Factors associated with variation in sexual health care delivery at primary health care level in Australia

SiREN Symposium 2016

Barbara Nattabi, Veronica Matthews, Jodie Bailie, Ross Bailie
Presentation overview

- Background
- The ABCD Project and preventive health audit tool
- Study findings of the Sexual Health preventive tool project
STIs in Australia

• Sexually transmitted infections (STIs) continue to be a major cause for concern in Australia

• STIs associated with a range of complications and transmission of HIV

• Major groups
  – Adolescents and young adults
    • 78% chlamydia and 57% gonorrhoea notifications among 15-29 years olds
  – Aboriginal and Torres Strait Islander Australians
    • Chlamydia x 3, gonorrhoea x 18 and syphilis x 4
  – Remote/rural Indigenous people have higher notification rates

• Reducing transmission depends on adequate levels of testing/screening and proper management of STIs
Best practice gaps, barriers and facilitators

Gaps in best practice in sexual health care service delivery in the Australia

- Kong 2011: 8% of the sexually active population had been tested for chlamydia at general practice
- Guy 2011: 14% repeat tested for chlamydia within 30-120 day period
- AIHW 2015: 31% of eligible Indigenous female clients had had a cervical screening in the last 24 months in comparison to 58% of women in the general population (variation 0-100%)

• Barriers
  - lack of knowledge and time, competing priorities, lack of youth friendly facilities, gender-related, cultural, structural, organisational factors (Hengel 2015, Temple-Smith 2012)

• Facilitators
  - motivated and knowledgeable health workers, creativity, innovation, offering STI screening as part of the adult health check (Hengel 2015)
Quality improvement in Sexual Health

- Incentive payments to general practitioners (Bilardi et al., 2010)

- Multifaceted STI interventions e.g. SHIMMER, STRIVE projects (Graham 2015; Guy 2010; Ward 2013)

- Broad-based, systematic continuous quality improvement programs such as the Audit and Best Practice for Chronic Disease (ABCD) projects (Bailie 2008, 2010)
Timeline of ABCD Projects/One21seventy

- **Audit & Best Practice for Chronic Disease**
  - 12 health centres NT Top End
  - 2002

- **ABCD Extension**
  - 69 health centres nationally
  - 2005

- **ABCD NRP**
  - 175 health centres
  - 2010

- **Service Support**
  - up to 220 health centres

**One21seventy**

National Centre for Quality Improvement in Indigenous Primary Health Care

**NATIONAL RESEARCH PARTNERSHIP**

2015
ABCD Projects/One21seventy

One21seventy

- Not-for-profit service organisation
- Over 200 health services enrolled since 2002
- Clinical audit tools for Vascular & metabolic syndrome, Preventive, Maternal, Child health, Mental health, Rheumatic Heart Disease, Youth health, Sexual health, Health promotion and Consumer perceptions of quality of care tools

ABCD National Research Partnership

- understand variation in quality of care between health centres and regions
- identify effective strategies in improving clinical performance
- work with services to disseminate and translate findings for local implementation
Preventive tool and audit process

Sample eligibility
- Between 15 and 54 years
- Resident in the community for 6 months or more in the last twelve months
- Not have a chronic disease
- Not be pregnant or less than 6 weeks postpartum at time of audit.

Sample number
- <30 eligible patients: all records
- >30 eligible patients: random selection of 30

Data collection
- Health centre community survey
- Clinical audits
- Systems assessment

Data analysis and reporting

Participatory interpretation
- Goal setting
- Action planning

Clinical audit process

One21seventy database

ABCD National Research Partnership

- Tool introduced in 2005
- One21seventy tools are developed by expert reference groups
- Audits the documentation of risk factors and brief interventions, scheduled services including sexual, oral, ear and eye health checks, and emotional wellbeing assessments.
- A service is considered as delivered if there is a clear record of delivery at least once in the last 24 months.
Reach of ABCD/One21seventy
Study aims

- To assess variation in specific processes of care related to sexual health among Indigenous primary health care services using longitudinal data obtained through the ABCDE and ABCD NRP projects 2005-2014:
  - Identify variation in delivery of sexual health related services care as per preventive services clinical audits
  - Determine the factors at health service and client level that are associated with variation in care
  - Determine if provision of sexual health prevention/screening increases with participation in CQI
Methods

