Evaluation in 'real-world settings'?

The role of complexity

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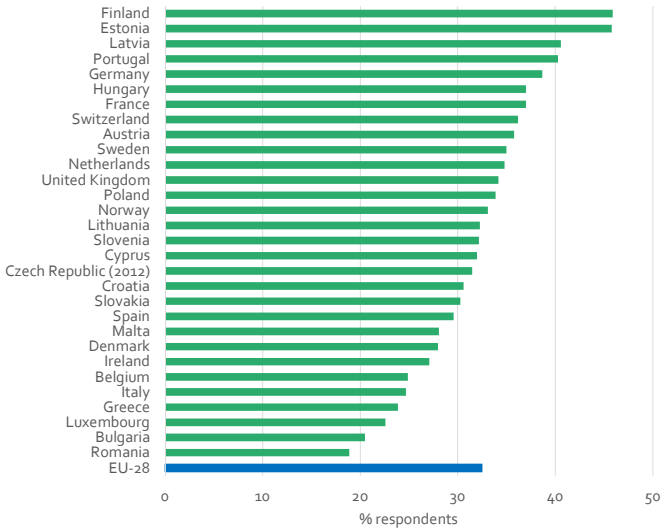
One-third of adult population in the EU have a long-standing illness/health problem (2014)



Source: Eurostat. (2016)

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People with chronic diseases more likely to utilise health care, particularly those with multimorbidity

Thavorn et al. Effect of socio-demographic factors on the association between multimorbidity and healthcare costs: a population-based, retrospective cohort study. BMJ Open 2017;7(10):e017264.
https://bmjopen.bmj.com/content/7/10/e017264.long

Figure 1 . Distribution of total number of population and total health system costs in Ontario from 1 April 2009 to 31 March 2010

Figure 2. Unadjusted mean total healthcare cost per capita for Ontario adults, by service type, number of conditions and age group from 1 April 2009 to 31 March 2010.

Source: Thavorn et al. (2017)

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The nature of chronic conditions requires a different approach to service delivery

	Acute disease	Chronic illness
Onset	Abrupt	Generally gradual and often subtle
Duration	Limited	**Lengthy and indefinite**
Cause	Usually single	Usually multiple and changes over time
Diagnosis and prognosis	Usually accurate	Usually uncertain
Technological intervention	Usually effective	**Often indecisive, adverse effects common**
Outcome	Cure possible	**No cure**
Uncertainty	Minimal	Pervasive
Knowledge	Professionals knowledgeable, patients inexperienced	**Professionals and patients have complementary knowledge and experiences**

Source: adapted from Holman & Lorig (2000)

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Health care largely built around acute, episodic model of care

- Health care not well-equipped to meet the requirements of people with multiple or complex care needs
  - complex response over extended period of time
  - co-ordinated inputs from a wide range of professionals
  - access to essential medicines and monitoring systems
  - active engagement of patients
- Fragmentation of services acting as barrier to coordination of services along the continuum of care
  - Patients receive care for a disease from many different physicians or providers
  - They are frequently called upon to monitor, coordinate, or carry out their own treatment plan

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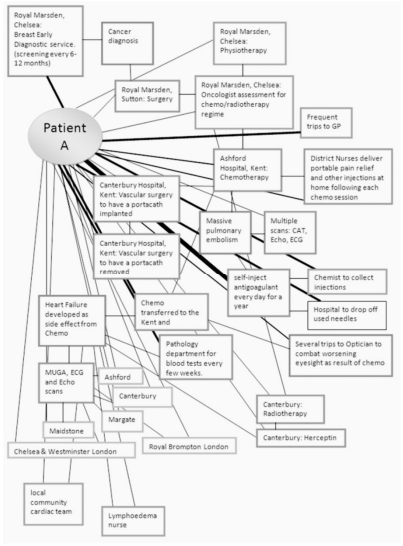
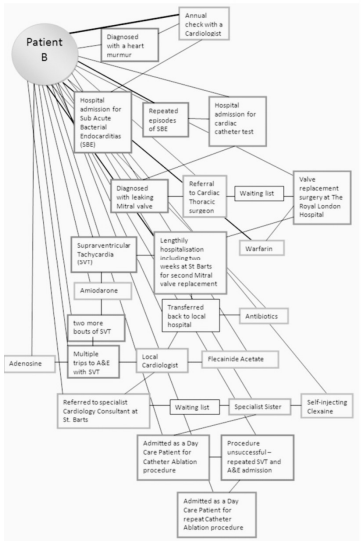
Complexity of different services that patients are required to navigate





