticeable during and after chemotherapy, especially with high doses. Encouraging regular aerobic exercise is helpful for alleviating the symptoms, as is using memory aids such as calendars or note taking. Certain medications may also be recommended and prescribed.
- Assess for emotional and spiritual issues. Patients who are in distress can be helped by different kinds of emotional, social, and spiritual support such as relaxation training, mental health counseling, spiritual counseling, and support groups.
- Assess for signs and symptoms of infection. Lowered white blood cell count increases the risk for infection.
- Educate the patient to use a condom when having intercourse for the first 48 hours after treatment to protect the partner. Depending on the type of chemotherapy agent, it may also be recommended that the patient avoid sexual activity until white blood cell counts rise to safe levels.
- Teach safe handling of chemotherapy drugs by family caregivers. Educate patients and caregivers about oral chemotherapy safety in the home setting, stressing health risks for caregivers with unintended exposure to oral chemotherapy medications and the critical importance of strictly following administration instructions.
(ACS, 2021f; Becze, 2020; Giridhar, 2021)

Radiopharmaceutical Nursing Care

Nursing care for the patient receiving radium-223 (Xofigo) therapy centers on **education**. Patients are provided the following information:

- Take radiation protection precautions because there are potential risks to others from radiation or contamination from spills of body fluids such as urine, feces, or vomit.
- Practice good hygiene; excretion is predominantly through the feces, and smaller amounts are excreted through the urine.
- Remain compliant with lab appointments one week prior to treatment for hematologic evaluations.
- Use a condom if sexually active; female partners of reproductive age should use a highly effective birth control method during and 6 months following completion of treatment.
- Stay well-hydrated and report any signs of dehydration, hypovolemia, urinary retention, or renal failure to the physician.
(Stancel & Searfoss, 2019)



MANAGING LONG-TERM POST-TREATMENT SEQUELAE

Nursing interventions can improve the long-term health status and quality of life of patients who have undergone treatment for cancer. Nurses play a vital role in providing direct care and education and in helping patients cope more effectively with post-treatment sequelae such as psychological distress, chemotherapy long-term effects, urinary problems, and bowel dysfunction.

Psychological Distress

For many patients and families, cancer is a fatal disease that always involves pain, suffering, debilitation, and emaciation, and patients typically experience varying levels of psychological distress. Left unaddressed, serious anxiety, depression, or other types of psychological distress may leave cancer survivors unable to tend to their needs.

Each person's post-treatment experience is different. Some will struggle with negative emotional reactions, and others say that they have a renewed positive outlook on life because of the cancer. Cancer survivors often have reactions such as:

- Fear of recurrence
- Anger
- Guilt
- Depression
- Anxiety
- Feeling alone
- Concerns about family and finances
- Changes in body image and sexuality
- Loss of control and independence

Fear of recurrence is the most common emotional difficulty that people say they have after completing cancer treatment. A certain amount of anxiety is normal, but for some it can become debilitating.

Patients require support in managing various sources and levels of distress. Nurses must assess patients for psychological distress over the entire course of the patient's cancer experience, including assessing for positive or maladaptive coping behaviors, interpersonal communications, and evidence of the need for additional psychosocial support or interventions, such as referral for professional counseling.

Basic steps the nurse can take include:

- Assessing and screening for signs of anxiety



- Ensuring open communication in an environment that is appropriate for a discussion about psychological concerns
- Preparing to refer patients to mental health specialists or support services as deemed appropriate
- Remaining knowledgeable about current evidence-based principles

Approaches that have been shown to be helpful for **managing anxiety and distress** include:

- Cognitive behavioral therapy
- Mindfulness-based stress reduction, including acceptance and commitment therapy
- Self-management
- Exercise
- Antianxiety or antidepressant medications

Support groups have also been shown to be helpful. While the logistics of organizing them can be challenging, the growth of online support groups for survivors of diverse cancer types and treatments has made these resources accessible for many more people.

The nurse also helps strengthen patient and family confidence to explore preferences for issues related to end-of-life care, such as withdrawal of active disease treatment, desire for the use of life-support measures, and symptom management (Hinkle & Cheever, 2018; NCI, 2020).

Alopecia

Most people undergoing chemotherapy experience loss of hair (alopecia) that tends to begin 1 to 2 months into treatment. How much hair is lost depends on the medication and dose. Most people will see some thin hair growth a few weeks following treatment cessation. Real hair may begin to grow back within 1 to 2 months. Research finds, however, that people also experience permanent hair loss.

Although healthcare providers may view hair loss as a minor issue, for many patients it is a major assault on their body image, challenging their self-esteem and resulting in psychological distress. Alopecia is a symbol to nearly everyone around the patient that they have cancer, and both men and women indicate that hair loss is one of the side effects they dread the most. Men are concerned about loss of hair on the head as well as other areas of the body, such as the chest. Men may be especially concerned about how this will affect them in their workplace.

The nurse can provide information about steps to minimize frustration and anxiety associated with hair loss. A helpful intervention might include preparing for hair loss before any has occurred by cutting it shorter. Coworkers may become used to seeing a shorter style, so when hair loss occurs it will not be so dramatic.



Because hair loss can occur in clumps, a buzz cut might be considered. With a buzz cut, however, the person should be prepared for the potential reactions of others. A newly shaved head may not be a problem in public, where this style has been adopted by many men, but in social, family, and work circles, the look may evoke questions and concerns.

