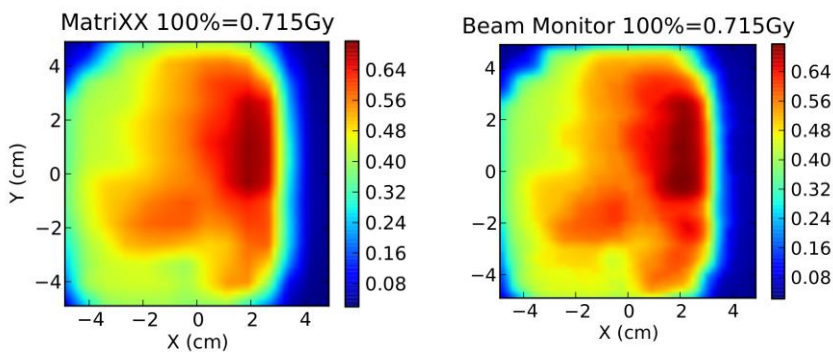


## Real-time dose verification in radiotherapy

Upstream dosimetry system for real-time verification of modulated radiotherapy treatments



*Left: dose measured at isocentre at 5cm deep using a chamber array (IBA MatriXX); right: output from the beam monitor at same depth for a clinical 6MV static IMRT field (Elekta linac).*

A team from the Universities of Bristol and Swansea together with University Hospitals Bristol NHS Foundation Trust has developed a novel radiation detector device for determining the dose from Intensity Modulated Radiotherapy (IMRT) in real-time. The detector is positioned upstream of the patient (between radiation source and patient) and is a very thin silicon detector camera system. The detector minimises interference with the radiation beam (<1% attenuation) and can measure the beam profile and delivered dose very quickly and with high resolution and precision.

### Key Benefits

- Enables real-time monitoring of radiation dose delivered to the patient
- Eliminates the need for costly and time-consuming pre-treatment patient-specific QA
- Enables timely intervention if treatment deviates from plan thus reducing the risk of mistreatments during radiotherapy

### Applications

- Dosimetry in Intensity Modulated Radiation Therapy (IMRT) and Volumetric Modulated Arc Therapy (VMAT)

### IP Status

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