- Retrieval of data from the ABCD National Research Partnership
- 16,086 clinical records
- 137 health centres from five jurisdictions: NSW, NT, WA, SA, QLD
- Primary care centres which serve predominantly Indigenous clients
- Years 2005-2014
- Univariate and multi-level logistic regression analysis using STATA version 14
- Significance level of p-value < 0.005
Preventive tool data (2005-2014)

<table>
<thead>
<tr>
<th>Jurisdictions (n=5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Centres (n=137)</td>
</tr>
<tr>
<td><strong>State</strong></td>
</tr>
<tr>
<td><strong>CQI participation</strong></td>
</tr>
<tr>
<td><strong>Location (ASGC)</strong></td>
</tr>
<tr>
<td><strong>Governance</strong></td>
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<tr>
<td><strong>Population size</strong></td>
</tr>
<tr>
<td><strong>Accreditation</strong></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Preventive audits (n=16,086)</th>
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</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
</tr>
<tr>
<td>Indigenous</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
</tr>
<tr>
<td><strong>Attended &lt;6 months</strong></td>
</tr>
<tr>
<td><strong>Reason for last attendance</strong></td>
</tr>
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</table>
### Sexual health service delivery for 15-54 year olds: percentages

<table>
<thead>
<tr>
<th>Service</th>
<th>Far West NSW</th>
<th>NT</th>
<th>Qld</th>
<th>SA</th>
<th>WA</th>
<th>Total</th>
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<tbody>
<tr>
<td>Pap smear (females only)</td>
<td>37</td>
<td>48</td>
<td>48</td>
<td>29</td>
<td>29</td>
<td>45</td>
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<tr>
<td>SRH discussion</td>
<td>10</td>
<td>35</td>
<td>39</td>
<td>45.5</td>
<td>11</td>
<td>35</td>
</tr>
<tr>
<td>NAAT for gonorrhoea and chlamydia test</td>
<td>17</td>
<td>61</td>
<td>49</td>
<td>27</td>
<td>23</td>
<td>49</td>
</tr>
<tr>
<td>Syphilis serology</td>
<td>7</td>
<td>51</td>
<td>44</td>
<td>13</td>
<td>14</td>
<td>41</td>
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</table>
Sexual health service delivery for 15-29 year olds: percentages

<table>
<thead>
<tr>
<th></th>
<th>Far West NSW</th>
<th>NT</th>
<th>Qld</th>
<th>SA</th>
<th>WA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRH discussion</td>
<td>26</td>
<td>53</td>
<td>53</td>
<td>55</td>
<td>41</td>
<td>52</td>
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<tr>
<td>NAAT for gonorrhoea and chlamydia test</td>
<td>23</td>
<td><strong>65</strong></td>
<td>59</td>
<td>30</td>
<td>28</td>
<td>56</td>
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<tr>
<td>Syphilis serology</td>
<td>10</td>
<td>55</td>
<td>53</td>
<td>12</td>
<td>15</td>
<td>47</td>
</tr>
</tbody>
</table>
Longitudinal trends over time and cycle
Impact of CQI on Type 2 Diabetes care

Matthews V et al. Duration of participation in continuous quality improvement: a key factor explaining improved delivery of Type 2 diabetes services. BMC Health Services Research. 2014;14:578
Regression Analysis

Question: What factors are associated with (odds of) higher level of service delivery?

Explanatory
- Health centre
  - Location
  - Governance
  - Accreditation status
  - Health service population
  - CQI participation
  - Adult health check
- Patient
  - Age
  - Gender
  - Indigenous status

Outcome
- Composite measure (Pap smear, Sexual and reproductive health discussion, NAAT test for gonorrhoea and chlamydia, Syphilis serology)
- ‘High’ defined as >75% delivery of recommended sexual health services
- Odds ratio
  
  reference category = 1.00
  (Male)
  1.50=odds ratio
  (Female compared to male)
Individual associations- health centre factors

