PET-CT for radiotherapy planning of head and neck

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FDG-PET/CT imaging is increasingly used to identify and delineate tumour locations for external beam radiotherapy planning. Both the planning CT and the PET images may be acquired using one integrated PET/CT scanner with planning lasers, or with a separate planning CT and PET/CT scanner. In both cases, the normal procedures of PET/CT imaging need to be adapted to match the requirements for radiotherapy planning. This mainly involves careful patient positioning and image fusion verification, but it also has implications for collaboration with radiotherapy workers and radiation hygiene.

Upon completion of this session the attendee will:

1. Understand the benefit of adding FDG-PET/CT to radiotherapy planning for head and neck cancer.
2. Provide an overview of the technical approach of patient positioning on PET/CT for radiotherapy planning.
3. Explain the mechanisms and quality control of image fusion of PET/CT and planning CT for tumour delineation purposes.
4. Create awareness of the logistical and collaboration issues that may occur when performing PET/CT planning.
5. Create awareness of the radiation hygiene issues when performing combined PET/CT imaging with radiotherapy workers.