NURSE LED MODEL OF HEPATITIS C CARE AND TREATMENT

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A/Service Director, Population Health
NSW prisons

• Full time custodial population ~11,000
  – 30,000 new receptions
  – 150,000 movements
  – Short stay - 24% remand; 21% sentence <6 mo.
• Chronic HCV prevalent - 32%
• Co-morbidities prevalent
  – Mental health - 49%
  – Injecting drug use - 43%

2009 NSW Inmate Health Survey
Chronic HCV

**Epidemiology**
- ~260,000 Australians
  - 50-90% of IDU populations
- ~10,000 new cases annually

**Treatment**
- 24-48 weeks pegylated interferon-α / ribavirin
- ~50% sustained virological response (SVR) rate
- Frequent side effects
Treatment in prison

*The pros:*
- Stable environment
- Reasonable management of co-morbidities

*The cons:*
- Custodial priorities
- Frequent movements
- Ongoing IDU
Hepatitis service

• 1995 - 2008
• Medical model
• Decentralised - 8 sites:
  – 6 specialist physicians - monthly clinics
  – Population health nurses
  – Structured investigations
• Limited access and uptake
  – Transfers an impediment
  – Slow timelines
  – ~1% of those potentially eligible treated
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**Aims:**

- To increase assessment and treatment of patients with chronic HCV
- To establish a nurse-led assessment and treatment protocol
  - Limited triage-determined specialist input
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_Pilot project:_

- Justice Health & Professor Andrew Lloyd, UNSW
- Financial support
- November 2008 - October 2010
- Three centres - Lithgow, Goulburn, Long Bay
- Protocol development
- Training of Clinical Nurse Consultants (CNCs)
- Evaluation
  - Qualitative - key informant interviews
  - Quantitative - milestones, adverse events
- Human Research Ethics Committee approval
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Clinical pathway - assessment

CNCs

Post-test counselling: chronic HCV

Protocol-driven investigations

Focused history and examination

Triage decision

Category A: Discussion & Rx prescription

Category B: Teleconference with patient & Rx prescription

Category C: Face-to-face review & Rx prescription
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Clinical pathway - treatment

CNCs

- Treatment education
- Treatment initiation
- Monitoring of adverse effects
- Follow-up post treatment
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Evaluation component:

• Qualitative
  – Key informant interviews
  – Nurses, CMOs, custodial staff, inmates

• Quantitative:
  – Number: recruited; commenced Rx; completed Rx
  – Timeliness of milestones
  – Adverse events and outcomes
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Results - 12 months

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Enrolled</th>
<th>Work-up completion</th>
<th>Specialist review</th>
<th>Treatment initiation</th>
<th>Treatment completion</th>
<th>Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total completed</td>
<td>166</td>
<td>85</td>
<td>50</td>
<td>40</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>In progress</td>
<td>0</td>
<td>26</td>
<td>28</td>
<td>5</td>
<td>34</td>
<td>-</td>
</tr>
</tbody>
</table>
## Nurse led model of care

### Results - 12 months

<table>
<thead>
<tr>
<th>Reasons for discontinuation</th>
<th>No. patients (n=166)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCR negative</td>
<td>8 (5)</td>
</tr>
<tr>
<td>Not interested</td>
<td>16 (10)</td>
</tr>
<tr>
<td>Released</td>
<td>40 (24)</td>
</tr>
<tr>
<td>Transferred</td>
<td>7 (4)</td>
</tr>
<tr>
<td>Rx non-response</td>
<td>3 (2)</td>
</tr>
</tbody>
</table>
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Results - 12 months - CNC triage

<table>
<thead>
<tr>
<th>Variable</th>
<th>Assessed (n=77)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Triage category</strong></td>
<td></td>
</tr>
<tr>
<td>A - low risk, suitable for Rx</td>
<td>18 (23)</td>
</tr>
<tr>
<td>B - low risk, probably suitable for Rx</td>
<td>44 (57)</td>
</tr>
<tr>
<td>C - needs specialist assessment</td>
<td>12 (16)</td>
</tr>
</tbody>
</table>
## Results - 12 months - CNC triage

