ASSESSING THE ECONOMICS OF COMPLEX INTERVENTIONS IN COMPLEX SETTINGS

THE REINFORCED HOME-BASED PALLIATIVE CARE (rHBPC) CASE STUDY

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Overview

INTEGRATE-HTA Guidance on economic assessment of complex interventions

Case study - Economic assessment of reinforced carer support in home based palliative care

Conclusions
Economics guidance conclusions
Methodology research

Complexity => Paradigm shift from optimisation to system improvement.

Methods for assessing whether complexity matters for economic evaluation.

Computational modelling techniques for understanding adaptive behaviour and intervention/setting co-evolution.

Methods for measuring and valuing non–health benefits.
Economics guidance conclusions
Recommendations for practice

Systems approach for working with stakeholders to achieve health system improvement

Cost consequence analysis to address multiple perspectives

Real world problem situation
Case study - Economic assessment of reinforced home based palliative care
Reinforced home based palliative care

Modelling activities
Economic evidence review rHBPC
Stakeholder workshops
Conceptual modelling
Elicitation of expert judgement
Model Implementation
Engaging with decision problem

Key documents
Briefing document
Scope
Aspects of complexity
Health and wellbeing model
Resource pathway model
Scope and design of economic modelling

- No trial evidence on economics of rHBPC:
  - Expert elicitation - Very simple model !!
- Focus – the COPE intervention
- Effectiveness based upon analysis previously reported
- Marginal resource use/cost impacts in the system ie not cost effectiveness
  - e.g. cost shifting between hospital, GPs and PC agencies.
Aspects of complexity Palliative Care

Multiple perspectives
Indeterminacy
Uncertain causality
Unpredictable outcomes
Time / path dependency

Hospitals / GPs / Community
Social care
Hospices
Charitable groups
Patients & Families
Carers
Aspects of complexity
Palliative Care

Multiple perspectives
Indeterminacy
Uncertain causality
Unpredictable outcomes
Time / path dependency

Definition of the intervention / comparator
Reinforced home based PC – Formal element of carer support
Aspects of complexity
Palliative Care

Multiple perspectives
Indeterminacy
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Unpredictable outcomes
Time / path dependency

Interaction between context and intervention effectiveness
Effectiveness of carer support relies on communication between PC agencies
Aspects of complexity
Palliative Care

Multiple perspectives
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Uncertain causality
Unpredictable outcomes
Time / path dependency --

Evolutionary systems
UK GP contract 2004
Removal of 24 hr responsibility
Liverpool care pathway: ‘More care, less pathway’
Context/driver of change

Impact on generalisability
Conceptual modelling

• Health and wellbeing logic model
  Possible causal chain between reinforcement interventions, their immediate impact and the overall goals and outcomes of the different stakeholders (patients, carers, health professionals and decision makers)

• Resource pathway model
  Descriptive model of activities, services and resources in the system & intervention impact.
Health and wellbeing model
Effectiveness results
rHBPC

• Evidence of effectiveness for patients or carers neutral or positive – suggestion of positive outcomes for patient symptom control and psychological outcomes for patient and carer
## Resource & cost results for rHBPC

<table>
<thead>
<tr>
<th>New palliative home care patients per month</th>
<th>Carers receiving the intervention (hrs/month)</th>
<th>SPC nurse Intervention workload (hrs/month)</th>
<th>Change in SPC nurse operational workload (hrs/month)</th>
<th>Change in SPC nurse hours (hrs/month)</th>
<th>Marginal SPC nurse FTE</th>
<th>Marginal GP consultations</th>
<th>Marginal care home weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>28 (8,56)</td>
<td>92 (28,168)</td>
<td>-132 (-408,-16)</td>
<td>-40 (-280,76)</td>
<td>-0.24 (-1.72,0.48)</td>
<td>-4.4 (-10.8,1.6)</td>
<td>0.08 (0.04,0.24)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New palliative home care patients per month</th>
<th>Cost of the intervention (95%CI)</th>
<th>Change in SPC service cost (95%CI)</th>
<th>Change in hospital costs (95%CI)</th>
<th>Change in GP costs (95%CI)</th>
<th>Total monthly marginal cost (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>£8,040 (2440,14560)</td>
<td>£2,480 (-7160,9800)</td>
<td>-£15,080 (-49840,4240)</td>
<td>-£3,600 (-9960,280)</td>
<td>-£16,640 (-53880,3320)</td>
</tr>
</tbody>
</table>
Economics of rHBPC

Quality, quantity of economic evidence poor, reliance on elicitation
Complexity => lack of generalisability
No off the shelf intervention

Effectiveness – Some potential for positive impact
Economics - Potential to recoup investment

Need to design carer support in context of wider PC system, Eg communication, out of hours, access to patient records.
Interventions require integral mechanisms for continuous evaluation and system adaptation:
Eg Outcomes and levers to achieve cost and outcome goals.
Conclusions

Guidance seeks to provide a systemic approach to understand economic decision problems, to design and develop models that generate credible economic evidence for decision making.

Intervention includes evaluation

Guidance is a starting point for further development. Needs validation in different complex settings.

Substantial further methodological research - complexity science methods in health economic modelling.
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Guidance on economic assessment of complex interventions
Appropriate outcome?

- Many inconsistent outcomes and outcome measures.
- Quality adjusted life year (QALY) rarely used &
- Measures eg EQ5D, SF36 insufficient for PC.
- Outcomes of both the carer & the patient are important.
- Further research in:
  - Domains of wellbeing and
  - incorporating multiple perspectives.