What is the evidence on the economic impacts of integrated care?

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Background to the study

- Rising number of people with complex care needs requires the development of delivery systems that bring together a range of professionals and skills from both the cure (healthcare) and care (long-term and social care) sectors
- Failure to better integrate or coordinate services may result in suboptimal outcomes and evidence that is available points to a positive impact of integrated care on the quality of patient care and improved health or patient satisfaction outcomes
- Uncertainty remains about the relative effectiveness of different system-level approaches on care coordination and outcomes, with particular scarcity of robust evidence on the economic impacts of integrated care approaches

Evidence points to improved outcomes of components of care coordination

Main focus of intervention *(number of studies)*	**Proportion (%) of studies with positive outcome for**		
	Health	**Service user satisfaction**	**Cost saving**
Changed relationships between service providers *e.g. case management, multi-disciplinary teams (33)*	65.5% *(19/29)*	66.7% *(8/12)*	16.7% *(2/12)*
Coordination of clinical activities *e.g. joint consultations, shared assessments (37)*	61.3% *(19/31)*	33.3% *(4/12)*	20% *(3/15)*
Improving communication between service providers *e.g. case conferences (56)*	55.3% *(26/47)*	54.5% *(12/22)*	14.3% *(2/21)*
Support for clinicians *e.g. supervision for clinicians, reminder systems (33)*	57.1% *(16/28)*	57.1% *(8/14)*	8.3% *(1/12)*
Information systems to support co-ordination *e.g. care plans; decision support; register (47)*	60.5% *(23/38)*	36.8% *(7/19)*	15.4% *(2/13)*
Support for health/social care service users *e.g. education, reminders; assistance (19)*	35.3% *(6/17)*	50.0% *(3/6)*	14.3% (1/7)
All studies	55.4% *(36/65)*	45.2% *(14/31)*	17.9% *(5/28)*

Source: Powell Davies et al. (2008)

Integrated care is a concept that has been widely but variously used in different contexts

- Lack of common definitions of underlying concepts and plethora of terminologies
- General absence of a sound analytical framework through which to examine processes of integration
- Applied from several disciplinary and professional perspectives and is associated with diverse objectives
- Integration in health care is not likely to follow a single path and variations will be inevitable

Analysts have identified different dimensions as a means to provide a typology of integration

- Target
  - Functional, organisational, professional, clinical
- Hierarchical level
  - Horizontal, vertical
- Degree
  - Continuum of integration: linkage – coordination – integration
- Process
  - Normative, systemic

- *Process of integration typically requires simultaneous action at different levels, involving different functions, and it develops in different phases*

Forms of integration in the English Integrated Care Pilot Programme

Site	Organisational integration	Functional integration	Service integration	Clinical integration	Other integration	Macro-level integration	Mesco-level integration	Micro-level integration
Bournemouth and Poole		•	•				•	
Cambridge			•		At the outset ICO did not assume they would deliver a new service within the pilot period. They have instead strived to work within and across partner organisations (and eventually aim to include other parties) to improve the EOL care already provided		•	
Church View	•						•	
Cumbria (South Lakeland)	Originally planned	•				Originally planned	•	
Cumbria (Maryport and Cockermouth)	Originally planned	•				Originally planned	•	
Durham Dales	Originally planned	•					•	
Nene		•	•				•	
Newquay			•				•	
Norfolk	•	•	•				•	
North Cornwall			•				•	
North Tyneside			•	•			•	•
Northumbria		•	•				•	•
Principia: Community Wards			•	•			•	
Principia: COPD			•	•			•	•
Tameside and Glossop			•				•	
Torbay			•	•		•	•	
Tower Hamlets			•	•			•	
Wakefield			•				•	

Source: RAND Europe and E&Y (2012)

Conceptualising economic impact of integrated care

- Range of potential benefits that may lead to cost savings
  - Complications avoided, reduced healthcare utilisation and healthcare cost, and labour productivity gains where the working age population is concerned, or wider benefits achieved through participation in society, reduced carer burden, etc
- Range of benefits dependent on perspective
  - Specific agency (eg health insurer), health and social care system, or wider economy or society (societal perspective)
- Requirement of a controlled design or comparison strategy to assess cost effectiveness to establish counterfactual
- A given intervention may be found to be cost-effective but not necessarily cost saving

