PURPOSE

The purpose of this project was to develop an Advanced Practitioner Radiation Therapist (APRT) role in palliative radiation therapy, to enhance the existing multidisciplinary rapid response palliative radiotherapy clinic (RRRPC). The aim of having an APRT was to streamline the palliative patient’s journey and expedite current practice to increase time efficiency for both staff and patients. In order to achieve this goal, a review of all practical palliative processes in the department was first required and all disciplines were consulted and involved in developing the role description of the APRT.

Two objectives were chosen to assess the effectiveness of the APRT role:
1. The technical ability of the APRT to mark up simple palliative treatment areas to metastatic bone, brain and lung cancers was compared to the mark ups of the Radiation Oncologist (RO).
2. The time taken to complete all simulation and planning tasks including quality assurance checks for patients managed by the APRT compared with those palliative patients managed outside of the RRRPC.

METHODS

A new role description was created within the department to guide the APRT in palliative radiation oncology. A review of all practical palliative processes in the department was done and all disciplines were educated about the goals of the APRT. The APRT was placed in the RRRPC for 6 months, 1 day per week. The RO operating the RRRPC provided on-the-job clinical training and supervision during the implementation of the role into the RRRPC clinic.

The APRT reviewed all departmental practices and educated all disciplines to create an awareness of best practice palliative radiation therapy. The following is a summary of the revision of palliative protocols and practices:

### Revision of all palliative protocols and practices

- To streamline and individualize the patients journey from initial consultation to planning and treatment, decreasing handoffs and therefore decreasing time spent in the department.
- Review current planning and treatment protocols to provide a consistent and transparent practice and find ways to expedite the process without compromising the result.
- Research different palliative techniques that could be introduced to optimize the patients planning and treatment program while still being practical for the department.

### In-services to different disciplines to create awareness of the new APRT role

- Educate all disciplines to create an awareness of all new protocols and processes for palliative patients.
- Educate staff about new palliative trials and techniques.

### Encouraging communication between all disciplines

- To create a streamline process that benefits patients and staff.

The primary technical objective of this project was to assess the ability of the APRT to mark up simple palliative bone, brain and lung treatment fields, before seeking approval from the RO. The field placement of 12 consecutive patients was assessed to determine the accuracy of the APRT. The fields were independently marked up by the APRT and then by the RO. The differences between the fields marked by the APRT and the RO were assessed before seeking approval from the RO. The field placement of 12 consecutive patients was assessed to determine the accuracy of the APRT.

The primary technical objective of this project was to assess the ability of the APRT to mark up simple palliative treatment areas to metastatic bone, brain and lung cancers was compared to the mark ups of the Radiation Oncologist (RO).

RESULTS

The comparison of the 12 field areas marked by the APRT and RO are listed in Table 1. For 4 of the 12 fields, the area marked by the APRT and the RO were identical (figure 1). There was less than 5% difference in the area marked in 7 of the 12 fields and less than 10% difference in the area marked in 8 of the 12 patients. In one of the 4 remaining sites a 40.9% larger area was marked by the APRT (figure 2). In this case the APRT had included the left lower pelvis in the hip field, as the bone scan was unavailable at the initial consult for the APRT to review. Another, which had 15.1% overall larger area was the result of the RO reducing the field size for the last 3 fractions. The third patient had a difference of -13.9% in field area marked due to the RO extending the spinal field laterally to encompass metastases in the lateral spinal process. The final patient had 19.3% difference, due to the RO reducing the APRT field by 1.2 cm superiorly (figure 3).

Over 6 months a total of 44 patients were seen, planned and treated within the one day. Of these, 13 patients were simulated and planned with the support of the APRT (group 1) and 31 patients were simulated and planned without the support of the APRT (group 2). A comparison of the time taken to complete the planning process (including assurance checks) for each patient in group 1 and in group 2 was performed. This comparison is shown in figure 4. The mean time for group 1 was 2.2 hours (range 1.23 to 3.5 hours). The mean time for group 2 was 3 hours (range 1.5 to 7.11 hours).

