Background
There is a significant and increasing minority of people diagnosed with more than one cancer in their lifetimes, due (amongst other factors) to improving diagnostic techniques and increasing long-term survival of people living with and beyond cancer. As part of the Scottish Routes from Diagnosis (SRfD) project we explore the prevalence of multiple diagnoses and the timing of other diagnoses in relation to the diagnosis of the index cancer.

Methods
We used routinely collected data to define cohorts of patients diagnosed with the four most common cancers in Scotland in 2012 (Breast, Prostate, Colorectal and Lung cancers), and to identify persons with another cancer diagnosed up to 10 years previously or in a 5-year follow-up period. We do not include multiple primaries of the cohort cancer. Number of persons with other diagnoses were converted to rates per 1000 person years at risk (PYAR). This is to allow comparisons between cohorts whilst accounting for survival differences in follow-up.

Results
• The breast cancer cohort had the lowest proportion of people with a previous diagnosis - 3.2%.
• The lung cancer cohort had the highest proportion at 8.5%, or just over 1 in 12 people (Table 1).

<table>
<thead>
<tr>
<th>Cohort</th>
<th>N</th>
<th>Mean age</th>
<th>N persons (%) of cohort</th>
<th>N persons (%) of cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>4327</td>
<td>63.6</td>
<td>141 (3.2%)</td>
<td>188 (4.2%)</td>
</tr>
<tr>
<td>Colorectal</td>
<td>3604</td>
<td>70.7</td>
<td>221 (5.8%)</td>
<td>215 (5.6%)</td>
</tr>
<tr>
<td>Lung</td>
<td>4740</td>
<td>72.4</td>
<td>442 (8.5%)</td>
<td>134 (2.6%)</td>
</tr>
<tr>
<td>Prostate</td>
<td>2502</td>
<td>70.9</td>
<td>205 (6.6%)</td>
<td>222 (7.1%)</td>
</tr>
</tbody>
</table>

• A relatively high proportion of prostate cancer patients experience other diagnoses in follow-up (7.1% of persons in 5 years). Just 2.6% of lung cancer patients have another cancer diagnosis in follow-up.
• This difference in cancer diagnoses in follow-up is influenced by much lower survival rates in the lung cancer cohort.

Conclusions
A significant minority of patients in our cohorts experience another cancer diagnosis in addition to the cohort cancer in the lookback and follow-up periods.

Results continued
Timing
• The rate of other cancer diagnoses is highest in the 3 months preceding and following the index diagnosis, across all cohorts. (Fig 2)
• With the exception of the lung cancer cohort, rates in time periods more than 1 yr after the index tumour are still significantly elevated compared to 1 yr or more before.