

## Abstract Form

<b>Abstract author/s</b>	<b><i>Gareth Livingston, Lauren Winkley, Brett Waller, Matthew Hoffmann, Andrew Last, Joanne Phan, Mahesh Chandroth</i></b>
<b>Presenting author</b>	<b><i>Gareth Livingston</i></b>
<b>Organisation</b>	<b><i>Mid North Coast Cancer Institute</i></b>

**Title of abstract:** A novel combination of technologies to optimise liver SABR delivery in a regional setting.

**Authors:** Gareth Livingston, Lauren Winkley, Brett Waller, Matthew Hoffmann, Andrew Last, Joanne Phan, Mahesh Chandroth

### Background:

In our region, patients with primary or secondary liver cancer have previously been treated with surgical intervention, or not at all. Stereotactic radiotherapy for liver cancer can be used as an alternative to surgery, but offers the advantage to the patient and the organisation of being non-invasive and deliverable as an outpatient service.

### Aims:

To implement an enhanced stereotactic radiotherapy program for liver cancer patients in regional NSW, using a combination of state of the art of technologies. The aim is to ensure that these patients who are non-surgical candidates not only have equitable access to complex radiotherapy techniques, often only available in metropolitan centres, but to the best treatment available anywhere in the world.

### Method:

Following rigorous evidence based protocol development, and staff training, Mid-North Coast Cancer Institute (MNCCI) implemented a liver stereotactic treatment option utilising the following technologies.

This includes:

- Active Breathing Coordinator (ABC) - breath-hold gating to minimise organ motion during treatment delivery.
- Intra-fractional Cone-beam imaging (IF-IGRT) – provides imaging during treatment allowing for a truer picture of actual treatment delivery, and mid-treatment target verification.
- Flattening filter free (FFF) beam delivery – enabling rapid beam delivery to reduce treatment times, and therefore reduce patient discomfort.

**Results:**

The first case using all three of these technologies has been successfully delivered at Port Macquarie MNCCI. A worldwide query via product vendors has shown we are the first department in the Southern Hemisphere to do so, and likely only the second department to do so worldwide. We have implemented a state of the art liver treatment alternative for our regional patients.

**Implications that impact on your project:**

These complex treatments take a longer time than conventional radiotherapy techniques. With a high overall caseload in a small regional department, we are limited to how many complex liver cases we can treat.