Effectiveness of interventions in patients with multimorbidity in primary care

Prof. Susan Smith

WONCA Europe July, 2014
Overview

• Why multimorbidity is important
• Systematic review of interventions
• Ongoing research and multimorbidity intervention framework
• Policy options
Living with Multimorbidity

**Multimorbidity vs Comorbidity**

Multimorbidity: Definitions

• Two or more chronic conditions?
  – Coded conditions, specific scoring systems, medication related
  – Record vs. patient report
  – Setting dependent

• Concept severity—not all multimorbidity is equal

• Overlap with frailty

• Link with socioeconomic deprivation
NHS could be 'overwhelmed' by people with long-term medical conditions

One of health service's most senior figures warns there needs to be a serious rethink of how patients are cared for

Denis Campbell, health correspondent
The Guardian, Friday 3 January 2014 19.30 GMT
Multimorbidity: Prevalence

- In absolute terms: more middle aged people than elderly
- Rates vary from 40% to 98%
- Ireland:
  - 66%, aged > 50, in GP setting
  - Three conditions, aged 45-64, GMS eligible: mean 7.5 meds; mean 11 GP visits per year
Socioeconomic deprivation and multimorbidity

Multimorbidity: Deprivation and Mental health

- Occurs 10-15 years earlier in most deprived areas

- Deprivation is associated with MM that includes mental health disorders (prevalence 11% vs. 6%)

- Prevalence mental health disorder increases with increasing numbers physical health conditions
  

- Prevalence of probable depression increases with increasing number of chronic conditions
  
  - 1 condition 23% vs. 5 or more conditions 41%
  
  Gunn et al. Soc Psychiatry Epidemiol, 2012
Impact: Patient

- Premature mortality and morbidity
- Poorer Quality of Life
- Challenging
  - Medications, physical functioning

- Concept of ‘Treatment Burden’

May et al. BMJ, 2009
Impact: System

- Higher rates polypharmacy; adverse drug events
- Higher rates potentially inappropriate prescribing
- Increased health service use, admissions and ED visits, fragmentation of care
- Costs: reducing avoidable complications for people with chronic disease by 10% could save $40 billion
- Challenging for healthcare providers
Multimorbidity: key issues

- Vulnerable patients within this group
  - Polypharmacy
  - Deprivation
  - Mental illness

- High risk of emergency admission
- High service use and costs
- Need cost-effective intervention to improve outcomes
- How to identify those in need of intervention (before it is too late)?
Multimorbidity: What is needed?

- Care coordination
  - ‘Ordering the Chaos’
  - Who is responsible?
- Continuity of care
  - Information, management and relationship
- Extended consultation times?
- Care at primary specialty care interface
  - Medicines management
  - Care transitions
Designing models of care

Challenges

– Defining and identifying individuals
– Considering disease burden
– Delivering effective interventions
– Measuring outcomes e.g. function, disease specific targets etc

Where do we start?
Interventions for improving outcomes in patients with multimorbidity in primary care and community settings

Susan M Smith¹, Hassan Soubhi², Martin Fortin², Catherine Hudon², Tom O'Dowd³

Editorial Group: Cochrane Effective Practice and Organisation of Care Group

Published Online: 18 APR 2012
Interventions for improving outcomes in patients with multimorbidity in primary care and community settings: systematic review

Susan M Smith¹, Hassan Soubhi², Martin Fortin², Catherine Hudon², Tom O'Dowd³

¹HRB Centre for Primary Care Research, RCSI Medical School, Dublin
²Department of Family Medicine, University of Sherbrooke, Quebec
³Department of Public Health and Primary Care, Trinity College Dublin
Method: Cochrane systematic review

• Studies
  – RCTs, CCTs, CBAs and ITS

• Participants
  – Two or more conditions

• Interventions
  – Any intervention designed to improve outcomes in individuals defined as having multimorbidity
  – Primary care and community settings

• Outcomes
Results: Search

- Records identified through Medline (n=15,984)
- Records identified through Embase (n=2,647)
- Records identified through CINAHL, CAB Health, and EPOC register (n=1,546)

Records screened (n=20,177)

Records excluded (n=20,147)

Full text articles assessed for eligibility (n=30)

