The presentation will begin with a discussion of the rationale for the use of respiratory control techniques in breast cancer. Data pertaining to the dosimetric gains of breath-hold and gating techniques will be reviewed and the expected clinical gains will be modelled based on the Darby data (NEJM, 2013). The range of respiratory control options will be presented and the pros and cons of each technique discussed. The UK HeartSpare Study will be reviewed as an example of how to use research to increase national use of heart-sparing breast radiotherapy techniques. The presentation will finish with a discussion of potential future applications of respiratory control techniques and how to integrate them with advanced radiotherapeutic approaches.

SP-0356
IMRT: should IMRT be the standard of care for adjuvant breast RT?
E. Wai
1BC Cancer Agency - Vancouver Island, Radiation Oncology, Victoria, Canada

The use of IMRT for many cancers has increased in recent years. In general, IMRT has been shown to improve conformity of target volume coverage, with improved high dose sparing of organs at risk (OAR), however, at the cost of increased volumes of normal tissue receiving lower doses of radiation. Improved treatment planning and delivery technology have greatly advanced the practice of IMRT over time.

Among women with breast cancer, two distinct “types” of IMRT are used, in very different circumstances with fairly well-defined benefits and costs. Tangential or field in field IMRT has been used to improve delivery of chest wall/breast radiotherapy. Inverse planned multifield or arc IMRT has been used to improve delivery of chest wall/breast + nodal radiotherapy.

Tangential or field in field IMRT, either inverse or forward planned, has been shown to increase the ability of radiotherapy departments to improve the quality of treatment planning and delivery of tangential breast radiotherapy, through more efficient planning processes, improved dose homogeneity in the breast, and increased automation, while possibly decreasing toxicity.

Inverse planned multifield or arc IMRT has been shown to improve dose conformity, particularly to facilitate inclusion of more complex treatment volumes, e.g. chest wall + internal mammary nodes, in the anatomic setting of significant OAR, such as the heart and lungs. Literature suggests that this is typically at the cost of higher volumes of normal tissue receiving low doses, greater dose inhomogeneity, and greater resources required for treatment planning and delivery.

This session will discuss the balance between the benefits and downsides of the use of both types of IMRT, review potential indications for both, and provide illustrative examples of clinical cases and treatment plans.

Symposium: Advanced technology assessment: Quality management in an era of rapidly evolving radiotherapy technology

SP-0357
Introduction: Magnitude of the problem
T Knöös
1Lund University Hospital, Malmö, Sweden

SP-0358
How can the radiation oncologist secure patient safety
P. Mainon
1Centre Georges-François Leclerc, Radiation Oncology, Dijon, France

Radiotherapy has a long history of examining the risks and documenting adverse events. Pro-active risk assessment and the reactive analyses of events should be used in parallel in order to provide optimal results for risks management. Different methods of risks assessment are available but a combination of methods is needed to perform a complete evaluation. The reactive (retrospective) analysis of events is directly related to the recording and the reporting of events. Detailed analyses should be reported through the local and/or external reporting system with the primarily purpose of more widely disseminating the experience learnt to other professionals. It is important to document all funding and corrective actions in order to prevent the re-occurrence of such events and especially, to share the experience learnt as a result of the event. Two levels of recommendations should be provided: recommendations to institutions that provide radiotherapy services whose primary responsibility is patient safety and secondly, to national authorities which focus on the needs for strong support at the national or original level to promote culture that value risk management and safety.

In the area of new technologies, educational program and practice risk analyses should be favored for the development or update the national strategy on quality and risk management to promote a safety culture in radiotherapy. Clinical audits and regulator inspections are also considered to play many important roles in a national strategy. These actions are aiming to identify assessing and analyzing and understanding on risk issues in order to rich an optimal balance of risks benefits and costs. All the actors involved in radiotherapy process should be concerned by these approaches (physicians, physicists, nurses, radiation technologists and companies). The most relevant advice that might be recommended to radiation oncologists aiming to implement new technologies is to participate to trials including a relevant quality assurance program.

SP-0359
From RTT to QA manager ñ increased demands and new challenges
A. Vaandering
1UCL Cliniques Univ. St. Luc, Academic Department of Radiation Oncology, Brussels, Belgium

The professional radiotherapy (RT) team comprised of radiation oncologists, medical physicist and radiation therapist (RTT) work through an integrated process to plan and deliver RT to cancer patients. Each step requires quality control (QC) and quality assurance (QA) measures to prevent errors and to give high confidence that patients will receive the prescribed treatment correctly. Not unlike the other professionals, the RTT is involved in a number of QC and QA measures. However, RTTs often are the last security barrier that will prevent a near incident from becoming an incident as they are often the pivot point between the pre-treatment phase and the treatment phase of the RT process.

With the recent advances in RT, including intensity-modulated and image-guided RT, QA demands on RTTs have dramatically increased. While the individualisation of treatments, precise positioning verification processes and increased in IT complexity have optimized patient treatment parameters, they also have resulted in the need for