Impact of Lung Cancer Acute Oncology Admissions in London
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Background
Acute admissions of oncology patients with cancer related problems affects approximately 750 patients every day in the United Kingdom1. Significant shortcomings in the care of this group have been identified2. Acute Oncology is a new discipline set-up in response to these findings and has been tasked with improving the care of patients admitted with oncology emergencies.

The lung cancer population is characterized by older age, poorer performance status and more medical co-morbidities. The impact of acute problems and oncology emergencies is likely to be greater compared to other tumour types.

London Cancer Alliance (LCA) was established in 2011 as the integrated cancer system covering West and South London. It involves 16 NHS provider organisations and serves a population of over 5 million.

Methods
We examined the demographics and hospital episode (HES) data for 1st April 2011 – 31st March 2012 for all the hospital trusts within the LCA. Patients were selected if they fulfilled all of the following criteria:
1. Cancer as the primary or secondary diagnosis of the hospital spell (cancer as defined by codes C00-D48, B21).
2. Non-elective (acute) route of admission (including via A&E, acute medical units, inter-hospital transfers, GP/out of hours, consultant clinics).
3. Were not zero-length of stay spells associated with administration of chemotherapy (X70-X73) or consultant clinics (Z511).

Results
Total Acute Oncology Admissions
Over the 12 month study period, there were 21,532 acute oncology admissions. The majority (62%) were admitted via A&E, with other admission routes being much less common (consultant clinic, 15%; GP or bed bureau, 6%; inter-hospital transfer, 5%).

The notional average occupancy for lung acute oncology patients was 91.6 beds per day across the LCA, with marked inter-hospital variation (0.2 – 13.2 beds per days).

Mortality
Lung cancer patients had the highest overall mortality of any tumour type, with 18% of patients dying during their admission. This was more likely in older patients and with longer admissions.

Length of Stay and Mortality in Lung Acute Oncology Patients

<table>
<thead>
<tr>
<th>Length of Stay (days)</th>
<th>0</th>
<th>1 - 6</th>
<th>7 - 13</th>
<th>14 - 27</th>
<th>28+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Patients</td>
<td>8%</td>
<td>47%</td>
<td>24%</td>
<td>15%</td>
<td>5%</td>
<td>100%</td>
</tr>
<tr>
<td>Deaths in Hospital</td>
<td>13%</td>
<td>16%</td>
<td>22%</td>
<td>22%</td>
<td>27%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Age and Mortality in Lung Acute Oncology Patients

<table>
<thead>
<tr>
<th>Age Band (years)</th>
<th>16-64</th>
<th>65-84</th>
<th>85+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Patients</td>
<td>36%</td>
<td>55%</td>
<td>9%</td>
<td>100%</td>
</tr>
<tr>
<td>Deaths in Hospital</td>
<td>14%</td>
<td>19%</td>
<td>4%</td>
<td>18%</td>
</tr>
</tbody>
</table>

There was considerable variation in the lung acute oncology mortality rates between hospital trusts (range 10 – 24%).

Lung Acute Oncology and Length of Stay
Lung cancer patients were the second largest acute oncology population, accounting for 3,547 admissions of ≥1 day.

The median length of stay for lung acute oncology patients was 6.0 days. Over half (55%) stayed for <1 week, 24% were admitted for 1-2 weeks, 15% for 3-4 weeks, and 5% for >1 month.

Conclusions
Lung cancer patients are over-represented in the acute oncology patient population. The large number patients, their potential for prolonged admission, elderly age distribution and high mortality reflects the significant impact of lung acute oncology on both cancer and acute medical services. Early acute oncology involvement has the potential to improve the quality of patient care and reduce the financial burden.

References
2Systemic Anti-Cancer Therapy: For better, for worse? NCEPOD (2008)