Virtual impact – evaluation approaches in the digital age of healthcare

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Overview

- **Why** evaluation matters in digital health care in an age of innovation and disruption
- **What** should be evaluated
- **How** evaluation can be conducted – illustrated by an evaluation of the after hours GP helpline, a consumer-initiated inbound call triage and advice service
- **Using evaluation** to improve policy and practice
Transformation of healthcare in the 21st century
“Evaluation should be seen as a process of knowledge construction which rests on the use of rigorous empirical enquiry....the knowledge produced is reliable, responsive to the needs of policy and program stakeholders & can be applied by these stakeholders.”

Why evaluation matters

• To confirm a new healthcare service or innovation is responsive to consumer needs
• To confirm that it is evidence-based

• To determine if it is implemented as planned and intended
• To assess and assure quality
• To assess and assure safety
• To understand consumer/patient experience
• To understand provider/clinician experience

• To determine effectiveness – for consumers, for health services, for health systems
• To provide transparency and accountability
• To determine value for money
• To shape health policy
Telephone triage and advice services now commonplace in primary care – but represent an innovation

- Manage demand for healthcare services
- Improve access to professional health advice
- Operating in many countries: UK, USA, Scandinavian region, France, Canada, New Zealand, India
What distinguishes this mode of telehealth from traditional telemedicine?

<table>
<thead>
<tr>
<th>Telephone triage and advice services</th>
<th>Telemedicine/telehealth encounters</th>
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<td>Consumer-initiated, on-demand, including in after hours period</td>
<td>Health provider organized and may involve initial health provider to provider contact prior to patient contact</td>
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<td>Consumer defines urgency of need</td>
<td>Health provider initiates or confirms needs for the consultation</td>
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<td>Open to general population (patient unknown to provider, provider unknown to patient)</td>
<td>Available to a specified patient population (patient and provider are known to each other)</td>
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<td>Telephone delivery (patient unseen) - computerised algorithms used to determine urgency and assist clinical decisions</td>
<td>Video-conference delivery (patient and provider are visible) - personalised advice and diagnosis</td>
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Telephone triage and advice in Australia

- First nurse advice and triage telephone service established in Western Australia in 2002; followed by 13 HEALTH Queensland in 2006, healthdirect in 2008 (NSW, SA, WA, TAS, ACT, NT), NURSE-ON-CALL Victoria 2008
- In 2011 a national general practitioner (GP) consultation and referral element was added to nurse helplines on evenings, weekends and public holidays the afterhours GP helpline
In after hours period callers/patients triaged by nurse as needing to see

- GP immediately, within 4 hours or within 24 hours could speak to a telephone GP for further assessment, advice and referral (2011-2013)
- triage nurse handles to completion those needing to attend the Emergency Department (ED) immediately and those who do not require GP attention for more than 24 hours, or self-care

- Averages 3,000 calls per week taken by GP, 1.5 million per year to nurse line; 1/3 patients are children aged under 10 years, 1/4 are under 5 years of age

- Nurses use clinical software package for phone triage; GPs clinically autonomous

- Online symptom checker

- Change in scope of practice from September 2016
Development of an evaluation framework at the commencement of service - vital to commence planning for evaluation while planning the service or innovation

Then undertook an intensive 13 month period of evaluation

We identified a range of domains of interest, with domains falling across the three area of formative, implementation and impact evaluation –

- Very hard to establish longer term outcomes for consumers, health services and systems
Key features of evaluation

- **Consultation with key stakeholders**: what is important, what are key concerns that should be explored; what are the “unknowns”?
- **Literature review** – Comparable models, defining features, evidence on what works and does not work; existing evidence around the world on domains of interest to the new Australian service
Key features of evaluation continued

- Access and use – population and identified disadvantaged groups
- Operational efficiency
- Extent to which service was implemented as planned
- Resourcing, workforce training and preparedness
- Patient experience
- Provider experience and attitudes (Helpline GPs and nurses)
- Community-based service provider (GP) experience and attitudes
Key features of evaluation continued

- Safety
- Quality and appropriateness of triage and advice
- Impact on other service use:
  - MBS after hours item use
  - ED after hours use
  - time series data, before and after commencement of the service
- Integration with broader health system
Methods

- Mixed: quantitative and qualitative approaches
- Ten separate studies
- A realist approach seeking to understand the contextual factors associated with “success” at four levels:
  - Policy
  - Service
  - Provider
  - Consumer
The evaluation sub studies

- A - Stakeholder consultations
  - Used social media to recruit consumers

- B - Safety and appropriateness of nurse and GP telephone triage and advice
  - Mystery shoppers/simulated patients

- C - Development of a quality improvement model using the simulated patient method

- D - Safety and appropriateness and communication assessment of nurse and GP telephone triage and advice regarding paediatric patients
  - Mystery shoppers/simulated patients

- E - Implementation of a quality improvement model to assess safety and appropriateness and communication skills of nurse and GP telephone triage and advice

- F - A profile of users of the after hours GP helpline

- G - Impact of the after hours GP helpline on self-reported emergency department utilisation and compliance with GP advice

- H - Consumer valuation and cost considerations of the after hours GP helpline

- I - GP provider perceived benefits and professional characteristics of role

- J - Consumer motivation and experiences

- And a “rolling” literature review throughout
What we learnt: “success factors” necessary to integrate the helpline in Australian health system
Modern lessons for a digital age of healthcare

- So much data.....unprecedented, powerful
- Vast capacity to capture and store data
- Monitoring trends over time, real-time (in outcomes, quality safety) and collecting baseline indicators has never been so easy
- An interconnected world facilitates collection of information on consumer and provider experience

- BUT, huge challenges
- Privacy, protection of personal information, fraud, identity theft
- Ethical use of data
- Management of vast quantities of data
- Disseminating results – where and who cares?
- Shaping policy – policy makers drowning in information and under pressure from a digitally connected and disillusioned constituency
- Disruptive industries – “Uber health”- who is evaluating?
“Timeless” lessons for a digital age of healthcare

- Evaluation is important when rapid innovation and disruption of traditional practice is underway

- Start evaluation at the beginning – consider consumer need, stakeholder acceptability and existing evidence

- Implementation evaluation is essential – if your innovation isn’t achieving desired health effects, consumer uptake or service change it may be implementation that has failed rather than the intervention

- Don’t forget providers – often we are focused on consumer experience and outcomes – but if it isn’t engaging providers likely not to deliver desired outcomes or win political support!

- Context is everything - if we don’t understand the contextual factors affecting “virtual care” uptake, implementation, impact and sustainability we will never be able to move an innovation to mainstream use as an integrated part of the broader health system
Finally…

- Evaluate early
- Evaluate often
- Evaluate for use: to aid decision-making and build an evidence base
- Stay abreast of technological trends – we are in a digital data-driven age
Further information:

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Recent publications based on the evaluation of the after hours GP helpline

- McKenzie R. Consumer awareness, satisfaction, motivation and perceived benefits from using an after hours GP helpline – a mixed methods study – Australian Family Physician 2016; 45:512-517.