Source: House of Commons Health Committee (2014)

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Care coordination or integration can improve selected outcomes

- 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
- Evidence that is available points to a positive impact of coordinated care on the quality of patient care and improved health or patient satisfaction outcomes

But

- 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

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Review of reviews of integrated care (Martínez-González et al. 2014)

Martínez-González et al. Integrated care programmes for adults with chronic conditions: a meta-review. Int J Qual Health Care 2014;26(5):561-70. https://academic.oup.com/intqhc/article/26/5/561/1792661

Table 4. Results of 27 systematic reviews of integrated care for different conditions and outcomes

Source: Martínez-González et al. (2014)

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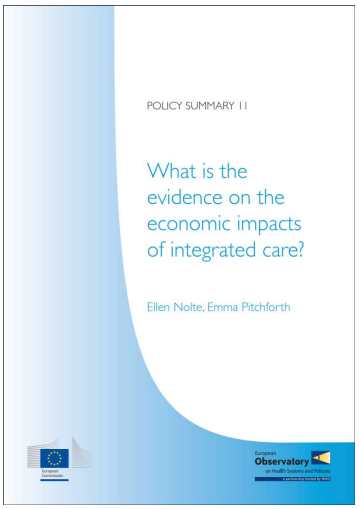
Evidence of economic impacts of integrated care remains uncertain



- Review of 19 systematic reviews/meta-analyses
- Substantial variation in conceptualisation and measurement; quality of evidence typically low (small number of studies; before-after designs)
  - *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)
  - *Intervention may increase cost*
  - *Impact of health system setting:* cost differences for discharge planning for heart failure were smaller in non-US based trials than in US-based trials (Philips et al. 2004)

Source: Nolte & Pitchforth (2014)

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Does integrated care 'work'?

- Absence of evidence does not mean absence of effect: Evaluation findings have to be placed in the broader context of implementation
  - Approach might not be suitable to achieve intended effects
    - weak links between intervention and desired outcomes
    - underlying theory and 'causal pathways'
    - evidence informing intervention development
  - Approach under-developed and/or not appropriately or fully implemented
  - Effects may differ by target population and setting
  - Length of evaluation period might not have been sufficient to demonstrate (economic) impact
  - Lack of understanding of the key processes underlying approach (what is happening 'on the ground')
  - Etc.

Source: Nolte & Pitchforth (2014)

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'Integrated care': widely but variously used in different contexts

- **Principal aim**: to link the cure and care sector to enhance outcomes for those with complex needs
- Different types of integration can occur at different levels within the system
  - *Target:* Functional, organisational, professional, clinical
  - *Hierarchical level / breadth:* Horizontal, vertical
  - *Degree:* Continuum of integration (linkage – coordination – integration)
  - *Process:* Normative, systemic

Valentijn et al. Understanding integrated care: a comprehensive conceptual framework based on the integrative functions of primary care. Int J Integr Care 2013;13:e010. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3653278/

Figure 3. Conceptual framework for integrated care based on the integrative functions of primary care

Source: Nolte & McKee (2008)

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'Integrated care': widely but variously used in different contexts

- Integrated care approaches tend to sit at the policy intersection between public health, health care and social care, and the wider regulatory framework within which these are embedded
- Integrated care seeks to attain multiple, and at times contradictory objectives
  - improve care quality and health outcomes for people with complex needs;
  - strengthen primary care and community services, and optimising their interface with specialist care;
  - make more efficient use of resources, and reduce spending on health care;
  - empower people with chronic conditions
- *Process of integration typically requires simultaneous action at different levels, involving different functions, and it develops in different phases*

Source: Nolte et al. (2015)

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Integrated care: complexity as a key defining feature

- Wide range of health service and public health interventions conceptualised as 'complex intervention'
  - health promotion interventions, e.g. health education
  - public health legislation, e.g. smoking ban
  - organisational interventions, e.g. integrated care
- Complex intervention
  - multiple components acting independently and inter-dependently ('active ingredient' not easy to identify)
  - non-linear relationships between 'intervention' and effects
  - context-dependent, requiring flexibility and local adaptation to 'work'

Source: Greenhalgh & Papoutsi (2018); Petticrew et al. (2019)

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Integrated care: complexity as a key defining feature

