It's time to break our addiction to adoption: Reframing HTA as the cornerstone of 'resource stewardship'

Stirling Bryan, PhD

Disclosures and Acknowledgements

- I am not aware of any actual or potential conflicts of interest in relation to this presentation.

- Some of my relevant current activities:
  - Chair, CADTH's Health Technology Expert Review Panel
  - Member, BC's Health Technology Assessment Committee
  - Director, VCH's Centre for Clinical Epidemiology & Evaluation

- Collaborators on this topic
  - Graham Scotland, University of Aberdeen; Craig Mitton, UBC; Mohsen Sadatsafavi, UBC; Cam Donaldson, Glasgow Caledonian University; Laurie Goldsmith, SFU; Rick Sawatzky, TWU
  - And many, many more…

CENTRE for Clinical Epidemiology and Evaluation

Overview of talk

Technology adoption

Technology management

Pathway management

MOVING FROM ‘ADOPTION’ TO ‘MANAGEMENT’

CENTRE for Clinical Epidemiology and Evaluation

Definition and premise

- Definition: ‘adoption’
  - Technology coverage or reimbursement decisions
  - e.g., Should a new medical technology be available for use in the health care system?

Provinces to cover costs of cystic fibrosis drug

SAHAR FATIMA AND KELLY GRANT
The Globe and Mail

Published Friday, May. 30 2014, 8:27 PM EDT
Last updated Friday, May. 30 2014, 8:31 PM EDT

Alberta's health minister has reached a tentative deal that will allow provinces to cover the costs of an expensive cystic fibrosis drug a year after a 12-year-old Ontario girl lobbied for the funding.

Alberta-led negotiations on behalf of all provinces to get Boston-based Vertex Pharmaceuticals Inc. to sell them Kalydeco at a price that they could afford to pay on their drug plans. The drug treats symptoms of a rare kind of cystic fibrosis, an incurable and fatal disease that fills the lungs with thick, sticky mucus.

MORE RELATED TO THIS STORY

- Girl pleads for Ontario to pay for $350K drug to fight rare disease
- ANDRÉ PICARD Drug-funding sob stories make for good reading, but we need hard evidence to set public policy

CENTRE for Clinical Epidemiology and Evaluation

Definition and premise

- Definition: ‘adoption’
  - Technology coverage or reimbursement decisions
  - e.g., Should a new medical technology be available for use in the health care system?

- The premise:
  - Health Technology Assessment (and health economics) researchers devote a disproportionate amount of their time and energy to technology adoption questions

Technology and cost growth

- Technological change
  - One of the largest contributors to cost growth
  - And so efforts to address cost growth cannot ignore technology
- Health technology assessment (HTA)
  - Both Canada and the UK have long (and glorious) HTA traditions
- But… the HTA 'industry' has…
  - become obsessed by technology adoption questions
  - largely ignored technology management issues
- An additional driver of cost growth is…
  - Rapid increases in utilization of existing technology
  - e.g., annual increases over recent years in medical imaging: 6.9% for MRI and 6.2% for CT

CENTRE for Clinical Epidemiology and Evaluation

HEALTH ECONOMICS
Health Econ. **23**: 379–383 (2014)
Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/hec.3034

EDITORIAL

BREAKING THE ADDICTION TO TECHNOLOGY ADOPTION

STIRLING BRYAN[a,b,c,*], CRAIG MITTON[a,b] and CAM DONALDSON[d]

[a]*School of Population & Public Health, University of British Columbia, Canada*
[b]*Centre for Clinical Epidemiology & Evaluation, Vancouver Coastal Health Research Institute, Canada*
[c]*Health Economics Research Unit, University of Aberdeen, UK*
[d]*Yunus Centre for Social Business & Health, Glasgow Caledonian University, UK*

ABSTRACT

A major driver of cost growth in health care is the rapid increase in the utilisation of existing technology and not simply the adoption of new technology. Health economists and their health technology assessment colleagues have become obsessed

Our argument is that, in order to achieve the goals of efficiency and equity through technology use, much greater analytic emphasis is required on the technology management issue, with analysts breaking out of the adoption 'addiction'. This issue will grow more and more in importance as entities, such as clinical care groups

1. BACKGROUND

The focus of this paper is healthcare technology (drugs, devices, procedures and screening) and, specifically, its adoption and use in the system. Our premise is that health economists and their colleagues in the health technology assessment (HTA) 'industry' have become obsessed by adoption questions – that is, should a new technology be available for routine use in the healthcare system? – and have largely ignored the 'technology management' questions – that is, once in the system, how do we ensure cost-effective utilisation?

