

## Abstract Form

<b>Abstract author/s</b>	<i><b>Dr Roya Merie – Liverpool Cancer Therapy Centre Dr Gabriel Gabriel – Ingham Institute for Applied Medical Research Dr Jesmin Shafiq - Ingham Institute for Applied Medical Research Prof Shalini Vinod - Liverpool Cancer Therapy Centre Prof Michael Barton – Liverpool Cancer Therapy Centre Prof Geoff Delaney - Liverpool Cancer Therapy Centre</b></i>
<b>Presenting author</b>	<i><b>Dr Roya Merie</b></i>
<b>Organisation</b>	<i><b>Liverpool Cancer Therapy Centre</b></i>

**Title of abstract:** Radiotherapy underutilisation and its impact on local control and survival in New South Wales, Australia

**Authors:** Roya Merie, Gabriel Gabriel, Jesmin Shafiq, Shalini Vinod, Michael Barton, Geoff P Delaney

### Background:

Radiotherapy remains an underutilised treatment despite its effectiveness in cancer management. It is estimated that 48% of Australian cancer patients would required radiotherapy at least once in their lifetime (45% within one year of diagnosis). Previously reported actual radiotherapy utilisation rate (A-RUR) in New South Wales (NSW) between 2004-2006 was 26% (22% within one year of diagnosis).

### Aims:

This study aimed to identify the 1-year A-RUR in NSW for 2009-2011 and compare that to the published evidence-based optimal radiotherapy utilisation rate (O-RUR) and to previously reported 1-year A-RUR in NSW in 2004-2006. It also aimed to estimate the effect of underutilisation on 5-year local control (LC) and overall survival (OS) and identify factors that predict for underutilisation and/or inequity of access to radiotherapy.

### Method:

All cases of registered cancer diagnosed in NSW between 2009 and 2011 were identified from NSW Central Cancer Registry and linked with data from all radiotherapy departments. The A-RUR was calculated and compared with O-RURs for all cancers. The difference for each indication was used to estimate 5-year OS

and LC shortfall. Univariate and multivariate analyses were performed to identify factors that correlated with reduced radiotherapy utilisation.

**Results:**

110,645 cancer cases were identified. 25% received radiotherapy compared to the estimated 1-year O-RUR of 45%. This has marginally improved from previously reported rate of 22% in NSW in 2004-2006. We estimated that 5-year OS and LC were compromised in 1,162 and 5,062 patients respectively. Factors that predicted for underuse of radiotherapy were older age, male gender, lower socioeconomic status, increasing distance to nearest radiotherapy centre and localised disease.

**Implications that impact on your project:**

The identified deficit in radiotherapy use has a significant negative impact on patient outcomes. Strategies to overcome such shortfalls need to be developed to improve radiotherapy use and equity of access to this vital cancer treatment modality to improve patient outcomes.