- Complex systems perspective: 'events within systems'
  - complexity is a feature of the system and not just a characteristic of the intervention
  - system is dynamic, with fuzzy boundaries, unpredictable and context-dependent
  - focus is on the system context within which intervention is being introduced, that is, how the intervention interacts with and impacts on the system at different levels
- Understanding of context is of key importance as the intervention interact with the system, adapts to it and might change the system itself
- Research questions will be different: from 'what works' to 'what happened'
- Need for research designs that capture this dynamic, e.g. in-depth, mixed-method case studies using ethnography to understand relationships and interactions at the different levels of the system

Source: Greenhalgh & Papoutsi (2018); Petticrew et al. (2019)

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Greenhalgh & Papoutsi. Studying complexity in health services research: desperately seeking an overdue paradigm shift. BMC Med 2018;16(1):95.
https://bmcmedicine.biomedcentral.com/articles/10.1186/s12916-018-1089-4

Table 1 . Traditional versus new paradigm approaches to researching health services and systems

Source: Greenhalgh & Papoutsi (2018)

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What does this mean for evaluation?

- "no evaluation will ever be able to address the almost infinite number of uncertainties posed by the introduction of change into a complex system"
- System lens to drive the focus of evaluation
  - Use of theory to define measures and timeframes for evaluation

Source: Moore et al. (2019)

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Petticrew et al. The Public Health Responsibility Deal: how should such a complex public health policy be evaluated? J Public Health (Oxf) 2013;35(4):495-501
https://academic.oup.com/jpubhealth/article/35/4/495/1686172

Figure 1. The Responsibility Deal Logic Model

Source: Pettircrew et al. (2013)

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What does this mean for evaluation?

- "no evaluation will ever be able to address the almost infinite number of uncertainties posed by the introduction of change into a complex system"
- System lens to drive the focus of evaluation
  - Use of theory to define measures and timeframes for evaluation
  - Consider starting point: is it likely that measurable change will occur?
  - Conceptualise what 'effectiveness' might look like; consider range of outcomes
  - Consider possible differential impacts at different levels of the system and link micro/meso/macro level interactions and dynamics
  - Multiple follow-up measures to capture dynamics and non-linearity of outcomes over time
  - Assess implementation process alongside evaluation of impact: understand what 'intervention' and activities 'do' (and how this will affect outcomes)

Source: Moore et al. (2019)

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http://journals.sagepub.com/home/hsr

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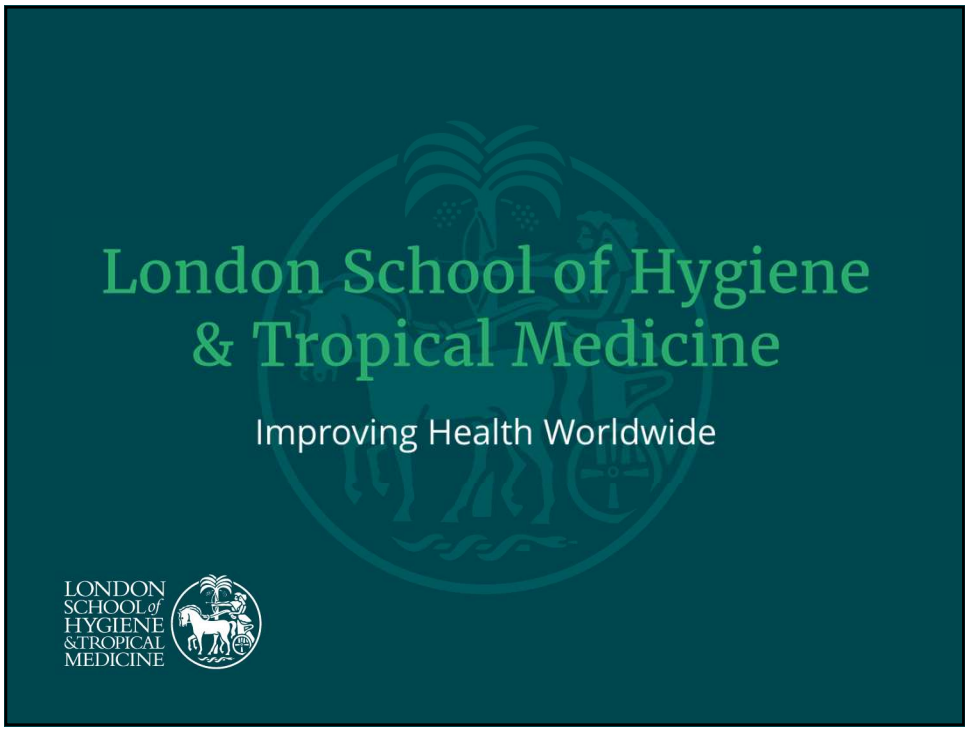

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