After treatment ends, means to help coax the regrowth of hair include:

- Massaging the scalp with fingertips, which increases blood circulation to the scalp
- Using over-the-counter topical remedy for hair regrowth (after consulting with one's healthcare provider)
- Using a gentle, moisturizing shampoo

Hair may not look or feel the same as it was prior to therapy until up to a year and a half after treatment ends (Cancer and Careers, 2021; Mayo Clinic, 2021c; Hinkle & Cheever, 2018).

Urinary Problems

Treatment for prostate cancer can result in urinary problems, including incontinence and retention. The five years following a prostatectomy are associated with worse incontinence compared to other forms of treatment, regardless of cancer risk group. Those receiving brachytherapy have a more difficult time with urinary and bowel symptoms during the first year (Hoffman et al., 2020).

Urinary incontinence as a result of cancer treatment may be short- or long-term. It can be uncomfortable, frustrating, and embarrassing for the patient to cope with. The highest rate of occurrence is during the first month following treatment. Stress and urge incontinence are common, with stress incontinence being the most common. Some men with severe stress incontinence have nearly constant urine loss (total incontinence).

Urinary incontinence usually improves with time. Most men start to see an improvement 1 to 6 months after treatment. Other men are incontinent for a year or more, and some men never fully recover, even if they have treatments to help their incontinence.

Nursing intervention has been shown to have significant beneficial effects on urinary function at 3 and 6 months after discharge. The nurse can encourage the person to take steps to prevent incontinence, improve continence, anticipate leakage, and cope with lack of complete control.

Most often, the first treatment recommended for regaining bladder control is **bladder retraining**, a type of behavioral therapy that helps the person regain control over urination. Bladder control retraining gradually teaches the person to hold urine for longer and longer periods of time by scheduling bathroom visits; performing Kegel's exercises to strengthen the muscles used to start and stop the flow of urine; and biofeedback therapy, a form of pelvic floor muscle physical rehabilitation that uses a small electronic device to help the patient learn to control urine.



Management options depend on how much urine is being leaked, and they include:

- Absorbent pads and pants (washable and disposable)
- Bed protectors
- Urinary sheaths and drainage bags
- Bed protectors
- Handheld urinals to allow quick access for urge incontinence or frequency
- Penile clamps (If using a penile clamp, the patient is informed that it is an uncomfortable option and that the clamp must be opened at least every two hours to allow blood to flow back into the penis.)
- Carrying extra clothing in case of urinary accidents, which improves confidence when restroom access is limited
- Maintaining a healthy weight (Extra weight can put pressure on the bladder and the muscles that support it.)
- Avoiding foods that can irritate the bladder, such as dairy products, citrus fruits, sugar, chocolate, soda, tea, and vinegar
- Quitting smoking (Nicotine can irritate the bladder and cause the person to cough and leak urine.)
- Increasing voiding frequency and avoiding positions that encourage the urge to void

It is important to let the patient know that regaining urinary control is a gradual process; he may continue to “dribble,” but this should gradually diminish, usually within one year (Hinkle & Cheever, 2018; Wang et al., 2018; PCUK, 2021a; ASCO, 2021c).

MEDICATIONS

Antispasmodic medications may be prescribed to decrease involuntary bladder contractions, improve urinary flow, and control urgency, pain, and leakage. Commonly prescribed medications include:

- Tamsulosin (Flomax)
- Terazosin (Hytrin)
- Tolterodine (Detrol, Detrol LA)
- Solifenacin (VESIcare)
- Oxybutynin (Ditropan, Ditropan XL)



Another medical treatment option is to temporarily paralyze the bladder muscle with botulinum toxin (Botox, Dysport). This medication is injected into the bladder muscle to help muscles relax, thereby giving the patient more time to get to the bathroom when feeling the need to urinate. Most people obtain symptom relief quickly, in as short as a few days. The treatment results last about six months, and repeat injections can be given. One possible side effect is urinary retention (Mayo Clinic, 2019a).

Patients are educated about the benefits and harms of each medication and when to contact their provider due to **side effects**. These may include:

- Severe stomach pain or constipation
- Blurred vision, tunnel vision, eye pain, or seeing halos around lights
- Decreased urination and anuria
- Dysuria
- Dehydration symptoms
- Dry mouth, constipation, and confusion (more likely in older adults)
- Chest pain
- Hallucinations
- Cardiac irregularities
(Mayo Clinic, 2020b)

NONSURGICAL INVASIVE PROCEDURES

Nonsurgical invasive procedures for incontinence include collagen injections, percutaneous posterior tibial nerve stimulator, and sacral neuromodulation.

Collagen Injections

Collagen injections are a minimally invasive procedure to add bulk to the urinary sphincter, creating a seal that stops urine from leaking by thickening the urinary sphincter. This may be the best option as a temporary measure or as an option for men who are unwilling or unfit to undergo invasive surgery. Success may diminish over time as bulking agents are absorbed into the body (Gill, 2018).

Percutaneous Posterior Tibial Nerve Stimulator (PTNS)

PTNS is a procedure in which a small electrode is passed through the skin of the ankle near the tibial nerve. The electrode is connected to a pulse stimulator outside the body. The stimulator sends pulses to the electrode to stimulate the tibial nerve, which then travels to the nerve roots in the spine to block abnormal signals from the bladder and prevent bladder spasms.



There have been no major side effects reported with the use of PTNS, and patients describe the sensation during treatment as pulsing or tingling in the foot. Each PTNS treatment takes about 30 minutes, and the patient is required to commit to 12 weekly follow-up sessions with their provider at the beginning, and then monthly thereafter to sustain improvements (PCUK, 2021a; University of Colorado, 2021).

