

## In this issue

In this issue there are five original articles and the abstracts from papers presented at the 5th Radiotherapy in Practice Conference hosted by Sheffield Hallam University in October 2010.

There are a range of topics covered, the first is on a study to explore what is meant and understood by therapists on the concept of reflection on practice, other topics include, a review of image guided intensity modulated radiotherapy in palliative radiotherapy, the identification of a computer model of broad beam transmission through lead for gamma and X-rays of different energies, cone-beam computed tomography software and functionality in treatment planning, an examination of the training needs of radiographers for the safe implementation of Tomotherapy.

In the first article, Angela Cashell, from the Princess Margaret Hospital in Toronto, presents her findings on a study undertaken to explore radiation therapist understanding of the concept of reflection, and to understand how they incorporate reflection into their daily practice. Angela also examines some of the perceived barriers to using reflection and the possible challenges of implementing reflective writing. Two focus groups were conducted and a follow-up questionnaire was developed using the themes generated from the focus groups. The questionnaire was used to sample radiation therapists in two large cancer centres in Toronto. Most participants indicated that reflection is an integral part of their practice and professional lives and that they use a variety of different methods for engaging in reflection.

In the second article, Rajiv Samant *et al.*, from the Ottawa Hospital Cancer Centre in Canada, present their findings on a study to assess the efficiency of an integrated imaging,

planning and treatment delivery system to provide image-guided intensity-modulated radiotherapy (IG-IMRT) for patients requiring palliative radiotherapy. In this study, 28 patients requiring urgent palliative radiotherapy were selected to undergo single-session megavoltage computed simulation, IMRT treatment planning, position verification and delivery of the first fraction of radiotherapy on a helical Tomotherapy unit. The time required to complete each step was recorded and compared to our standard approach of using either fluoroscopic or CT-based simulation, simplified treatment planning and delivery on a megavolt unit.

In the next original article, Saud H. Al-lehyani, from the Umm Al-Qura University, Makkah, Saudi Arabia, examines the merits of a computer model of broad beam transmission through lead material for gamma and X-rays of different energies. A mathematical method taking account of primary as well as first scattered radiation is developed. This method predicts reasonably well the transmission through lead attenuators for various experimental conditions.

Following a recent major upgrade in cone-beam computed tomography (CBCT) software and functionality at the centre in Belfast, Denise Irvine and Mark McJury outline how they have reassessed aspects of their Varian Acuity simulator performance for use in treatment planning. The feasibility of using CBCT for treatment planning has been assessed and they report specifically on Hounsfield number (HN) accuracy and related dose errors, and digitally reconstructed radiograph image quality. Using a Catphan 600 CT phantom, HN accuracy and uniformity were investigated for a range of CBCT image modes.

In the final paper, June Dean and Donna Routsis examine the training needs of radiographers for implementing Tomotherapy in NHS practice. In 2006, Addenbrooke's Hospital in Cambridge was awarded Department of Health funding for Tomotherapy, the first in the NHS, to evaluate the functionality and application of the image guidance element of Tomotherapy. The authors describe how they undertook a training needs analysis to identify the core skills and knowledge required and how they

developed an in-house educational programme to ensure competencies for Tomotherapy delivery were assessed against image matching and accuracy and speed. They found that all radiographers were able to meet these standards so that Tomotherapy IGRT in the treatment unit required no input for oncologists, making effective and efficient use of staff resources.

*Professor Angela Duxbury*