CONCLUSIONS

In this project an APRT role was developed in the multidisciplinary RRRPC to provide a timely and individualised service for patients having palliative radiotherapy. This has enhanced the current palliative radiotherapy service by decreasing the burden on staff, particularly the RO, and increasing time efficiency for patient service.

The following conclusions resulted:

- It was realised that regular revision of palliative protocols was necessary in order to keep processes current and timely.
- For the majority of patients the differences between the APRT mark ups and the RO mark ups were negligible. It was felt that with ongoing training and experience the accuracy of mark up will improve. Future directions should include:
  - Continuing on the job training by an RO within the RRRPC.
  - The development of specific guidelines and protocols that define field borders for simple palliative metastatic bone, brain and lung cancers to guide the APRT in field mark up.
  - Formalised postgraduate training and education to underpin clinical training.
- There was a decreased mean time of 48 minutes to the complete the planning process of a patient managed through the RRRPC with the aid of the APRT. Although this was a significant outcome it was realised that a mean time of 2.2 hours to complete the planning process was unacceptable for these patients. The inconsistency of the times in both group 1 and 2 identified a need for the development of a more transparent and efficient practice. We aim to achieve this by re-vision all current palliative simulation and planning practices.
- The QA process will be simplified and made relevant for palliative patients.

In April 2012 an independent review by an Australian Inter-Professional Advisory Group was released and has made 13 recommendations that define the way forward for RTs and radiographers to achieve advanced practice status. This project aligns directly with the recommendations made in the report. Our group is currently collaborating with Monash University in Melbourne to develop a post-graduate palliative care advanced practice program specific to radiation therapists.

### Course NO.

<table>
<thead>
<tr>
<th>SITE</th>
<th>TREATED AREA cm² (APRT)</th>
<th>TREATED AREA cm² (RO)</th>
<th>DIFFERENCE IN AREA cm² (APRT-RO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Whole brain</td>
<td>312.8</td>
<td>329.0</td>
<td>16.2</td>
</tr>
<tr>
<td>2 Right shoulder</td>
<td>215.4</td>
<td>217.4</td>
<td>2.0</td>
</tr>
<tr>
<td>3 Thoracic spine</td>
<td>63.3</td>
<td>55.3</td>
<td>-7.7</td>
</tr>
<tr>
<td>4 Left humerus</td>
<td>244.4</td>
<td>246.0</td>
<td>0.0</td>
</tr>
<tr>
<td>5 Right supraclavicular</td>
<td>113.9</td>
<td>98.1</td>
<td>-14.9</td>
</tr>
<tr>
<td>6 Right sacro iliac joint</td>
<td>133.2</td>
<td>132.6</td>
<td>-0.6</td>
</tr>
<tr>
<td>7 Left hip</td>
<td>277.0</td>
<td>277.0</td>
<td>0.0</td>
</tr>
<tr>
<td>8 Lumbar spine</td>
<td>68.7</td>
<td>75.6</td>
<td>-6.9</td>
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<tr>
<td>9 Thoracic spine</td>
<td>36.9</td>
<td>36.9</td>
<td>0.0</td>
</tr>
<tr>
<td>10 Lumbar spine + left hip</td>
<td>413.5</td>
<td>379.5</td>
<td>-34.0</td>
</tr>
<tr>
<td>11 Lumbar spine + left sacro iliac joint</td>
<td>186.0</td>
<td>186.0</td>
<td>0.0</td>
</tr>
<tr>
<td>12 Left hip</td>
<td>265.9</td>
<td>188.7</td>
<td>-77.2</td>
</tr>
</tbody>
</table>

Table 1: Comparison of fields planned by the APRT and RO

REFERENCE


Poster produced by Multi Media Unit, Princess Alexandra Hospital