Sacral Neuromodulation (SNS)

When other treatments fail or cannot be tolerated, sacral nerve stimulation may be an option. The sacral nerve is involved in controlling bladder, bowel, and pelvic floor muscles. The SNS procedure entails implanting a small pacemaker-like device in the fleshy part of the buttocks, with a thin wire extending into the area near the sacral nerve through which low voltage pulses are delivered. The procedure is performed in the hospital under light anesthesia. The device's battery last about five years and requires surgery to replace (NYU Langone, 2021).

SURGERY

Surgical options may be considered if the patient continues to experience incontinence 6 to 12 months after treatment and when other methods have been unsuccessful. Surgical procedures include an internal male sling, artificial urinary sphincter, or adjustable balloons.

Internal Male Sling

This device is a synthetic mesh-like tape that is placed around the urethral bulb, compressing and moving the urethra into a new position to increase pressure on the urethra to keep it closed and to stop urine from leaking. The procedure requires surgery under general anesthesia in order to fit the sling. This procedure may be an option for patients who leak a moderate amount of urine (two to three pads per day) one year after treatment for prostate cancer. The sling may not work as well if the patient was treated with radiation therapy, however.

Side effects of this procedure may include:

- Pain in the first three months following the procedure
- Infection (causing about 1 in 10 men to have the sling removed)
- Problems with urine retention (not very common)

(PCUK, 2021a)

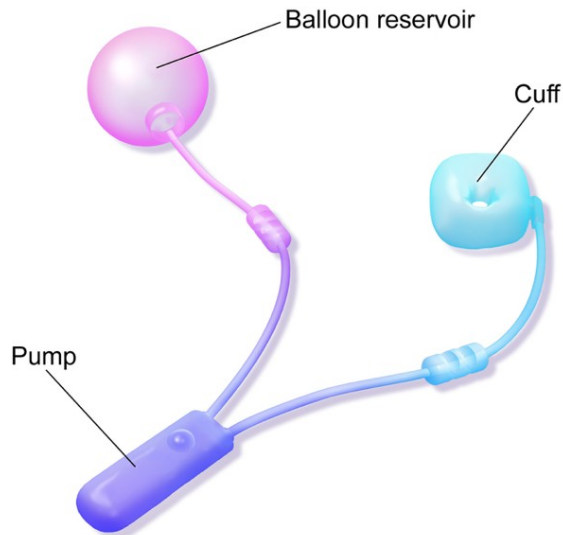
Artificial Urinary Sphincter

Considered the gold standard of therapy for severe urinary incontinence following prostate cancer surgery, an artificial urinary sphincter involves surgery under general anesthesia to fit a small device that consists of:

- A fluid-filled cuff that fits around the urethra



- A balloon in front of the bladder
- A pump implanted in the scrotum



Artificial Urinary Sphincter

(Source: Blausen Medical, 2014.)

The cuff presses the urethra closed to prevent urine leakage, allowing the patient to control when he urinates. To urinate, the patient squeezes the pump in the scrotum, which moves the fluid out of the cuff and into the balloon. When the cuff is empty, the urethra opens and urine is allowed to pass through. After a short delay, the fluid flows back into the cuff to press the urethra closed again.

Postoperatively, it may take 4 to 6 weeks to heal, during which time the pump cannot be activated, and additional adjustment surgeries may be necessary.

This procedure is usually done only for men who are still incontinent at least 6 months following their treatment for cancer. **Risks** for this procedure include infection, erosion of tissue around the implants, and breakage of parts of the device. Some men will need another operation to fix problems, and some men may need their device removed (PCUK, 2021a).

Adjustable Balloons

Adjustable balloons involve surgery to place two small fluid-filled balloons around the urethra. The balloons press on the urethra to stop urine leakage, but the patient should still be able to urinate when he chooses. Each balloon contains fluid and is attached to a device (port) placed in the scrotum. The physician can use these ports to make the balloons bigger or smaller at any time in order to increase or decrease pressure on



the urethra.

Risks include infection, shrinking, or moving of the balloons. Balloons are an option for incontinence lasting more than six months after surgery, but they are not an option for those who have had radiotherapy (PCUK, 2021a).

Bowel Dysfunction

Bowel dysfunction following prostate cancer treatments may include diarrhea, frequent stools, fecal incontinence, and rectal bleeding. Altered bowel function is not common (<1%) in men following prostatectomy. In rare cases of locally advanced prostate cancer where the cancer has invaded the rectum, surgery may result in rectal damage (PCF, 2021e).

Radiation therapy can cause significant damage to the rectum, leading to **symptoms** such as:

- Diarrhea
- Increased flatulence
- Urgency
- Feeling that bowels have not emptied properly
- Pain in the abdomen or rectum
- Bleeding from the rectum (rare)
- Thick and stringy mucus discharge
(PCUK, 2021b)

During radiation therapy the patient may experience softer stools and, occasionally, diarrhea (<10% of men). These symptoms typically resolve within a few weeks following completion of radiation therapy. Rarely, however, symptoms can persist (or even begin) months to years after treatment ends. After two years, about 20% of men report having persistent diarrhea a few times each week, while rectal bleeding can increase from 5% immediately after treatment to 25% after 2 years.

Rectal pain and bleeding can also develop even months to years after completing radiation treatment. This may be related to scar tissue that does not stretch as well as normal tissue and can tear and bleed with bowel movements or with hard stools (PCUK, 2021b; Johns Hopkins Medicine, 2021c).

