

# Example of radiation therapy essay

[Health & Medicine](#), [Cancer](#)



This paper limits itself to the discussion of Radiation Therapy and its application in the medical field. It highlights the meaning of Radiation Therapy, its types, the treatment process, and the side effects. Furthermore, it examines the current and future trends in Radiation Therapy in addition to evaluating the sustainability of pursuing a career and related opportunities in RT. Finally yet important, it concludes that radiation therapy and associated technologies is a fundamental application in the medical field such that its absence will mean continuous spread of cancerous cells.

## **Radiation Therapy**

Radiation Therapy is a cancer treatment procedure, which involves the using high radiation to kill malignant cells. The types of radiations used in the treatment include; charged particles, Gamma rays, and X-rays (Jeffrey and Daniel 2010). It is normally used in cancer treatment because it controls the malignant cells growth. Closely to 50% of the cancer patients, receive the therapy during their treatment (Jeffrey. and Daniel, 2010).

The radiations can emanate from external machines (External Radiation Therapy) or the radioactive materials placed inside the patient's body (Internal Radiation Therapy). Occasionally, radiation therapy is used alongside other kind of treatments such as Chemotherapy or surgery.

## **External Radiation Therapy**

This kind of therapy is frequently done on outpatient basis for a couple of weeks, 5 days each week depending on the ailment. In this case, the patient will not be radioactive for the period of or after the therapy.

## **Internal Radiation Therapy**

This kind of radiation is also referred to as Brachytherapy. It is more efficient compared to the external radiation. It is done by inserting a radioactive “seed” inside or about the tumor. The radioactive material releases high radiation thus killing the cancerous cells. The radioactive material can be implanted temporarily or permanently.

## **Planning a Radiation Therapy for an Individual Patient**

This is done through a process called simulation. Simulation involves locating the tumor through image scanning. The scans usually done include; Magnetic Resonance Imaging (MRI), Computed Tomography (CT) scans and Ultrasound scans. It is done in a room with a CT scanner to imitate the actual therapy. The patient is required to lie down on a flat hard surface. The process will last for only half an hour to one hour. This will help to ensure that the treatment is optimized to the patient by directing the radiation beams from different directions. The area to be treated is then marked and the measurements taken. The information gathered from simulation is then sent physicists and radiation dosimetrists to compute the suitable setting for the patient under the direction of a radiation oncologist ((Jeffrey. and Daniel, 2010)

## **The Actual Treatment**

During the first treatment, X-ray is taken and subsequent ones every week or as required. This X-ray is known as port film and they are essential in giving precise healing. For the period of the treatment, positioning is done accurately and the therapist moves out of the room and starts the treatment.

The Intercom and the video cameras in the room will ensure that there is communication between the therapist and the patient. Every treatment field is exposed to radiation close to two minutes after which the therapist will change the position of the machine. The overall treatment time will vary depending on the treatment. The patient is expected to relax, lie still and to breathe normally during the process. (Jeffrey and Daniel 2010)

## **Side Effects of Radiation Therapy**

Radiation therapy helps in curing cancer however; the procedure might have some side effects. The side effects can be divided into two namely; the early and the late side effects. The early side effects are usually temporary and they include fatigue or nausea. This occurs during the treatment or the night after the treatment. The late side effects usually take some time to be seen or felt and they are permanent in nature. The late side effects include heart or lung problems.

## **Current Trends**

Radiation therapy has been a useful weapon in the fight against cancer for the past two decades when the world has been facing this health pandemic thanks to the remarkable advances that have been made in radiation medicine. This has been due to introduction of robotics, computers, and imaging systems in the field of medicine. In the past, cancer treatment could only take place after primary surgery, which was not always successful, but after this discovery, many more people have embraced its treatment and the career opportunity it presents.

## **The Future of Radiation Therapy**

The fact that the generation of doctors graduating now grew up in the period of the technology revolution will lead to the improvement of this technology in the future means that more individuals are embracing this career and as well, the radiation therapy treatment will be remarkably different and sophisticated. Dr. Robert Timmerman, a professor at the University of Texas, predicted that the orthodox method of therapy that requires eight weeks of daily routine treatment might soon be replaced by hypo fractionated radiation therapy, which delivers highly focused beams of radiation to the tumors in five sessions that would last for an hour or less each (Sheets, et. al. (2012). This technology would also improve the chances of survival of patients suffering with cancer.

## **What This Career Will Involve**

This field has several specialists that are involved in treating patients with cancer. They include the radiation oncologists who specialize in radiation theory, oncology nurses, radiation physicist who standardize linear accelerators and finally dosimetrists who compute the correct dosage of radiation for the treatment. This career involves understanding in science, mathematics, and physics as well as the willingness and skill to take care of their patients. They also should be detail orientated to ensure that patients are not underexposed neither overexposed to radiation. Another important skill before choosing the career is interpersonal abilities in relating with the patients since they work closely and need to be comfortable in relating with people in a difficult situation. They also should have endurance as they are

expected spend most of their time at their workplace standing and able to assist patients who cannot move on their own.

## **Qualifications and Compensation**

Job opportunities in this field is anticipated to increase by 20 percent between 2010 and 2012, better than any other occupation therefore boosting the economy and solving the problem of joblessness facing the youth although it will only result to only about 3400 new jobs (Sheets, et. al. (2012). As people grow old, they probability of being diagnosed with cancer escalates, therefore, increasing the need for more radiation therapists. Improvement of cancer treatment methods and early diagnosis due to awareness will also increase employment.

## **Conclusion**

With the rapid increase of people being diagnosed with the different types of cancer due to the unhealthy living standards in the modern world and exposure to different hazardous materials in the working places, the field will continue to grow , and more specialists will be needed to cater to the growing need and this field will continue to develop.

## **References**

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