Our argument is that, in order to achieve the goals of efficiency and equity through technology use, much greater analytic emphasis is required on the technology management issue, with analysts breaking out of the adoption 'addiction'. This issue will grow more and more in importance as entities, such as clinical care groups in England and integrated care networks more globally, find that budget restrictions mean that service developments cannot simply be 'added-on' to their portfolios without consideration of from where, within such budgets, the required resources will come.

CENTRE for Clinical Epidemiology and Evaluation

Technology management questions

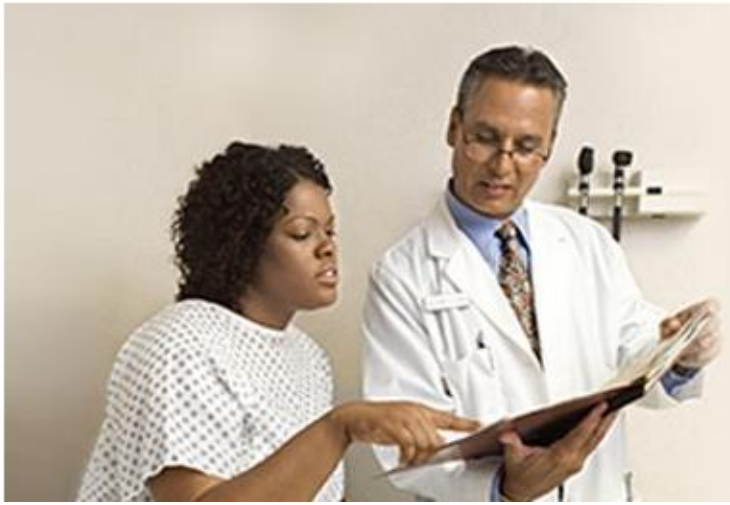
- Assessment:
  - Does the technology, as currently used, deliver value?
- Improvement:
  - Can more cost-effective utilization of the technology be achieved through modification of the clinical protocol?
- Withdrawal:
  - Should the technology no longer be in routine use and, hence, a process of withdrawal commenced?

Choosing Wisely Canada

SEARCH

NEWS ABOUT PHYSICIAN RECOMMENDATIONS PATIENT MATERIALS PARTNERS RESOURCES

Choosing Wisely Canada is a campaign to help physicians and patients engage in conversations about unnecessary tests, treatments and procedures.



Sometimes LESS is more.

Ask your doctor:

Do I really need this test, treatment or procedure?
What are the downsides?
Are there simpler, safer options?
What happens if I do nothing?