There are few, if any, **treatment options** for bowel dysfunction following radiation therapy. Laser therapy can be of some help in stopping rectal bleeding. Antidiarrheal agents, such as over-the-counter medicines (Kaopectate, Imodium, Lomotil), can be recommended to help with loose bowel movements, as well as increasing fiber intake through whole grains, fruits and vegetables, or fiber supplements.

Other helpful measures include:



- Eating five to six small meals a day instead of three large meals
- Eating foods at room temperature (very hot and cold foods can irritate the bowels)
- Eating slowly so as to swallow less air
- Avoiding very spicy, fried, greasy, or fatty foods
- Avoiding most milk products if sensitive to them
- Avoiding foods that cause increased flatus (e.g., cabbage, broccoli, cauliflower)
- Drinking at least 8 to 10 glasses of water each day
- Limiting caffeine, which can irritate the bowel and cause fluid loss
- Reducing or eliminating alcohol and tobacco
- Not chewing gum
- Decreasing and managing stress
- Taking over-the-counter stool softeners (PCUK, 2021b)

BOWEL PROBLEMS AND ANAL SEX

If the patient is a receptive partner during anal sex, then bowel problems after radiotherapy may be a particularly difficult issue. It is important to discuss a patient's sexual preferences in order to provide the most appropriate and helpful support, guidance, education, and counseling. For those who have bowel problems or a sensitive anus following radiation therapy, it may be recommended that they wait until these have settled before engaging in anal sex (PCUK, 2021c).

Sexual Dysfunction

There are four main components of sexual dysfunction that may be affected by prostate treatment:

- A **decline in libido** (sex drive) is most common in those who have received hormone therapy. Even though the patient may still obtain an erection, it is more difficult when there is less interest in sexual activity. Libido normally returns once the testosterone level normalizes after treatment is completed. For many patients and their partners, this can be a major concern, and couples counseling should be considered when it is causing stress in the relationship.
- **Mechanical ability** is the ability to achieve a firm erection and is controlled by nerves and vessels closely associated with the prostate and structures near the penis. Mechanical ability is most affected by surgery or radiation therapy.



- **Orgasm/climax** may be difficult to achieve after treatment, especially in the presence of low libido or when erections are not firm enough. Discomfort with orgasm may be experienced initially after treatment; it is transient and should resolve. Men will continue to have the pleasurable sensation of orgasm without ejaculation.
- **Ejaculate** will be minimal or absent after treatment. The prostate and seminal vesicles that produce ejaculate are removed and/or irradiated during treatment. This results in minimal to no ejaculate.

(PCF, 2021f)

PREVALANCE OF SEXUAL DYSFUNCTION

The most common side effects following prostate cancer treatment are sexual dysfunction related to the inability to get or sustain an erection, decreased libido, and fatigue. **Erectile dysfunction (ED)** remains the most common side effect after treatment. About 60% of men report having erectile dysfunction 18 months after surgery, and fewer than 30% have erections firm enough for intercourse after 5 years (AECM, 2021).

Studies have shown that approximately 50% of men who had the ability to have an erection prior to surgery will maintain this ability long-term as a result of “nerve sparing” prostatectomy. In those with high-risk cancer, however, it is often more difficult to spare the nerves, as the tumor may have spread outside the prostate capsule. Erectile function is then lower than average.

Radiation therapy has less impact on erectile function in the first 5 to 10 years after treatment compared with surgery, and approximately 70% of men who have baseline erectile function before treatment will keep that ability after treatment. The rate of erectile function decline in those who received radiation therapy, however, is slower than with surgery, and 15 years after treatment, the rates are similar to those who underwent surgery (PCF, 2021f).

Men given androgen deprivation therapy (ADT) have the worst rates of sexual dysfunction since irreversible damage may occur to the erectile tissue in the penis. Serum testosterone requires 9 to 12 months off ADT to recover; however, about one half of men do not recover the ability to achieve an erection. This is difficult to treat except with penile prosthesis implant surgery. Although ADT is harmful to sexual function, many patients do maintain an interest in sexual activity. One factor that has been found to play a role is keeping an emotional connection with a partner (Fode et al., 2020).

ADDRESSING THE PATIENT’S SEXUAL ISSUES

Sexual issues may become a concern to the patient soon after or within the weeks to months following treatment, requiring assessment and open discussion with the patient about these issues and how they can be managed. Many patients and their partners report that they were not informed about sexual side effects before treatment, or, if they were informed, that they didn’t retain enough to fully understand them (Dubin et al., 2020).



Body image, self-esteem, sexual dysfunction, and intimacy are difficult topics for patients and their partners, and this affects their willingness to openly discuss them. Nurses must be knowledgeable and comfortable with the topic, including religious implications, cultural norms, gender differences, and sexual preferences. The nurse’s awareness and proactive role in addressing concerns can greatly affect the patient’s quality of life and psychosocial well-being.

Sexual issues should be addressed early in the treatment process, and a sexual assessment will identify a baseline against which post-treatment changes can be measured. Along with the assessment, the nurse provides education regarding long-term effects on sexuality (Grier, 2018).

