The situation of Mount Lofty was found from hence and from some other crossbearings, to be 34° 59' south and 138° 42' east. No land was visible so far to the north as where the trees appeared above the horizon, which showed the coast to be very low, and our soundings were fast decreasing.

From noon to six o'clock we ran thirty miles to the northward, skirting a sandy shore at the distance of five, and thence to eight miles; the depth was then 5 fathoms, and we dropped the anchor upon a bottom mixed with pieces of dead coral.
Background

- Definition
- Problems
  - Diffuse
  - An emerging field
- Methodological filters (1990s)
  - Depend on the quality of the subject search
  - Lack of certain methodologies in palliative care ↓ usefulness
Background

- Primary need to identify palliative care literature
- Subject filter based on approach used by methodological filters:
  - Imbed expertise
  - Established sensitivity & specificity
Objective

- To develop and validate palliative care search filters for the general medical literature
Methods

- 4 general medical journals hand-searched
  - BMJ, JAMA, Lancet, Annals of Internal Medicine
- 1999-2001
- Palliative care content identified
- Second electronic review (OVID Medline)
- Gold Standard Reference Set defined
Methods

- Selection of 9 MeSH terms & 3 textwords
  - Expert knowledge, 2 existing systematic reviews, PAPAS Cochrane Review Group
  - Strategy

- No terms focused, textwords truncated

- Explosion function reviewed individually, .tw. not .mp.
Methods

- MeSH terms (9)
  - Advance care planning, attitude to death, bereavement, hospices, life support care, palliative care, terminal care, terminally ill, death

- Textwords (3)
  - Palliat$, “terminal care” , hospice$
Methods

- Searches
  - Each individual term
  - Best 4 MeSH terms OR’d
  - 3 Textwords OR’d
  - 9 MeSH terms with 3 textwords OR’s (Master Search)
Methods

- Identified 3 published unvalidated relevant searches
  - Cochrane PAPAS
  - NICE
  - SIGN

- Modified content & notation for OVID Medline, & compared with Master Search
Methods

- Comparison of search results with Gold Standard
- Calculated
  - Sensitivity
  - Specificity
  - Accuracy
  - Precision
# Methods

## Gold Standard

<table>
<thead>
<tr>
<th></th>
<th>Relevant</th>
<th>Not Relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medline Searches</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Articles Retrieved</td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>Articles Not Retrieved</td>
<td>c</td>
<td>d</td>
</tr>
</tbody>
</table>

**Sensitivity** = $\frac{a}{a+c}$  
**Specificity** = $\frac{d}{b+d}$  
**Precision** = $\frac{a}{a+b}$  
**Accuracy** = $\frac{(a+d)}{(a+b+c+d)}$
## Results

<table>
<thead>
<tr>
<th></th>
<th>Articles</th>
<th>Palliative Articles(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annals of Internal Medicine</strong></td>
<td>1562</td>
<td>96 (6.2%)</td>
</tr>
<tr>
<td><strong>BMJ</strong></td>
<td>6894</td>
<td>220 (3.2%)</td>
</tr>
<tr>
<td><strong>JAMA</strong></td>
<td>3972</td>
<td>200 (5%)</td>
</tr>
<tr>
<td><strong>Lancet</strong></td>
<td>8073</td>
<td>257 (3.2%)</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>20501</td>
<td>773 (3.8%)</td>
</tr>
</tbody>
</table>
Results

- Highest sensitivity (MeSH)
  - Exp Terminal Care (29.1%)
  - Palliative Care (14.9%)
  - Exp Advance Care Planning (6.2%)

- Highest sensitivity (textwords)
  - Palliat$ (7.4%)
  - Hospice$ (2.6%)
  - “terminal care” (0.4%)
Results

- Lowest specificity with any single term was 99.37%
- 100% specificity using
  - Hospices (MeSH)
  - Hospice$ (textword)
  - “terminal care”
# Results

<table>
<thead>
<tr>
<th></th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Precision</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master</td>
<td>45.4%</td>
<td>99.3%</td>
<td>73%</td>
<td>97.3%</td>
</tr>
<tr>
<td>PAPAS</td>
<td>45.2%</td>
<td>99.3%</td>
<td>71.4%</td>
<td>97.3%</td>
</tr>
<tr>
<td>SIGN</td>
<td>40.6%</td>
<td>95.6%</td>
<td>26.4%</td>
<td>93.5%</td>
</tr>
<tr>
<td>NICE</td>
<td>56.9%</td>
<td>92.1%</td>
<td>22%</td>
<td>90.8%</td>
</tr>
</tbody>
</table>
Discussion

- Master search, found <50% known articles
- Master search approximates PAPAS search
- Trade-off: ↑ sensitivity using SIGN search offset by ↓ specificity and precision (1996 articles vs 481)
Discussion

- Why, despite all the expert, collaborative & international opinion represented in the 4 searches used, did we fail to achieve acceptable sensitivity?
  - Sufficiency of MeSH terms?
  - Authors don’t recognise content as relevant for palliative care?
Discussion

- Implications for Evidence Based Clinical Practice?
  - ‘Finding’ underpins ‘doing’
  - Bias and systematic reviews

- Implications for Evidence Based Librarianship?
Future Directions

- ↑ sensitivity of master search by identifying additional textwords and phrases
  - Investigating how palliative care is conceptualised and described by palliative and non-palliative specialties
  - Analyses of incorrect exclusions
  - Content analysis of abstracts/full text of gold standard reference set

- Replication/validation in other databases
Strengths

- 4 general medical journals over 3 years
- Defined methodology
- Multiple clinicians/librarian involved
- Consulted existing reviews/strategies
- Computer programme to compare findings for reliability
Limitations

- 2nd generation approach, i.e., subjective
- Computer programme limited to results comparison, not search permutations
Conclusions

- Confirmed the difficulty of identifying palliative care literature in the general medical literature
- Highlights the importance of a systematic approach to development & validation of strategies
- Provides a starting point for improving identification of palliative care literature
Acknowledgements

- **Department of Health and Ageing**
  Direct costs of the CareSearch project have been covered through a grant from the Australian Department of Health and Ageing.
The situation of Mount Lofty was found hence and from some other cross bearings, to be 34° 59' south and 138° 42' east. No land was visible so far to the north where the trees appeared above the horizon, which showed the coast to be very low, and our soundings were fast decreasing.

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