A service evaluation to explore whether the use of digital chest drains reduced chest drain duration following thoracic surgery

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Background

- Chest drains essential post thoracic surgery
- Cause pain, limit mobility, reduce independence and dignity
- Underwater seal drains (UWS) vs digital chest drains – an innovation in rehabilitation following thoracic surgery
Purpose

- Primary aim – do digital chest drains reduce drain duration vs UWS drains following thoracic surgery
- Secondary aims – do digital drains vs UWS drains allow:
  
  - earlier postoperative (post-op) mobilisation, reduce time on physiotherapy caseload and reduce hospital length of stay (LOS).
Methods

- 6 month data collection period (February 2017-July 2017)
- Retrospective collection of data from physiotherapy ward sheets, chest radiographs and electronic patient database system
- Data analysed using medians, lower and upper quartiles (LQ and UQ) and the Mann Whitney U test.
### Clinical outcomes

<table>
<thead>
<tr>
<th>Clinical outcomes</th>
<th>Digital chest drain group (110)</th>
<th>UWS chest drain group (82)</th>
<th>Median difference (95% CI)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest drain duration (days) Median (LQ-UQ)</td>
<td>2 (1-4)</td>
<td>3 (1-4)</td>
<td>0 (CI: 0 to 0)</td>
<td>0.91</td>
</tr>
<tr>
<td>Day first mobilised post-op Median (LQ-UQ)</td>
<td>1 (1-2)</td>
<td>3 (2-4)</td>
<td>1 (CI: 1 to 2)</td>
<td>0.0001</td>
</tr>
</tbody>
</table>
## Results continued

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Time on physio caseload (days) (LQ-UQ)</td>
<td>4 (3-7).</td>
<td>5 (4-8)</td>
<td>1 (CI: 1 to 2)</td>
<td>0.02</td>
</tr>
<tr>
<td>Hospital LOS (days) median (LQ –UQ)</td>
<td>5 (4-7)</td>
<td>6 (4-8)</td>
<td>1 (CI: 0 to 1)</td>
<td>0.06</td>
</tr>
</tbody>
</table>
Conclusion

- Chest drain duration and hospital LOS shorter for digital drain group but not statistically significant
- Day first mobilised and time on physiotherapy caseload significantly shorter for digital drain group
- Limitations: introductory phase, retrospective data collection, incomplete data for 8 individuals
Implications

- Digital chest drains did not significantly reduce chest drain duration or hospital LOS following thoracic surgery in this 6 month service evaluation.
- The use of digital drains allowed significantly earlier postoperative mobilisation and discharge from physiotherapy caseload.
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Thank you for listening/Any questions

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