Within the multidisciplinary team, nurses especially play a key role in the presentation of sexual health counseling. However, healthcare provider assessment of patients’ sexual health is often superficial. It is a difficult and delicate topic for many, but it is imperative to assess patients in a matter-of-fact and sensitive manner. **Barriers to effective communication** reported by nurses have included:

- Conflict with the nurse’s personal values and beliefs
- Lack of education in effectively communicating about the topic
- Nurse’s feelings of discomfort with sexual topics viewed as “taboo”
- Fears about the patient’s reaction
- Feeling that this component of health is not necessary or pertinent to patient care
- Negative attitudes and beliefs of nurses toward LGBTQ+ (lesbian, gay, bisexual, transgender, queer/questioning, and others) individuals

Other studies have found that when confronted by patients’ sexual problems, nurses felt ill-prepared to develop a care plan for them, expressing concerns that their education regarding sexual health pertained only to contraception, maternal health, reproduction, fertility, and sexually transmitted infections—all generally concerns of younger individuals. Often older adults’ sexuality is ignored due to the misconception that they no longer participate in sexual activity.

The **PLISSIT model** is one tool developed to assist nurses and other healthcare professionals in addressing patients’ sexuality issues. This tool provides four levels of intervention that should take place in a private, quiet environment that ensures patient comfort.

PLISSIT MODEL		
P	Permission	Give the patient permission to talk about feelings and ask questions.
L I	Limited Information	Offer limited or basic information and resource materials to dispel myths and provide facts.
S S	Specific Suggestions	Suggest guidance on possible management options for the patient’s specific problems; this requires a deeper level of expertise on the part of the nurse.



I T	Intensive Therapy	Identify need for further support/therapy and make appropriate referrals.
(Culp, 2020; Agochukwu & Wittman, 2019)		

ADDRESSING LOSS OF LIBIDO

Libido plays a major role in many individual’s concept of manhood. Before prostate cancer treatment, a patient may have experienced a number of triggers that resulted in sexual desire and arousal:

- Sight: Seeing someone or something that “turns them on”
- Sound: Certain sounds or sex talk
- Fantasy: Using the imagination to think about sexual experiences
- Memory: Recalling prior sexual experiences
- Smells: Certain smells associated with past sexual experiences
- Words: Reading about sexual encounters
- Touch: Certain forms of touching

After prostate cancer treatment, however, men may lose their capacity to respond to any and all of these triggers, leading to feelings of loss, disappointment, frustration, anger, and shame. Couples may respond negatively when their pre-cancer treatment sexual activities are no longer accessible, and very often men withdraw emotionally and physically from their partners, resulting in high levels of stress.

When providing support for the patient who is experiencing this loss, it must be stressed that regaining one’s libido takes time, effort, and new experiences in order to reprogram mind and body to experience arousal in completely different ways than before. It is important to encourage the patient to talk with his partner about how he is feeling.

It is also helpful to talk about ways to enjoy a fulfilling sexual relationship without performing the act of intercourse. Hugging, cuddling, and kissing can be comforting and assist in relaxation, and touching in a nonsexual way can demonstrate dedication to the relationship. Some men find that feeling relaxed and having these other types of physical contact can gradually result in becoming aroused.

Patient education also includes information about support groups as valuable ways to meet people who are sharing the same experiences and who may have suggestions to share on how to manage issues around sexuality. It may also be helpful to refer the patient and his partner to a counselor or therapist, either separately or together, for specialized assistance (Island Sexual Health, 2021; Cancer Research UK, 2019).

TREATMENT STRATEGIES FOR ED



Treatment strategies for erectile dysfunction include oral and injectable medications, urethral suppositories, penile implants, and negative-pressure vacuum devices.

Oral Medications

PDE5 inhibitors are the first line of treatment for erectile dysfunction. These drugs relax smooth muscle, causing blood to flow into the penis. They are taken 30 to 60 minutes orally before intercourse. An erection can last 1 hour, and stimulation is required to achieve erection. Complications include priapism (a persistent abnormal erection). These medications include:

- Sildenafil (Viagra)
- Vardenafil (Levitra)
- Tadalafil (Cialis)
- Avanafil (Stendra)

Most men taking these medications are not bothered by **side effects**. When they occur, however, they can include:

- Flushing
- Headache
- Indigestion
- Visual changes, such as blue tinge, vision sensitivity to light, or blurred vision
- Stuffy or runny nose
- Back pain

All four medications listed above may sometimes cause priapism. If a person experiences an erection that lasts for more than 4 hours, they should seek medical attention to avoid lasting damage.

In rare cases, these drugs can cause serious side effects including sudden loss of vision in one or both eyes or sudden hearing loss. In these instances, the person should be told to stop taking the drug immediately and contact their provider.

These medications are **contraindicated** for use in those who:

- Take nitrate drugs such as nitroglycerine, isosorbide mononitrate, and dinitrate
- Have hypotension or uncontrolled hypertension
- Have severe liver disease
- Have kidney disease requiring dialysis



(Mayo Clinic, 2021c; Hinkle & Cheever, 2018)

Injectable Medications

Peripheral vasodilators are generally prescribed only if oral ED medications are ineffective or not well tolerated. These medications are self-administered injections into the penis and exert their effect directly on the smooth muscle of the corpora cavernosa. They include:

- Alprostadil (Caverject, Edex), also available in urethral suppository form
- Papaverine
- Phentolamine

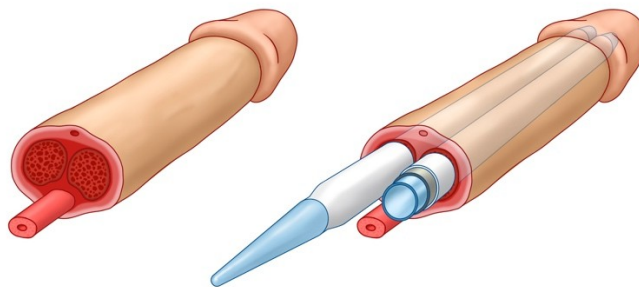
An erection should follow within 5 to 15 minutes; however, some men may need sexual foreplay to achieve an erection. Erection can last up to 1 hour. These medications may also be given in combination form, including BiMix (papaverine and phentolamine) and Trimix (all three medications) (Hinkle & Cheever, 2018; Kim, 2020; Honig, 2019).