LEARN MORE

CENTRE for Clinical Epidemiology and Evaluation

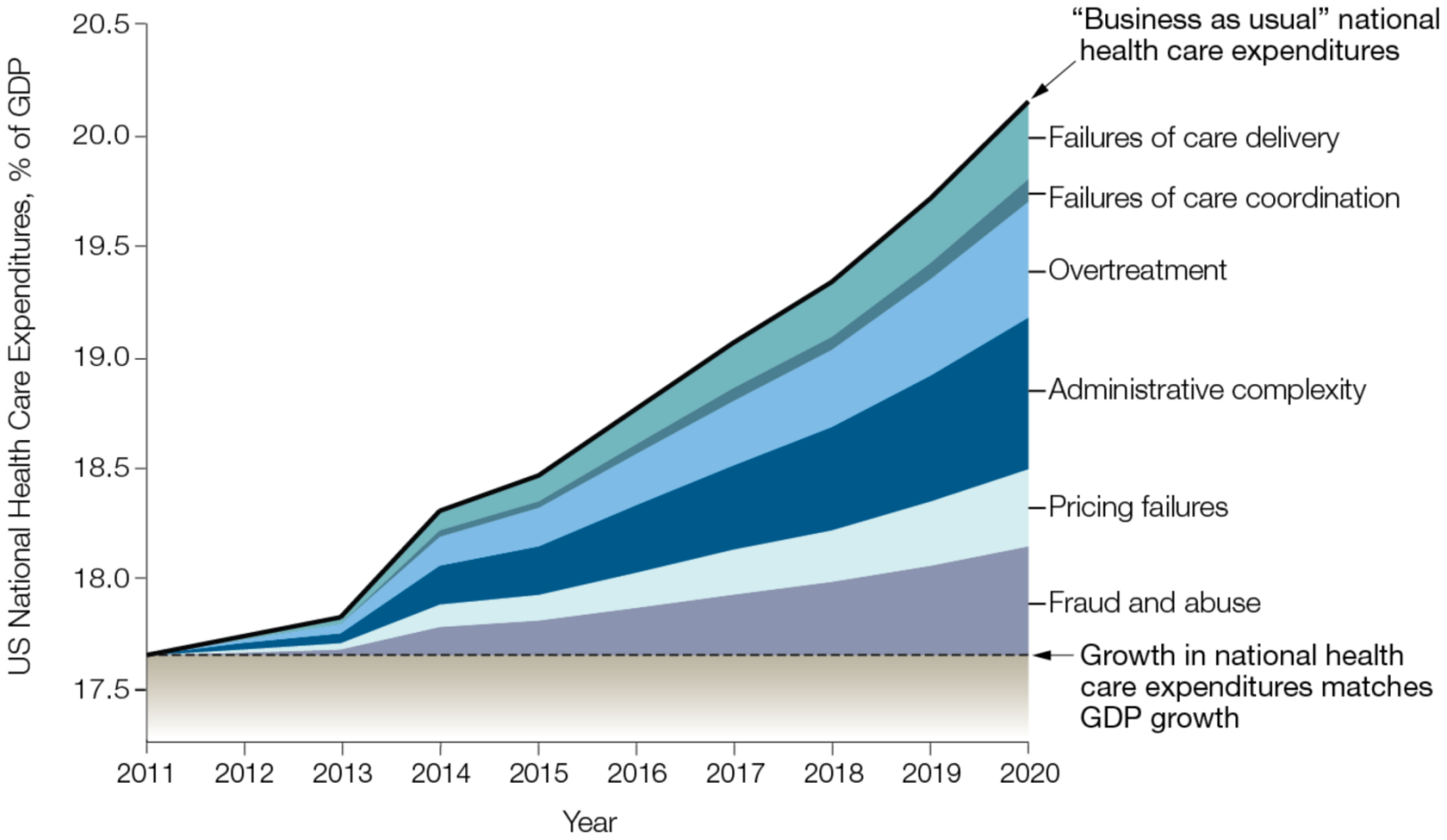
Waste in US Health Care

Category	Cost to US Health Care (2011 $B)
Overtreatment	**$158 - $226**
Failures to Coordinate Care	$25 - $45
Failures in Care Delivery	$102 - $154
Excess Administrative Costs	$107 - $389
Excessive Health Care Prices	$84 - $178
Fraud and Abuse	$82 - $272
Total Waste	$558 - $1263
As % of Total Spending	21% - 47%

Berwick & Hackbarth JAMA 2012;307(14):1513-1516

CENTRE for Clinical Epidemiology and Evaluation

Waste in US Health Care

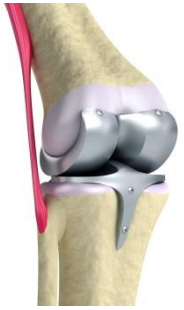


Berwick & Hackbarth JAMA 2012;307(14):1513-1516

CENTRE for Clinical Epidemiology and Evaluation

Technology management example: knee arthroplasty

- One of the most common elective surgeries in Canada
- Some 20% of patients indicate ‘dissatisfaction’, with ongoing pain and/or physical limitations
- Improvement work?
  - Information and expectations
  - Rehabilitation protocol
  - Patient selection and shared decision making



CENTRE for Clinical Epidemiology and Evaluation

By David Arterburn, Robert Wellman, Emily Westbrook, Carolyn Rutter, Tyler Ross, David McCulloch, Matthew Handley, and Charles Jung

DOI: 10.1377/hlthaff.2011.0686
HEALTH AFFAIRS 31,
NO. 9 (2012): 2094–2104

Introducing Decision Aids At Group Health Was Linked To Sharply Lower Hip And Knee Surgery Rates And Costs

David Arterburn (arterburn.d@ghc.org) is a general internist and associate investigator at Group Health Research

Emily Westbrook is the manager of the Research Project Management Office at Group Health Research Institute.

