How the VST Program works

Establishment of an effective acute stroke telemedicine program for Australia: protocol for the Victorian Stroke Telemedicine project

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Victorian Stroke Telemedicine Program

Transitioning from a single-site pilot project to a state-wide regional telehealth service: the experience from the Victorian Stroke Telemedicine program

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How the VST Program works
Aim

To describe the factors that facilitated the transition of the VST program from a short-term, single-site pilot project to an ongoing, state-wide regional service.

Method

• Design: Naturalistic case study
• Data Sources:
  — Project reports - 16 stakeholder, 13 funder
  — 10 protocols, 3 collaborative agreements
  — Meeting minutes from 12 Steering and 26 Management Committee, 55 Working Groups
  — Interviews with VST Program Leads and Manager
  — Field notes
• Thematic analysis, inductive
  — 5 categories

Results

1. Political, financial and technological environment

• Government focus on digital / technology
• Technology available
  — Skype, mobiles, laptops used in medical settings
  — Pilot site had a telemedicine cart
• Technology, health and philanthropic funding
  — In kind support

2. Evidence-based

• Clinical need
  — Stroke Foundation Audit / Victorian Stroke Strategy
• Evidence-based solution
  — Telemedicine successful elsewhere
• Implementation strategies
  — Behaviour change techniques
  — Sustainability

Stroke distribution in Victoria

Isochrone map from Ambulance Victoria
3. Stakeholders, leadership, team

- Florey-based team
  - Operations/research team together
  - Range of skills, expertise, FTE; change over time

- Local level at hospital
  - Executive sponsor, champions, site co-ordinator
  - Embed into policy

- Program level
  - Multi-disciplinary, multi-organisations

4. Iterative evaluation

- Provide interim results, ongoing monitoring
  - Site-based for each hospital, comparisons
  - Program-level for other stakeholders

- Clinical and process/implementation evaluation
  - Benefits to patients, but also clinicians/hospitals/funders identified

- Financial sustainability
  - Pilot and interim VST results, publicly available data

5. Dissemination activities

- Early successes & interim results
- Tailored to audience
  - Individualised hospital reports
  - Program Governance quarterly meetings
  - Stakeholder meetings and reports
  - National Stroke and Data Workshops
  - Media – local papers, social media
  - Conferences, papers

Conclusions

- Various funding sources, pilot data, cost-effectiveness
- Evidence-based – clinical need, solution, implementation
- Stakeholders identified and engaged
- Leadership and teamwork established
- Iterative evaluation and dissemination conducted

VST Acknowledgements

- Project Leads: Christopher Bladin, Dominique Cadilhac
- Members of the VST Working Groups: Hospitals, Researchers, Stakeholders, Funders
- National Health and Medical Research Council
- Victorian Department of Health and Human Services
- Funding: Victorian Government, Health and Hospitals Fund

- Chair of Steering Committee: Geoff Donnan
- Executive Sponsor: Marion Simpson, Vincent Thijs, Hans Tu, Teddy Wu, Nawaf Yassi, Philip Choi
- Site co-ordinators: Lisa Howard, Julie Stevens, Ashley Murray, Pat Groot
- Members of the VST Working Groups: Hospitals, Researchers, Stakeholders, Funders
- National Health and Medical Research Council
- Victorian Department of Health and Human Services
- Funding: Victorian Government, Health and Hospitals Fund
What’s next ...

• Australian Telestroke Network

Papers available for scaling up VST

Thank you

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@dominiquecad

Additional slides

Photos
Successes and Failures in Telehealth 2017

Preliminary data
Comparable thrombolysis rates

<table>
<thead>
<tr>
<th>Thrombolysis</th>
<th>National Stroke Foundation Audit 2009</th>
<th>National Stroke Foundation Audit 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Australia Regional</td>
<td>Australia Size (75-100)</td>
</tr>
<tr>
<td>All Ischaemic</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>Ischaemic &lt; 4.5 hrs</td>
<td>not reported</td>
<td>24%</td>
</tr>
</tbody>
</table>

Preliminary VST data

Faster clinical processes

<table>
<thead>
<tr>
<th>Ischaemic stroke and received thrombolysis</th>
<th>Reduction in time (median minutes)</th>
<th>Pre-VST n=105</th>
<th>VST n=174</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Median mins (Q1, Q3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ED Door to CT time</td>
<td>33 (16, 74)</td>
<td>25 (13, 46)</td>
<td></td>
</tr>
<tr>
<td>ED Door to thrombolysis time</td>
<td>103 (77, 122)</td>
<td>72 (55, 96)</td>
<td></td>
</tr>
<tr>
<td>Stroke onset to needle time</td>
<td>34 mins</td>
<td>210 (170, 245)</td>
<td>160 (132, 210)</td>
</tr>
</tbody>
</table>

Preliminary VST data

Treatment delivered safely

<table>
<thead>
<tr>
<th>Confirmed stroke &amp; received stroke thrombolysis</th>
<th>Pre-VST n=105</th>
<th>VST n=174</th>
<th>TEMPIS 2006 (Germany)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sICH (bleed)</td>
<td>16 (15%)</td>
<td>9 (6%)</td>
<td>9%</td>
</tr>
<tr>
<td>Deceased (in hospital)</td>
<td>19 (18%)</td>
<td>32 (13%)</td>
<td>10%</td>
</tr>
</tbody>
</table>

Preliminary VST data