UNSW research centre for primary health care and equity

Who does what for the chronically ill in primary health care?

Sarah Dennis
Senior Research Fellow
Review question 1

- To determine the effectiveness of chronic disease management interventions in the primary care setting.
COMMUNITY

- Build healthy public policy
- Create Supportive Environment
- Strengthen Community Action

HEALTH SYSTEM

- Self Management/Develop Personal Skills
- Delivery System Design/Re-orient Health Services
- Decision Support
- Information Systems

Activated Community
- Informed Activated Patient

Productive Interactions & Relationships

Prepared Proactive Practice Team
- Prepared Proactive Community Partners

Population Health Outcomes/Functional & Clinical Outcomes

Method

• A systematic review of the literature
  – To identify reports of professional, financial or organisational interventions designed to improve the care of people with chronic conditions including:
    • asthma, diabetes, chronic obstructive pulmonary disease, hypertension, heart disease, lipid disorders, arthritis (RA and OA) or osteoporosis
  – Delivered by health professionals (doctors, nurses, pharmacists, allied health) or others (lay workers, admin staff) involved in the care of non-hospitalised patients in a primary care or community care setting
Systematic reviews: chronic disease and types of intervention

<table>
<thead>
<tr>
<th>Disease</th>
<th>CIS</th>
<th>DS</th>
<th>DSD</th>
<th>SMS</th>
<th>HCO</th>
<th>CR</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Asthma (4)</strong></td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td><strong>COPD (2)</strong></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Diabetes (12)</strong></td>
<td>1</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td><strong>Heart disease (2)</strong></td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Hypertension (3)</strong></td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td><strong>OA (1)</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>All (23 reviews)</strong></td>
<td>3</td>
<td>1</td>
<td>8</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>24</td>
</tr>
</tbody>
</table>
## Results of review of reviews

<table>
<thead>
<tr>
<th>Elements of Chronic Care Model</th>
<th>Outcome Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HCP Adhere to GL</td>
</tr>
<tr>
<td>DSD</td>
<td>4(4)</td>
</tr>
<tr>
<td>DS</td>
<td>0.5(2)</td>
</tr>
<tr>
<td>SMS</td>
<td>1(1)</td>
</tr>
<tr>
<td>CIS</td>
<td>2(2)</td>
</tr>
</tbody>
</table>
# Primary research papers: chronic disease and types of intervention

<table>
<thead>
<tr>
<th>Disease</th>
<th>CIS</th>
<th>DS</th>
<th>DSD</th>
<th>SMS</th>
<th>HCO</th>
<th>CR</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma (21)</td>
<td>5</td>
<td>10</td>
<td>11</td>
<td>21</td>
<td>1</td>
<td>0</td>
<td>48</td>
</tr>
<tr>
<td>COPD (6)</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>12</td>
<td>1</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>Diabetes (54)</td>
<td>16</td>
<td>33</td>
<td>29</td>
<td>42</td>
<td>5</td>
<td>0</td>
<td>125</td>
</tr>
<tr>
<td>Heart disease (19)</td>
<td>2</td>
<td>4</td>
<td>11</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td>Hypertension (24)</td>
<td>3</td>
<td>13</td>
<td>7</td>
<td>36</td>
<td>0</td>
<td>0</td>
<td>59</td>
</tr>
<tr>
<td>Lipid disorder (12)</td>
<td>4</td>
<td>8</td>
<td>7</td>
<td>10</td>
<td>2</td>
<td>0</td>
<td>31</td>
</tr>
<tr>
<td>OA (8)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>1</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Others (2)</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>All (145)</td>
<td>30</td>
<td>74</td>
<td>69</td>
<td>160</td>
<td>10</td>
<td>0</td>
<td>343</td>
</tr>
</tbody>
</table>
## Primary research papers results

<table>
<thead>
<tr>
<th>Elements of Chronic Care Model</th>
<th>Outcome Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HCP Adhere to GL</td>
</tr>
<tr>
<td>DSD</td>
<td>4(8)</td>
</tr>
<tr>
<td>DS</td>
<td>18(26)</td>
</tr>
<tr>
<td>SMS</td>
<td>2(2)</td>
</tr>
<tr>
<td>CIS</td>
<td>4(7)</td>
</tr>
</tbody>
</table>
CPHCE Chronic Disease Stream Research

• **Self management**
  – Review of primary care linkages for self-management programs
  – Moving-On evaluation
  – Self management in SW Sydney
  – Patient centred care / shared decision making

• **Delivery system design**
  – Teamwork
  – Team Link
  – Nurse case management of COPD

• **Decision support / clinical information system**
  – Care plans in diabetes
  – Asthma 3+

http://notes.med.unsw.edu.au/CPHCEWeb.nsf/page/Chronic+Disease
Key findings – delivery system design

• Beneficial effects
  – Improvements in disease outcomes (HbA1c) and adherence to guidelines, health service use

• Types of delivery system design intervention
  – Multidisciplinary team care, making full use of the practice nurse, nurses acting as case managers and providing self management support
  – Making use of patient reminders and encouraging proactive follow-up of the patient
  – Many of the interventions are design to support and increase opportunity for self management support

• Chronic diseases
  – Improved patient outcomes with diabetes, hypertension, lipid disorders
  – Evidence less clear for arthritis, COPD and asthma
Key findings - decision support

• Beneficial effects
  – Most improvements in health professional adherence to guidelines with improvements in some patient outcomes