Penile Implants

Two general types of penile implants are available: 1) a malleable, noninflatable, semirigid rod and 2) an inflatable, hydraulic prosthesis.

The **semirigid rod** is made of soft silicone. It is surgically implanted into the corpus cavernosum of the penis, and healing takes up to 3 weeks. Semirigid rod implants result in a permanent semi-erection but can be bent into a position that is not noticeable.

The **inflatable prosthesis** simulates natural erections and natural flaccidity. This prosthesis involves a 1- to 2-hour procedure in which inflatable cylinders are implanted inside the shaft of the penis, a fluid reservoir is implanted under the abdominal wall (depending on the type of device), and a pump is implanted inside the scrotum. When the patient desires an erection, the pump is squeezed and fluid is sent to cylinders in the penis, creating an erection. Saline returns from the penile receptacle to the reservoir.



Inflatable penile implant inserted into the corpus cavernosum of the penis. (Source: Hovhannes Karapetyan / Wikimedia Commons, Creative Commons License BY-SA 4.0.)

Complications following implantation may include infection, erosion of the prosthesis through the skin, and persistent pain necessitating removal. Ongoing counseling is normally necessary to help the patient and his partner adapt to the prosthesis (Hinkle & Cheever, 2018; Mayo Clinic, 2019b).

Vacuum Devices

Negative-pressure vacuum devices induce an erection using a plastic cylinder placed over the flaccid penis and a hand- or battery-powered pump to apply negative pressure. A constriction band is then placed around the base of the penis to maintain the erection.

Advantages for use of this device include less risk of side effects or complications than any other erectile dysfunction treatments. It is noninvasive and can be used along with other treatments. However, it is cumbersome to use before intercourse, and some men experience a feeling of trapped semen, making ejaculation painful. Patients must be cautioned that the constriction band must not be left in place for more than 1 hour in order to prevent penile injury (Hinkle & Cheever, 2018; Mayo Clinic, 2020c).

CASE

Deion is a 45-year-old man who has returned to the oncology clinic for his six-month follow-up visit after being treated for prostate cancer. He is meeting with Richard, the oncology nurse, to discuss how he has been doing and to address any concerns he might have.

Richard: “It’s good to see you, Deion. Tell me how you’ve been getting along since we last saw you?”

Deion (smiling): “Oh, I’m doing great. I’m pretty much back to my old self.”

Richard: “Are you eating well? Sleeping well? Pain-free?”

Deion (enthusiastically): “Oh, yes. I’m doing really well!”

Richard: “Are you having any problems urinating, like burning or having to go often?”

Deion: “No. Everything seems to be working okay.”

At this point Richard opens up the topic of sexual matters using the PLISSIT model.

Richard (asking **permission**): “Deion, I want to discuss some matters that might be of concern to you. One in particular is to ask if you’re having any sexual concerns and if you’d like to talk with me about them.”



Deion: “What do you mean?”

Richard: “What I mean is, do you and your partner have any worries or concerns about how things are going sexually?”

Deion (looking at the floor): “Well, as a matter of fact, I can’t get it up anymore, and so it’s not so good.”

Richard: “You haven’t been able to have an erection, is that it?”

Deion: “Yeah. You know, I was told this might happen, but I didn’t really think it would. I don’t feel like a whole man anymore, so ... I try not to think about it too much, and I don’t even talk about it anymore. No matter what Felicia and I have tried, nothing works, so we just gave up.”

Richard (providing **limited information**): “It’s normal to feel sad, frustrated, and angry about this kind of thing. Remember when we first discussed the risks of having surgery, we talked about what side effects might occur and we discussed the fact that there are things that can be done to help with erection problems. Do you remember?”

Deion: “Sure, I remember talking about it, but I didn’t really think that it would happen to me, so I didn’t pay too much attention.”

Richard (offering **specific suggestions**): “Well, Deion, let me tell you what kinds of treatments are available for men who are having problems getting erections.”

Richard gives Deion a brief description of different treatments for erectile dysfunction and asks Deion if he has any questions or concerns.

Deion pauses and then replies: “Well, I wonder if the little blue pill would work for me. That sounds like the easiest of those choices.”

Richard (offering **intensive therapy**): “Well, I’ll bring in Dr. Huang, and we’ll see if he thinks that would be a good place to start. I’ll be right back, and we can discuss that option with him then.”

Richard and Dr. Huang enter the room. After a brief examination, Dr. Huang asks how Deion is doing. Dr. Hague says that Richard has informed him of his desire to try an oral medication for his erectile dysfunction. Deion agrees that he would like to give it a try, and so Dr. Huang writes him a prescription for Viagra.

Before the visit ends, Richard also tells Deion that individual and couples counseling is also available, and that if he and Felicia are interested, a referral can be made. Deion says he’ll talk with his wife and get back to Richard, saying, “It probably would be a good idea.”



Metastatic Cancer Concerns

Prostate cancer commonly metastasizes to bones and less commonly to the lungs, liver, or brain. Men with metastasis may or may not have symptoms depending on the size of the new growth and where the cancer has spread in the body. Learning that the cancer has spread or come back can be a very difficult thing to face and requires supportive care. The treatment options focus on slowing the spread of cancer and relieving pain.