Full text articles excluded, with reasons (n=17)

Studies included in qualitative synthesis (n=10)

Ongoing studies (n=3)
Included studies

- Ten studies; all RCTs
  - 3407 patients
  - 8 in USA and 2 in UK
  - Majority 6-12 months
  - 8 included patients with broad range of conditions though elderly
  - 2 focused on co-morbidities
Results: Interventions

Interventions:
– 6 organisational
– 4 patient oriented

Multifaceted including:
  o Case management
  o Enhanced skill mix in teams
  o Structured care provision
  o Patient focussed approaches such as self-care and self-management
<table>
<thead>
<tr>
<th>Intervention element</th>
<th>Study</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Professional</strong></td>
<td></td>
</tr>
<tr>
<td>Health Educator</td>
<td>Eakin</td>
</tr>
<tr>
<td>Care manager (non-clinical)</td>
<td>Bognor</td>
</tr>
<tr>
<td>Clinical nurse managers</td>
<td>Boult, Katon, Lin, Sommers</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>Krska</td>
</tr>
<tr>
<td>Social workers</td>
<td>Sommers</td>
</tr>
<tr>
<td><strong>2. Financial</strong></td>
<td></td>
</tr>
<tr>
<td>No study</td>
<td></td>
</tr>
<tr>
<td><strong>3. Organisational</strong></td>
<td></td>
</tr>
<tr>
<td>Structured visits and/or care plans</td>
<td>Eakin, Bognor, Boult, Katon, Krska</td>
</tr>
<tr>
<td>Structured telephone contact</td>
<td>Eakin</td>
</tr>
<tr>
<td>Enhanced multidisciplinary team</td>
<td>Boult, Katon, Lin, Sommers</td>
</tr>
<tr>
<td><strong>4. Patient oriented</strong></td>
<td></td>
</tr>
<tr>
<td>Self management support</td>
<td>Eakin, Boult, Lorig</td>
</tr>
<tr>
<td>Individual patient programme</td>
<td>Bognor, Boult</td>
</tr>
<tr>
<td>Patient education</td>
<td>Katon</td>
</tr>
<tr>
<td>Problem solving therapy</td>
<td>Lin</td>
</tr>
<tr>
<td>Peer support</td>
<td>Lorig</td>
</tr>
</tbody>
</table>
Review results: Overview

• Variation in participants and interventions
• Co-morbidity vs multimorbidity
  – Problems with definitions and overlap with frailty
  – May need different interventions for different groups
• Timescale for effects
  – Improvements in medication related measures
• Targeting risk factors or specific functional difficulties may be more effective
Interventions under evaluation

• Care-Plus study, Scotland (Mercer et al)
  • Extended consultation length
  • Practitioner training

• 3D Study in UK (Salisbury et al)
  • 3D card and flagging system
  • Comprehensive assessments and care plans
  • Care continuity and integration
Interventions under evaluation

• OPTIMAL in Ireland
  • Occupational Therapy led self-management support for MM
  • Six week course

• US Initiatives
  • Multiple Chronic Conditions
  • Secondary data analyses
How to design and evaluate interventions to improve outcomes for patients with multimorbidity

Susan M. Smith, Elizabeth A. Bayliss, Stewart W. Mercer, Jane Gunn, Mogens Vestergaard, Sally Wyke, Chris Salisbury, Martin Fortin

Abstract
Interventions for patients with multimorbidity

1. Clarifying research question
   - Consider specific aspect of multimorbidity to address in which population
   - Balance tailoring interventions with generalizability
   - Identify questions that are important to patient groups and policy makers.

2. Defining participants
   - Target people with a higher risk of adverse outcomes
   - Consider other selection criteria (condition severity, higher symptom burden, polypharmacy, specific age group, high health service utilization)
   - Consider concordant conditions with shared risk factors
   - Pay attention to contextual factors (social support, cultural background, socioeconomic position, education)

3. Developing the intervention
   - Consider theoretical underpinning using logic models and other diagrammatic representations
   - Identify components of multifaceted interventions
   - Involve patients, families, clinicians and policy makers
   - Consider the growing qualitative literature on the challenges faced by patients and practitioners.