• Types of delivery system design intervention
  – Use of evidence based guidelines
  – Educational meetings and support of primary health care professionals
  – Distribution of educational materials to health professionals

• Chronic diseases
  – Improved process and some patient outcomes for diabetes
  – Some evidence for improved adherence to guidelines for asthma
Key findings – self management support

- **Beneficial effects**
  - Improvements in disease outcomes (HbA1c), quality of life, health and functional status, satisfaction and health service use

- **Types of self-management intervention**
  - Patient education, motivational counseling, intensive, specific, group or community based to one, empowerment
  - Difficult to sustain, increased knowledge does not always translate into improved health outcomes

- **Chronic diseases**
  - Improved patient outcomes with diabetes, hypertension, lipid disorders and to lesser extent arthritis
  - Evidence less clear for COPD and asthma
Key findings – clinical information systems

• Beneficial effects
  – Most improvements in health professional adherence to guidelines with improvements in some patient outcomes

• Types of delivery system design intervention
  – Use of evidence based guidelines in clinical computer systems
  – Systems to encourage audit and feedback
  – CIS most often supported decision support

• Chronic diseases
  – Most evidence to support use of CIS in the management of diabetes
Review question 2

What does the literature tell us about the optimal skill-mix to meet the needs of older community dwelling Australians?
Task substitution

versus

versus

versus
Methods

- Black Literature
- Grey Literature
- Systematic Reviews

Screen for relevance to review questions

- Experimental Studies
- Editorials Discussion
- Policy Papers

Verify Content is relevant to review questions

- GP v Pharmacist
- GP v Nurse
- Nurse enhancement
- Innovation

Context Qualitative Extraction

Quality score and data extraction

Synthesis
<table>
<thead>
<tr>
<th>Skill mix</th>
<th>Prof adherence to guidelines</th>
<th>Patient adherence to treatment</th>
<th>Patient service use</th>
<th>Physiological measure of disease</th>
<th>QoL</th>
<th>Patient health status</th>
<th>Patient satisfaction</th>
<th>Patient functional status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr subs by nurse</td>
<td>8 (10)</td>
<td>0 (1)</td>
<td>2 (12)</td>
<td>6 (9)</td>
<td>3 (8)</td>
<td>2 (8)</td>
<td>3 (8)</td>
<td>0 (2)</td>
</tr>
<tr>
<td>Dr subs by pharmacist</td>
<td>6 (6)</td>
<td>8 (11)</td>
<td>2 (11)</td>
<td>13 (14)</td>
<td>3 (9)</td>
<td>4 (5)</td>
<td>5 (6)</td>
<td></td>
</tr>
<tr>
<td>Nurse enhance</td>
<td>1 (2)</td>
<td>3 (4)</td>
<td>3 (7)</td>
<td>2 (4)</td>
<td>2 (3)</td>
<td>3 (6)</td>
<td></td>
<td>4 (5)</td>
</tr>
<tr>
<td>Innovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0 (1)</td>
<td>0 (1)</td>
<td>1 (1)</td>
<td></td>
</tr>
</tbody>
</table>
## Contextual factors

<table>
<thead>
<tr>
<th>Practice level</th>
<th>Professional level</th>
<th>Health system level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors trained to see “whole” patient.</td>
<td>Safety and indemnity.</td>
<td>Increasing skills in team = higher salaries.</td>
</tr>
<tr>
<td>Nurses not trained to make diagnosis.</td>
<td>Minimum standards for health professionals.</td>
<td>Must consider shortages in other professionals.</td>
</tr>
<tr>
<td>More to nursing than performing a task.</td>
<td>Need to define roles in order to identify things to delegate.</td>
<td>GP concerned that they will lose “catch up” time.</td>
</tr>
<tr>
<td>Fee for service model no incentive to change.</td>
<td>Doctors see themselves as team leaders</td>
<td>Large teams hard to manage.</td>
</tr>
<tr>
<td>Indemnity.</td>
<td>Continuity of care.</td>
<td>Career ladders</td>
</tr>
<tr>
<td>Teamwork not easy in practice.</td>
<td>Train health professional separately and then expect to work together.</td>
<td>Low status of aged care</td>
</tr>
<tr>
<td>Patients would not understand skill mix.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

UNSW Research Centre for Primary Health Care & Equity
Conclusion

• Chronic Care Model provided useful framework for analysis
• Patient outcomes improved
  – Self management support, delivery system design, decision support
• Process outcomes improved
  – Delivery system design, decision support and clinical information systems
• Little evidence for the most effective interventions to support the role of community resources and health care organisations in chronic disease management
• Skill mix may be one solution to workforce shortages in primary care
• Task substitution of GPs by nurses or pharmacists is effective for disease management or health promotion but may not reduce health service use (i.e. may not save money)
Challenges Ahead

• Education of primary health care team
• Practice level data / IT systems
• Management of PHC teams – avoid duplication
• Current MBS item numbers
• Including families and communities
• Opposition to skill mix
• Integration of self-management into PHC
• Culturally appropriate
• Who is responsible for care - ? registration
Acknowledgements

Project funded by Australian Primary Health Care Research Institute (APHCRI) Stream 4, 6 and 7 grants

The full reports are available from:

Chronic Disease Management

Skill Mix

Travel Fellowship to explore CDM in UK

Paper

For more information: s.dennis@unsw.edu.au