The typical goal of treatment for cancer is a cure, but with metastatic cancer, cure may not be a realistic goal. When cure is not the **goal of treatment**, the goal becomes to help a person live as well as possible for as long as possible. This involves:

- Having the fewest possible side effects from the cancer
- Having the fewest possible side effects from the treatment
- Having the best quality of life
- Living as long as possible with the cancer
(ASCO, 2021d)

Metastatic cancer is usually more difficult to treat. Treatments can control and slow the growth of metastases, but they usually do not go away completely. **Treatments** may include chemotherapy and other drug therapies, radiation therapy, surgery, and ablation. Supportive or palliative therapies may also be offered in combination with these treatments to help manage or prevent problems caused by the cancer and treatment (CCS, 2021).

MANAGING BONE METASTASIS

The symptoms of bone metastases vary depending on which bones and how many bones are affected. **Pain** is the most common symptom and usually the first to appear. Bone pain can come and go, it can be constant, and it is often worse at night. Pain may occur in only one area, or it may spread throughout the body. The character of the pain can be sharp or a dull ache. Various medications and treatments can be offered to control pain. Complementary therapies can also bring relief, including acupuncture, acupressure, hypnosis, massage, and relaxation techniques (UM, 2020).

Other **indications** of bone metastases include fractured bones, most often the ribs, vertebrae, and long bones of the legs. Bone metastases can also result in the following conditions requiring emergency management:

- **Hypercalcemia:** Symptoms include constipation, loss of appetite, nausea, urinary frequency, extreme thirst, and confusion.
- **Spinal cord compression:** This can be caused by vertebrae damage from bone metastases. Symptoms include loss of balance, weakness or numbness in the legs and sometimes arms, and urinary and bowel incontinence.



Treatment options for bone metastases include radiation therapy and **bisphosphonates** (the gold standard). Cancer cells release proteins that interfere with the normal bone shaping process and stimulate the osteoclasts that break down bone. This results in bone being destroyed faster than it can be rebuilt. Bisphosphonates block osteoclasts and allow bone to again be rebuilt. The most common bisphosphonates used include:

- Alendronate (Fosamax), a weekly pill
- Risedronate (Actonel), a weekly or monthly pill
- Ibandronate (Boniva), a monthly pill or quarterly intravenous (IV) infusion
- Zoledronic acid (Reclast), an annual IV infusion

Another common osteoporosis medication is denosumab (Prolia, Xgeva). Unrelated to bisphosphonates, denosumab might be used by people who cannot take a bisphosphonate, such as those with reduced renal function. This medication is administered by subcutaneous injection given every six months. This medication may need to be taken indefinitely unless the patient is transitioned to another medication, as research indicates there is a high risk of spinal fractures after stopping the drug (Mayo Clinic, 2021d).

MANAGING LIVER METASTASIS

Liver metastasis is a chronic condition that may result in loss of appetite, pain, ascites, and fatigue.

Loss of appetite can be managed by:

- Eating small meals and snacks at regular times throughout the day
- Serving food cold or at room temperature to reduce strong tastes and smells
- Eating foods high in calories and protein
- Utilizing commercial nutrition products

Ascites can be the result of blocked lymphatic channels and direct production of fluid into the peritoneal cavity by highly active cancers. Extensive hepatic metastases can also result in portal hypertension (CCS, 2021). Treatments for ascites may include:

- Diuretics
- Paracentesis
- Drainage catheters
- Vascular shunts
- Infusion of warmed chemotherapy into the peritoneal cavity (LeBlanc & Arnold, 2021)



MANAGING LUNG METASTASIS

Metastatic lung cancer causes **dyspnea**, which can be the result of:

- A tumor blocking or narrowing an airway
- Pressure on structures outside an airway
- Pleural effusion
- Anemia
- Anxiety and stress
- Hypoxemia

Treatments for patients with lung metastasis include:

- Oxygen therapy
- Bronchodilators
- Anti-anxiety medications
- Stent placement
- Thoracentesis for pleural effusion
- Relaxation and breathing exercise (CCS, 2021)

MANAGING BRAIN METASTASES

Metastasis to the brain can result in **neurological problems**. Depending on which part of the brain is affected, these problems may include:

- Ataxia
- Myasthenia
- Poor balance and coordination
- Loss of memory and concentration
- Confusion



- Changes in mood and behavior
- Dysarthria
- Dysphagia
- Dysphasia
- Vision problems

Neurological problems can lead to stress and anxiety about losing one's sense of self as well as independence. Some treatments and supportive therapies can help manage and control these problems, including referral to occupational therapy.

The main focus of **treatment** for brain metastasis focuses on reducing pain and symptoms resulting from the cancer. Treatments may include:

- Surgery
- Radiation therapy
- Chemotherapy
- Immunotherapy
- A combination of treatments

Other treatments might be recommended in different situations (Mayo Clinic, 2020d).

Managing End-Of-Life Care

Talking about end-of-life care can be very difficult for patients and families. At some point, the patient with advanced cancer, their family, and providers may face the decision of whether or not to continue therapy with intent to be cured.

