

Task Group 59 (Med. Phys. 25: 1-29, 1998), consisting of Dale Kubo (Chair), Glenn Glasgow, Timothy Pethel, Bruce Thomadsen and the speaker, was charge with evaluating high dose-rate (HDR) brachytherapy risks and treatment practices and developing recommended practice guidelines for minimizing serious treatment delivery errors. The report covers the following elements:

1. HDR brachytherapy program design. Included are guidelines for prescription forms, treatment record forms, and checklists, as well as general suggestions for developing formal procedures.
2. Staffing and training. Included are training and experience recommendations for medical physicists, radiation oncologists, dosimetrists and device operators. The treatment planning and delivery process is divided into 8 subprocesses, ranging from pre-insertion preparation, to post-treatment checks. Essential responsibilities of each professional within each subprocess are identified and a basic model for organizing HDR brachytherapy planning and delivery is recommended as essential to patient safety.
3. Treatment-specific quality assurance (QA). For each of the 8 subprocesses, essential QA tests and activities are identified, including the check purpose, the professional responsible, the desired outcome and recommended action in event of negative outcome. These checks are summarized in tabular form and as a QA checklist.
4. Emergency procedures. Procedures for responding to physical plant emergencies and minor emergencies (malfunctions that interrupt treatment) are described as well as management of major crises such as source retraction failure. Emergency training, emergency response kit contents, and emergency applicator removal recommendations are discussed.

TG-59 focuses only on treatment-specific QA, complementing TG-56 (A Brachytherapy Physics Code of Practice®) which covers QA of HDR brachytherapy devices. TG-59 disagrees with U.S. Nuclear Regulatory Commission requirements and recommendations in several areas. Finally, TG-59 emphasizes the design, structure, and staff assignments within the HDR brachytherapy program: QA does not consist of isolated tests and checks but is built in the fabric of the treatment planning and delivery process.