We carried out a rapid review of systematic reviews and meta-analyses

- Working definition of integrated care

  Initiatives seeking to improve outcomes for those with (complex) chronic health problems and needs by overcoming issues of fragmentation through linkage or coordination of services of different providers along the continuum of care

- Followed approach by Ouwens et al. (2005)

Overview of outcomes of 'integrated care programmes'

	Hospitalization	Mortality	Process outcomes[1]	Functional status and health outcomes	Patient satisfaction	Quality of life	Costs
Studies with only descriptive analyses							
Ferguson, 1998 [21]				+	+	+	?
Moser 2000 [10]	–			+		+	–
Norris 2002 [14]			+	+			
Philbin 1999 [11]	–			+	+	+	?
Renders 2002 [15]			+	+			
Rich 1999 [12]	–*	?	+	+	+	+	–
Windham 2003 [13]	–	?	+	+		+	?
Studies with also meta-analyses							
Badamgarav 2003 [16]				?			
McAlister 2001 [17]	–*	?		+		+	–
McAlister 2001 [9]	–*	?					–
Sin 2003 [19]	?	?					
SUTC 2001 [18]		–*					
Weingarten 2002 [20]			+*	+*			

[1]Process outcomes as for example provider monitoring, compliance and adherence to guidelines.
? = effect remains unclear; – = trend shows decrease (in more than half of the included studies); + = trend shows increase (in more than half of the included studies); * = trend is significant.

Source: Ouwens et al. (2005)

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- Followed approach by Ouwens et al. (2005)
  - searched PubMed, Embase, Cochrane Library using medical subject headings (MeSH) or Emtree, from 2004 onwards
  - Excluded studies that examined single interventions only
  - Excluded studies that did not explicitly state the search strategy, inclusion and exclusion criteria, the analytical approach or that did not describe whether studies included in the review were assessed for quality

We distinguished three basic economic outcomes

- *Utilisation*: the level of use of a particular service over time, such as physician visits; emergency room/accident and emergency department visits; hospital (re-) admissions; length of hospital stay; hospital days
- *Cost effectiveness*: benefits of the intervention in terms of natural units (cost-effectiveness), such as life years gained, reduction in blood pressure, etc., or in a synthetic overall health measure (cost-utility), such as quality adjusted life years (QALYs)
- *Cost and/or expenditure*:
  - 'cost': cost of providing a particular service (health, nursing, social care), including the costs of procedures, therapies, and medications where applicable
  - 'expenditure': amount of money paid for the services, and from fees, which refers to the amount charged, regardless of cost
  - avoided cost: costs caused by a health problem or illness which are avoided by a given intervention

We identified 19 systematic reviews and meta-analyses that met our inclusion criteria

- Reviews assessed a range of population groups
  - Frail older people in the community or with (long-term) medical or social care needs; people with mental health problems and/or with specific (physical) chronic conditions; multimorbidity
- None of the reviews explicitly focused on 'integrated care'
  - Most common: case management, care coordination, collaborative care, disease management; considerable variation among studies
- Initiatives or approaches targeted range of sectors
  - Hospital-primary care/community services interface (discharge planning or care transition); primary care and community services, sometimes extending into social care services

Evidence of economic impacts of integrated care approaches remains uncertain (1)

- Majority of economic outcomes focused on hospital utilisation through (re)admission rates, length of stay or admission days and emergency department visits
  - E.g. early supported discharge or discharge planning: Evidence of significant reduction of readmission rates for older people with heart failure and adults with mental health problems but not stroke patients
  - 'Hospital at home': non-significant increase in admissions but also significant reduction in mortality at six months *(Shepperd et al. 2008)*
- Seventeen reviews reported cost and/or expenditure data in some form, typically reporting cost in terms of healthcare cost savings resulting from the intervention, most frequently in relation to hospital costs

Evidence of economic impacts of integrated care approaches remains uncertain (2)