<table>
<thead>
<tr>
<th>Variable</th>
<th>Assessed (n=77)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age; years (SD)</td>
<td>36 (7)</td>
</tr>
<tr>
<td>Male gender; No. (%)</td>
<td>75 (98)</td>
</tr>
<tr>
<td>Born in Australia; No. (%)</td>
<td>67 (87)</td>
</tr>
<tr>
<td>ATSI; No. (%)</td>
<td>16 (21)</td>
</tr>
<tr>
<td>Remand; No. (%)</td>
<td>9 (12)</td>
</tr>
<tr>
<td><strong>Risk factors for HCV</strong></td>
<td></td>
</tr>
<tr>
<td>Lifetime - injecting drug use (IDU); No. (%)</td>
<td>74 (96)</td>
</tr>
<tr>
<td>Lifetime - tattooing; No. (%)</td>
<td>70 (91)</td>
</tr>
<tr>
<td>Lifetime - body-piercing; No. (%)</td>
<td>33 (43)</td>
</tr>
<tr>
<td>Current IDU; No. (%)</td>
<td>20 (26)</td>
</tr>
<tr>
<td>Current methadone / buprenorphine; No (%)</td>
<td>39 (51)</td>
</tr>
<tr>
<td><strong>Co-morbidities</strong></td>
<td></td>
</tr>
<tr>
<td>History of excessive daily alcohol; No. (%)</td>
<td>27 (35)</td>
</tr>
<tr>
<td>History of excessive binge alcohol; No. (%)</td>
<td>26 (34)</td>
</tr>
<tr>
<td>History of major depression; No. (%)</td>
<td>38 (49)</td>
</tr>
<tr>
<td>History of anxiety disorder; No. (%)</td>
<td>18 (23)</td>
</tr>
<tr>
<td>History of psychosis; No. (%)</td>
<td>32 (42)</td>
</tr>
<tr>
<td>History of auto-immune disease; No. (%)</td>
<td>6 (8)</td>
</tr>
</tbody>
</table>
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Results - 12 months - adverse events on Rx

<table>
<thead>
<tr>
<th>Variable</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constitutional symptoms</td>
<td>22</td>
<td>28</td>
<td>1</td>
<td>0</td>
<td>51</td>
</tr>
<tr>
<td>Psychiatric disturbance</td>
<td>21</td>
<td>11</td>
<td>1</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>Gastrointestinal symptoms</td>
<td>6</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Respiratory symptoms</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Local reaction at injection site</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Cardiovascular symptoms</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Haematological disturbance</td>
<td>30</td>
<td>10</td>
<td>10</td>
<td>1</td>
<td>51</td>
</tr>
<tr>
<td>Liver function disturbance</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>
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Results - 12 months - timeliness

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Number of days; mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrolment to ultrasound</td>
<td>52 (54)</td>
</tr>
<tr>
<td>Enrolment to work-up completion</td>
<td>64 (93)</td>
</tr>
<tr>
<td>Work-up completion to specialist review</td>
<td>44 (48)</td>
</tr>
<tr>
<td>Specialist review to treatment commencement</td>
<td>51 (42)</td>
</tr>
</tbody>
</table>
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*Results - 12 months - key informant interviews*

- Limitations in knowledge (*e.g.)*:
  - Adverse effects of Rx (nurse)
  - Success rates of Rx (DCS)
  - Role of diet and exercise (inmate)
  - Development of resistance (CMO)

- Organisational barriers:
  - Venepuncture service
  - Security obstacles to Rx
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Forward plans:
- Completion of pilot project
  - Data analysis and publication
- Ongoing funding via NSW Health
- NHMRC Partnership application
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Forward plans:

- Expansion of the service
  - ‘Hub and spoke’ model
    - CNC roles
    - CNS roles
    - Workforce training program
  - Chronic HBV
  - Ongoing evaluation

- Template for rural and remote services
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  – Aleta Stevenson
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www.justicehealth.nsw.gov.au
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