4. Considering study design
   - Consider pragmatic randomized trials:
     - cluster randomization for interventions targeting practices or care systems
     - Individual randomization for patient-oriented interventions
     - Stepped wedge designs in context of service delivery
   - Consider mixed method designs and quasi-experimental designs such as controlled before and after studies.

5. Selecting outcomes
   - Consider clinical outcomes, patient-reported outcomes and healthcare system outcomes
   - Consider intermediate outcomes such as self-efficacy and health behaviours that link to longer term outcomes
   - Consider measures that capture treatment burden, avoidance of unnecessary tests and minimizing medication side effects
   - Consider cost-effectiveness and health-related quality of life measures to inform economic analyses.

6. Analysing & interpretation of results
   - Incorporate both quantitative and qualitative analyses with full process evaluations
   - Include context description
   - Examine both changes in healthcare organisation and changes in patient behaviour
   - Identify sub-groups that respond in particular ways
   - Consider the impact of the intervention on reducing health inequalities
Interventions for patients with multimorbidity

2. Defining participants
   - Target people with a higher risk of adverse outcomes
   - Consider other selection criteria (condition severity, higher symptom burden, polypharmacy, specific age group, high health service utilisation)
   - Consider concordant conditions with shared risk factors
   - Pay attention to contextual factors (social support, cultural background, socioeconomic position, education)
Co-morbidity with diabetes

- Cohort of 424 patients with type 2 diabetes from RCT
- Chart review and self-report
- Results
  - 90% two or more conditions
  - 25% had five or more chronic conditions
  - 189 conditions
- Mismatch between self-report and chart review
- GP visits and medication numbers related to multimorbidity but not diabetes control

Defining participants?

- Common co-morbidities?
  - Diabetes/ IHD/ Depression
- Number and/or severity of conditions
- Health service use
  - Frequent attenders?
- Polypharmacy and PIP?
- Risk of hospital admission
  - Multiple risk scores available
- Depends on intervention
Interventions for patients with multimorbidity

3. Developing the intervention
- Consider theoretical underpinning using logic models and other systematic representations
- Identify components of multifaceted interventions
- Involve patients, families, clinicians, and policy makers
- Consider the growing qualitative literature on the challenges faced by patients and practitioners.
Developing the intervention

• **Who are you targeting?**
• Risk factor management
• Focus on functioning and physical fitness
• Organisation of services
• Medicines
• Psychological emphasis
• Self-management support?
• GP training
Qualitative study: GPs and pharmacists managing multimorbidity

- Link to polypharmacy and ageing
- Health systems issues relating to lack to time, interprofessional communication difficulties, and fragmentation of care
- Individual issues from clinicians relating to professional roles, clinical uncertainty, and avoidance
- Patient issues: ‘Not all need intervention’

Smith et al. BJGP 2010 Jul;60 (576):285-94
Multimorbidity consultation framework

Dr Emma Wallace & Prof. Susan Smith

ICGP Summer School 26th June, 2014
Figure 1: Multimorbidity consultation framework

Identification of complex multimorbidity → Preparation

Continuity

Planned review
Consider other resources

Prioritisation
Shared decision making
Take-home points: Multimorbidity consultation

1. Identify patient as having ‘complex’ multimorbidity.

2. Provide continuity of care with one GP, where possible.

3. Consider using the multimorbidity consultation framework presented.


5. Assess for and treat depression and anxiety.

6. Clinical guidelines with their single-disease focus are difficult to apply to patients with multimorbidity.
NHS could be 'overwhelmed' by people with long-term medical conditions

One of health service's most senior figures warns there needs to be a serious rethink of how patients are cared for

Denis Campbell, health correspondent
The Guardian, Friday 3 January 2014 19.30 GMT
Health policy and multimorbidity

• Chronic disease models
  – Integrated care
  – Multidisciplinary care
  – Support for self-care

Single conditions
Policy choices

• Support generalist approach
  – Medicines management
  – Focus on relevant interventions and outcomes

• Target high risk individuals
• Identify and intervene for vulnerable groups
Conclusions

• Multimorbidity is important
• Challenging
• Current evidence limited
• Ongoing evaluations and need for evidence based interventions
• Need for GP training
Questions

http://www.hrbcentreprimarycare.ie/
References