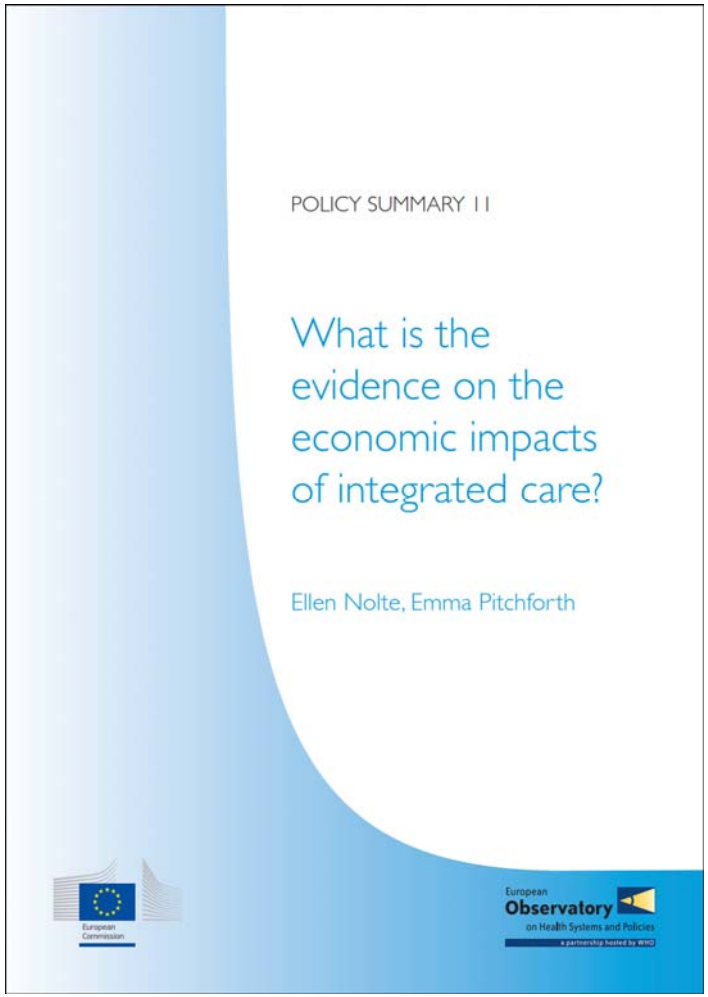
- There was some evidence of cost reduction; however findings were frequently based on a small number of original studies only, or studies that only used a before-after design without control, or both
  - Two reviews of care approaches targeted at people with depression reported increase in cost associated with the intervention although there was evidence of lower cost per successfully treated patient *(Neumeyer-Gromen et al. 2004; Steenbergen-Weijenburg et al. 2010)*
  - Impact of health system setting: cost differences for comprehensive discharge planning for people with heart failure were smaller in non-US based trials compared to US-based trials *(Philips et al. 2004)*
  - Need to distinguish initial and longer-term costs: community-based nursing programme for people with Parkinson's disease initially increased costs but increase lower over two years *(Tappenden et al. 2012)*
- Results often not quantified, making an overall assessment of the size of possible effects problematic

There was evidence of cost-effectiveness of integrated care approaches but this was weak

- Eight of the nineteen studies reported on cost-effectiveness
- There was some evidence from one review of approaches targeting frequent hospital emergency department users that found one trial to report the intervention to be cost effective *(Althaus et al. 2011)*
- One other review concluded, based on one economic evaluation, that there was little or no evidence of incremental QALY gain over usual care of structured home-based, nurse-led health promotion for older people at risk of hospital or care home admission *(Tappenden et al. 2012)*
- Six reviews reported on cost per QALY as a measure of cost-utility, suggesting increased cost associated with the integrated care approach in question in some studies but not others
- Overall the evidence was difficult to interpret

Majority of studies reviewed echo earlier concerns about the evidence on integrated care

- Existing primary studies vary in the definition and description of the intervention and components of care under study
- Variation in definitions and components of care, and failure to recognise these variations, might lead to inappropriate conclusions about programme effectiveness and the application of findings
- Need to use existing evidence to better understand how specific local conditions influence the outcomes of a given programme to inform implementation
- Need to revisit understanding of 'integrated care'
  - Complex strategy to innovate and implement long-lasting change across health and social care
  - Requirement of continuous evaluation over extended periods



Further reading:
http://www.healthobservatory.eu