Point-of-Care Testing across rural and remote emergency departments in Australia: Staff perceptions of operational impact

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Centre for Health Systems and Safety Research

- Medication Safety and e-Health
- Communication and Work Innovation
- Human Factors & eHealth
- Diagnostic Informatics
- Safety & Integration of Aged and Community Care Services
- Primary Care Safety and eHealth
Point of Care Testing (PoCT)

“Tests performed near patients and outside a traditional pathology laboratory” Nichols (2013)

Test turnaround time Lee-Lewandowski & Lewandowski (2010)

Expedited clinical decision making Rooney & Schilling (2010)

Patient & clinician satisfaction Shepard (2013); Blattner et al. (2010)

Test accuracy/ QC/ QA Rooney & Schilling (2010)

Workload & responsibilities Blattner et al. (2010)

Training Rooney & Schilling (2010), Jones et al. (2013)

Operational context Lee-Lewandowski & Lewandowski (2010); St. John (2010)

Quantitative evidence Storrow et al. (2009); Blattner et al. (2010)
Rural and remote NSW

Green shading = Rural
Pink shading = Metropolitan
NSW Health Pathology
Managed PoCT service implementation

• 300 devices
• 5,000 operators
• 150 rural/remote ED
• External quality assurance program

NSW Health Pathology (2015)

Gain a context-rich understanding from frontline clinical staff of the operational impact of the rollout of PoCT across rural and remote EDs in NSW.
Methods – Qualitative study

Ethics Approval: Greater Western Area Health Service Human Research Ethics Committee (Project No. LNR/15/GWAHS/26).

Purposive and diverse sample

<table>
<thead>
<tr>
<th>Sample/ Site</th>
<th>Site A</th>
<th>Site B</th>
<th>Site C</th>
<th>Site D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Interviewed, n</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>ED presentation per month</td>
<td>&gt;500 (high)</td>
<td>&gt;500 (high)</td>
<td>&lt;200 (low)</td>
<td>&lt;200 (low)</td>
</tr>
<tr>
<td>PoCT usage (% of presentations)</td>
<td>&lt;12 % (low)</td>
<td>&gt;25% (high)</td>
<td>&lt;12 % (low)</td>
<td>&gt;25% (high)</td>
</tr>
</tbody>
</table>
Methods – Qualitative study

Semi-structured interviews & focus groups

- Can you describe how Point of Care Testing has affected your work process?
- Can you tell me how Point of Care Testing has impacted your patients?
- Please describe any positive or negative experiences you have had when using Point of Care Testing.
- Are there any situations where you would prefer to use traditional, laboratory based, pathology over Point of Care Testing?
- In your opinion, what have been the consequences of the introduction of Point of Care Testing?
- Where do you see the future of pathology testing going?

Reiterative thematic and content analysis

NVivo 10 Qualitative coding software  Strauss & Corbin (2014); Patton (2015)
Findings

Five overarching emerging themes

Enhanced Practice

- Patient Outcomes
- Clinical Practice
- Pathology
- Governance
- Cost

Innovative or Disruptive Potential
I had an acute infarct come in and it was basically Troponin done, all her other - Chem-8 the CG4 were done. [Before PoCT] we would have only had to go on an ECG [and she] would have been going to [Regional Referral Hospital] first, without going straight to the Cath lab because they wouldn’t have had any baseline blood testing to be done. [... now with PoCT] she was stented two and half hours later. [G]reat outcome, she's now walking around in the community.’ Registered Nurse (RN) – B
Enhanced Practice

Clinical Practice, Governance & Cost

- Increased confidence among Nursing Staff
- Appropriate evidence based treatment
- Better integrated care
- Reduction in unnecessary transfers

‘Well it certainly gives you more information to be able to provide to [regional referral hospital].’ RN - C

Certainly we're not transferring people out for just simply because they need a blood test and we had been doing that prior. [T]here was ambulance costs or patient transport costs’ HSM – B
Innovative/disruptive potential

Patient Outcome and Clinical Practice

• Overordering of PoCT
• Lack of training for results interpretation
• Increased responsibilities for Nursing Staff

‘And it's also put a bit of pressure on us as far as your skills for analysing pathology. [...] You've got to really then read up on more and understand what [the results] means ’ RN - B

‘If the doctor wasn't in town we wouldn't be doing [a PoCT test], we'd be transferring them out, RN - D
Innovative/disruptive potential

Pathology, Governance & Cost

• Initial low confidence in PoCT accuracy
• Time-intensive QC/QA
• Increased workload
• Unmet need for dedicated staff resources

‘Like, for example, if you see a potassium of 8 on our point of care, [...] you should wait for the formal [test results] one to come back, then you start treating your patient..’ Career Medical Officer - A

There's also the cost of the people - like, me doing the QAP because I'm one of the more expensive people to be paying [...] ’ Nurse Unit Manager (NUM) - B
Implications

- Need for additional staff training beyond the use of PoCT devices
- Need for additional staff resources to cover increased workloads.
- Qualitative approaches are well suited in evaluation of health information technology in unique contexts
- Further research required to inform strategies for future implementation in similar settings
- New evidence of international relevance
- Contribute to accurate and contextualised evidence base of impact of managed PoCT services in rural and remote EDs.
Thank you

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References