Palliative care can be offered at any stage of illness and is most often associated with advanced disease. Nurses are key members of the palliative team that focuses on maintaining and improving quality of life. Cure is not the goal with palliative care; instead, the goals of palliative care include:

- Treating and preventing symptoms such as pain, nausea, fatigue, and other physical symptoms resulting from the cancer or its treatment
- Helping to meet the patient's emotional and social needs
- Addressing the patient's spiritual concerns
- Addressing practical issues, such as transportation and concerns about finances
- Providing support for the patient's family, friends, and caregiver



Palliative treatments can vary and may include medication, nutritional changes, relaxation techniques, and other therapies. The patient may also be given treatments for prostate cancer that are similar to those meant to cure the cancer, including chemotherapy, surgery, and radiation therapy (Zero, 2021b). Men with advanced prostate cancer may receive palliative care for many months or even years.

At some point, **hospice care** may be required, which is a team-oriented approach to providing pain management and emotional and spiritual support for patients whose life expectancy is 6 months or less. Hospice can be delivered in a hospital, but most hospice care is provided in the patient's home. Hospice may be indicated when the patient:

- Presents with distant metastatic disease
- Shows continual decline despite receiving therapy
- Refuses to accept further active treatment

CONCLUSION

Receiving a diagnosis of prostate cancer most often has a major impact on both the patient and his partner. Nurses are in a unique position to support them through their decision-making process, treatments, managing short- and long-term side effects, addressing recurrence and metastases, and end-of-life preparation.

In order to provide the quality of care that the prostate cancer patient is entitled to, nurses must be knowledgeable about the disease process and treatment options, ways to manage the effects of treatment and long-term side effects, and how to provide the best supportive care to relieve distress.

RESOURCES

Patient resources (Prostate Cancer Foundation)
<https://www.pcf.org/patient-resources/>

Prostate cancer (American Cancer Society)
<https://www.cancer.org/cancer/prostate-cancer>

Prostate cancer (Mayo Clinic)
<https://www.mayoclinic.org/diseases-conditions/prostate-cancer/symptoms-causes/syc-20353087>

Prostate cancer (National Cancer Institute)
<https://www.cancer.gov/types/prostate/hp>



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1. The **greatest** risk factor for developing prostate cancer is:
 - a. Having close relatives with cancer.
 - b. Age.
 - c. Family history of breast cancer.
 - d. Being Black.

2. Which is a **correct** statement about prostate cancer?
 - a. Prostate cancer is the most common cancer diagnosed in men.
 - b. Average age at diagnosis is about 44.
 - c. The five-year survival for those diagnosed with prostate cancer is 50%.
 - d. Prostate cancer is the second leading cause of cancer death in men.

3. Most prostate cancers are first found:
 - a. As a result of screening.
 - b. By conducting a prostate biopsy.
 - c. With a CT scan.
 - d. As a result of Gleason scoring.

4. Which aggressive prostate cancer treatment is referred to in this course as a “local” treatment?
 - a. Radiopharmaceuticals
 - b. Cryotherapy
 - c. Radical prostatectomy
 - d. Immunotherapy

5. Which is a **correct** statement about immunotherapy for prostate cancer?
 - a. It lowers PSA levels rapidly.
 - b. It treats symptoms of the disease and other treatments.



- c. It increases survival for metastatic castration-resistant cancer.
 - d. It delays disease progression in those with localized cancer.
6. Which is a type of prostate cancer treatment that uses drugs or other substances to precisely identify and attack a cancer's specific genes, proteins, or the tissue environment that contributes to cancer growth and survival while doing limited damage to healthy cells?
- a. Cryotherapy
 - b. Chemotherapy
 - c. Systemic radiopharmaceuticals
 - d. Targeted therapy
7. The nurse counsels patients who are receiving brachytherapy to:
- a. Avoid sexual intercourse for 2 weeks after implantation.
 - b. Immediately dispose of any lost seeds in the trash.
 - c. Apply lotion to keep the treatment area moist.
 - d. Take any expelled seeds to the hospital radiation oncology department.
8. The nurse's role when caring for a patient receiving immunotherapy for prostate cancer includes:
- a. Monitoring laboratory studies for alterations in renal and cardiac functioning.
 - b. Instructing the patient to avoid driving until free of pain and completely off pain medications.
 - c. Recommending avoiding alcohol, caffeine, and spicy foods.
 - d. Instructing the patient to complete antibiotics as prescribed and to report signs of urinary frequency.
9. Which instruction is **not** included by the nurse when providing patient education to a patient receiving chemotherapy?
- a. Use a condom when having intercourse for the first 48 hours after treatment.
 - b. Avoid unintended exposure to oral chemotherapy medications in the home setting.
 - c. Do not lift 10 or more pounds for 2 to 3 weeks.
 - d. Watch for cancer treatment-related cognitive impairment, mental clouding, or foggiess.
10. The most common emotional difficulty patients experience after completing cancer treatment is:



- a. Loneliness
- b. Anger
- c. Fear of recurrence
- d. Changes in body image

11. For the five years following prostate cancer treatment, which treatment modality results in the worst problems with incontinence?

- a. Brachytherapy
- b. Radium Ra-223 therapy
- c. Androgen deprivation therapy
- d. Prostatectomy

12. Which surgical intervention is the gold standard for severe urinary incontinence following prostate cancer surgery?

- a. Internal male sling
- b. Artificial urinary sphincter
- c. Sacral neuromodulation
- d. Adjustable balloons

13. Which prostate cancer treatment has the worst rates of sexual dysfunction and possible irreversible erectile tissue damage?

- a. Radiation therapy
- b. Prostatectomy
- c. Androgen deprivation therapy
- d. Chemotherapy

14. Which is considered an emergency condition that may be caused by bone metastases?

- a. Spinal cord compression
- b. Fracture
- c. Hypocalcemia
- d. Severe bone pain