<table>
<thead>
<tr>
<th>Location</th>
<th>Governance</th>
<th>Pop Size</th>
<th>Accreditation</th>
<th>CQI Participation</th>
<th>Health Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
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<tr>
<td>Regional</td>
<td>0.29*</td>
<td>0.99</td>
<td>1.19</td>
<td>1.20</td>
<td>0.63</td>
</tr>
<tr>
<td>Remote</td>
<td>1.75</td>
<td>1.19</td>
<td>1.27</td>
<td>1.20</td>
<td>0.63</td>
</tr>
<tr>
<td>ACCHS</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Government</td>
<td>1.00</td>
<td>&gt;500&lt;1000</td>
<td>1.50</td>
<td>1.51**</td>
<td>1.51**</td>
</tr>
<tr>
<td>&gt;1000</td>
<td>1.27</td>
<td>1.00</td>
<td>1.20</td>
<td>1.64**</td>
<td>1.64**</td>
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<tr>
<td>≤500</td>
<td>1.00</td>
<td>1.00</td>
<td>0.63</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Never</td>
<td>1.20</td>
<td>Some of</td>
<td>All of the...</td>
<td>Baseline</td>
<td></td>
</tr>
<tr>
<td>Some of...</td>
<td>1.20</td>
<td></td>
<td></td>
<td>1.00</td>
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<tr>
<td>All of...</td>
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<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Baseline</td>
<td>1.00</td>
<td>1-2 cycles</td>
<td>≥3 cycles</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>1-2 cycles</td>
<td>1.00</td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>≥3 cycles</td>
<td>1.00</td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.00</td>
<td>Yes</td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1.00</td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
</tbody>
</table>

Odds Ratio

**p-value<0.0001
* p-value<0.005
Individual associations - patient level factors

Odds Ratio
** p-value<0.0001
* p-value<0.005

<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
<th>≥15-&lt;25</th>
<th>≥25-&lt;35</th>
<th>≥35-&lt;45</th>
<th>≥45-&lt;55</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>1.66**</td>
<td>1.00</td>
<td>1.21**</td>
<td>0.75**</td>
<td>0.52**</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>25-35</th>
<th>35-45</th>
<th>45-55</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.21**</td>
<td>0.75**</td>
<td>0.52**</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indigenous Status</th>
<th>1.90**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Indigenous</td>
<td>1.00</td>
</tr>
<tr>
<td>Indigenous</td>
<td></td>
</tr>
<tr>
<td>Not recorded</td>
<td>1.53</td>
</tr>
</tbody>
</table>
Adjusted associations – all factors together

Do associations change after “adjusting for” all other factors (including audit year)?

Odds Ratio

** p-value<0.0001
*  p-value<0.005
Summary

- **Identify if there variation in delivery of service?**
  There is wide variation of care between health services

- **Factors associated with higher level of service delivery?**

<table>
<thead>
<tr>
<th>Significant explanatory factors</th>
<th>Take home messages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adult Health Check:</strong> Persons receiving health check x3.42 odds of higher service</td>
<td>- <strong>Increase the number of adult health checks where STI testing can be conducted</strong></td>
</tr>
<tr>
<td><strong>Gender:</strong> Female x2 odds of higher service</td>
<td>- Patients</td>
</tr>
<tr>
<td><strong>Indigenous status:</strong> Indigenous clients x1.45 odds of higher service delivery</td>
<td>- Health care professionals</td>
</tr>
<tr>
<td><strong>Patient age:</strong> &gt;35 less likely to receive services</td>
<td>- Managers</td>
</tr>
<tr>
<td><strong>Duration of participation in CQI:</strong> 1-2 cycles x1.25 odds of higher service delivery</td>
<td>- Policy makers</td>
</tr>
<tr>
<td></td>
<td>- Consider innovative ways to enhance the number of STI checks for males</td>
</tr>
<tr>
<td></td>
<td>- More research into long term engagement in CQI and impact on sexual health care delivery</td>
</tr>
<tr>
<td></td>
<td>- “Lessons from the best to help the rest”</td>
</tr>
</tbody>
</table>
Limitations

Auditing depends on documentation of data: audit data may not be a true reflection of actual service delivery

Participation in One21seventy and ABCD was/is voluntary so is not representative of health services nationally or regionally

Influence of other unmeasured factors?
Limited set of health centre and patient level factors collected

Next steps

- STI screening in antenatal care (Maternal tool)

- Cochrane review: Quality improvement interventions for improving the detection and management of curable sexually transmitted infections in primary care (protocol): Identifying successful strategies
Acknowledgements
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References

For more information
Barbara Nattabi
Senior Lecturer
Western Australian Centre for Rural Health
University of Western Australia
barbara.nattabi@uwa.edu.au