

# ASTRO publishes white paper on IMRT safety

14 July 2011

As part of the Target Safely initiative, the American Society for Radiation Oncology (ASTRO) has developed a white paper, the first of a series of such papers, on the safe use of integrating intensity modulated radiation therapy (IMRT) into the radiation oncology clinic. The executive summary of this white paper is published in the July print issue of Practical Radiation Oncology (PRO), ASTRO's clinical practice journal. T

Radiation therapy has been used safely and effectively for more than 100 years to treat cancer. In the past few decades, researchers have created new techniques for delivering radiation that further target the tumor while sparing nearby healthy tissue, thus improving the chances of a cure while minimizing side effects. One such technique is called intensity modulated [radiation therapy](#) or IMRT.

IMRT is a tremendous advance in the safe and effective delivery of radiation. However, it also requires much more time and resources from cancer clinics, [radiation oncologists](#), [physicists](#), radiation therapists, dosimetrists, nurses and their support staff to be done correctly.

Errors in radiation therapy are extremely rare, but ASTRO's leadership knows that even one error, however minor, is too many. That's why ASTRO began the Target Safely initiative to help the radiation [oncology](#) community further prevent treatment delivery mistakes.

The main concerns raised in this white paper are:

1. IMRT is a time and resource intensive procedure. Practitioners must work together as a team to address environmental and technical concerns to improve [patient safety](#).
2. Timely treatment is important. However, pressure and real-time changes to

treatment plans can lead to errors. This report encourages the use of standard operating procedures and "forced time outs" to assure adequate time to perform reviews or quality assurance at key points in the process.

3. Team members need to acknowledge that delays in initiation of treatment may be necessary to allow adequate time for quality assurance checks and to investigate any problems discovered.

The report also provides practical guidance that [radiation oncology](#) treatment teams can use in their clinics to improve safety. This guidance includes identifying the key components of an IMRT system, an example of the roles and responsibilities within the IMRT planning and delivery process, a list of examples of possible problems that may occur within the process along with possible remedial actions, and a list of recommendations to guard against catastrophic failures for IMRT.

"[Intensity modulated radiation therapy](#) has been a tremendous advance in the way we treat patients by improving the planning and delivery of radiation therapy. IMRT and other advances in radiation therapy can be used to deliver high doses to tumors while decreasing the dose to healthy tissues," Jean M. Moran, PhD, lead author of the study, Associate Professor and the Associate Division Director for Clinical Physics at the University of Michigan Medical Center in Ann Arbor, Mich., said. "IMRT is, however, incredibly time and resource intensive. It involves the use of sophisticated software and delivery systems and many hand-offs between team members throughout the simulation, planning, and delivery process. It is our hope that practitioners will use the tools and techniques presented in this document to reassess and strengthen their own IMRT programs."

Provided by American Society for Radiation  
Oncology

APA citation: ASTRO publishes white paper on IMRT safety (2011, July 14) retrieved 1 October 2020  
from <https://medicalxpress.com/news/2011-07-astro-publishes-white-paper-imrt.html>

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