Carolyn Rutter is a biostatistician and senior investigator at Group Health Research Institute and an affiliate professor at the University of Washington.

Tyler Ross is the manager of research programming at Group Health Research Institute.

ABSTRACT **Decision aids are evidence-based sources of health information that can help patients make informed treatment decisions. However, little is known about how decision aids affect health care use when they are**

introduction of decision aids was associated with 26 percent fewer hip replacement surgeries, 38 percent fewer knee replacements, and 12–21 percent lower costs over six months. These findings support the

replacement surgeries, 38 percent fewer knee replacements, and 12–21 percent lower costs over six months. These findings support the concept that patient decision aids for some health conditions, for which treatment decisions are highly sensitive to both patients' and physicians' preferences, may reduce rates of elective surgery and lower costs.

More than twenty-seven million Americans have osteoarthritis—a major cause of work disability and reduced quality

need for reoperation, and benefits, such as symptom reduction and functional improvement. These factors make this particular decision an excellent candidate for high-quality shared deci-

CENTRE for Clinical Epidemiology and Evaluation

MOVING FROM 'TECHNOLOGY' TO 'PATHWAY'

CENTRE for Clinical Epidemiology and Evaluation

Overview of talk

Technology adoption

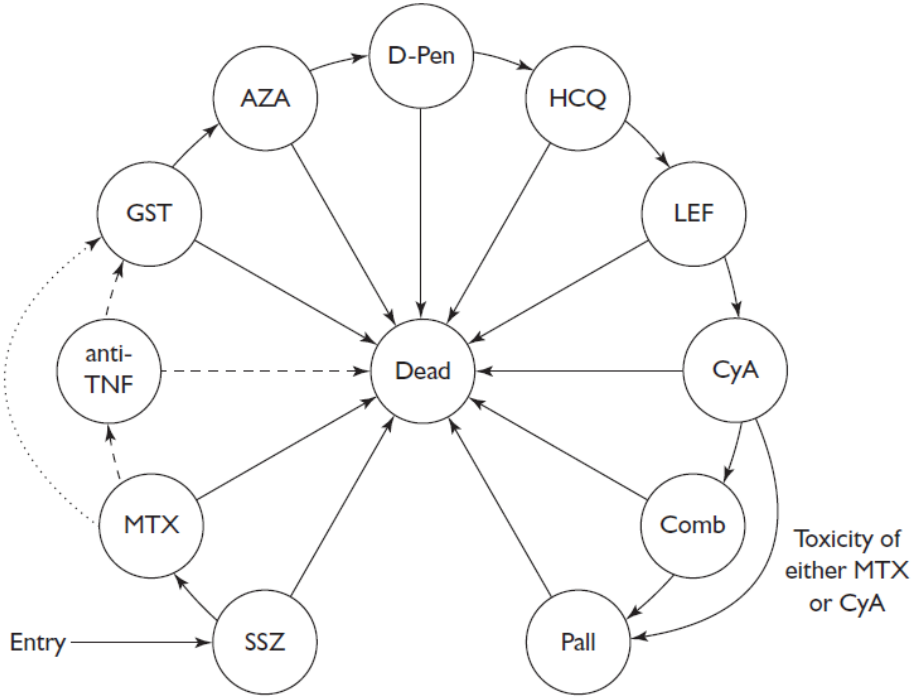
Technology management

Pathway management

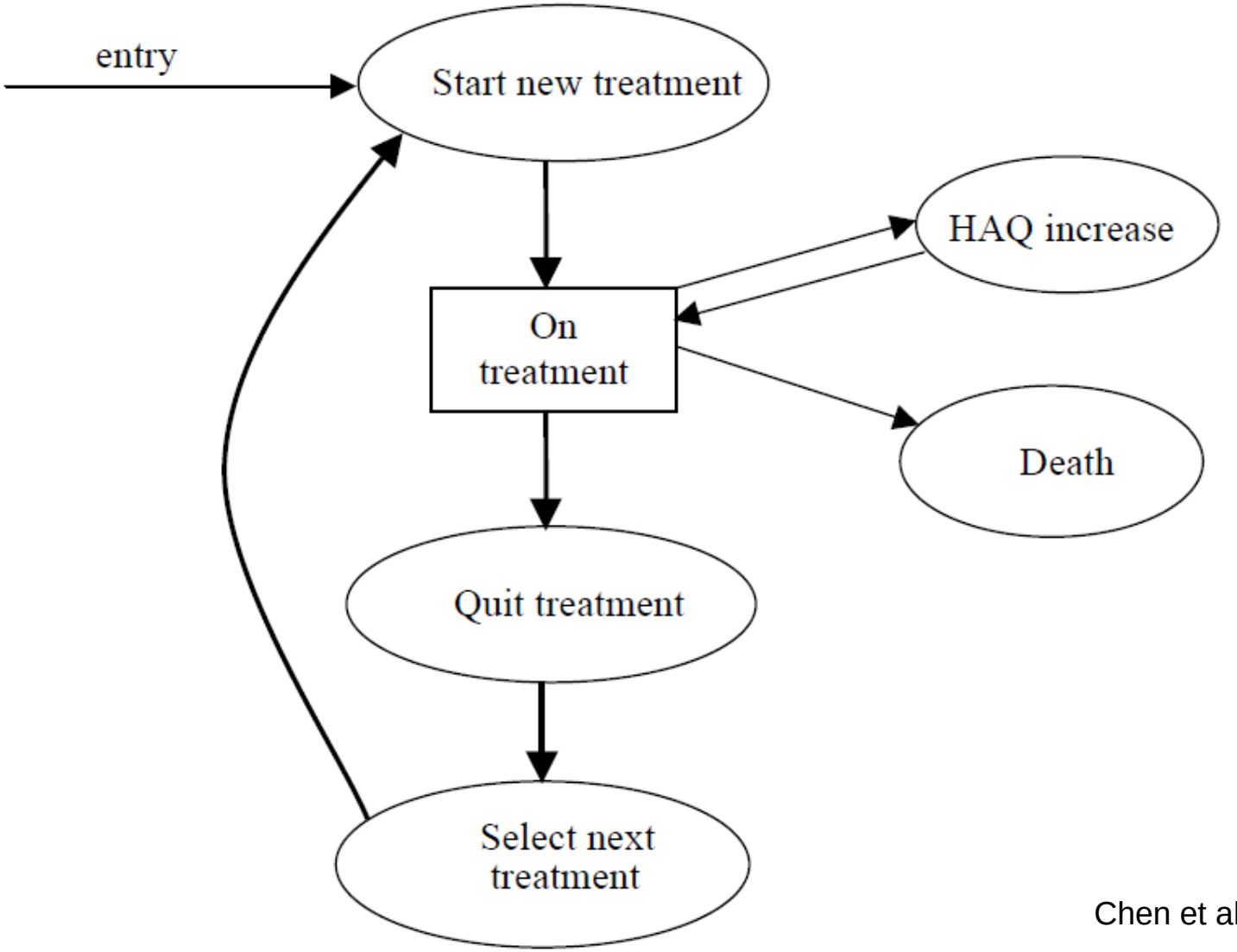
Pathway management

- Clinical pathway: defined sequence(s) of use of alternative health technologies

- Pathway modelling becomes the foundation of HTA activity



Barton et al, 2004



Chen et al, 2006

Pathway management and 'resource stewardship'

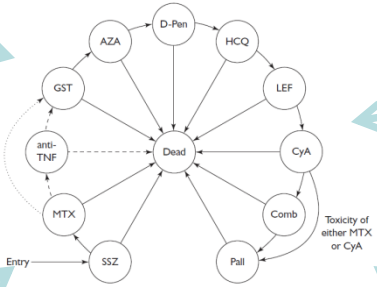
- 'Resource stewardship'
  - A culture where resource scarcity is openly acknowledged and recognized as a shared responsibility
- Pathway model development is a collaborative effort
  - Active engagement of, and ownership by, key stakeholders, including clinical leaders, policy makers, patients and analysts

Stewardship facilitated through pathway modelling

Clinical leaders and care teams

HTA analysts

Policy makers and managers



Industry

Patients and carers

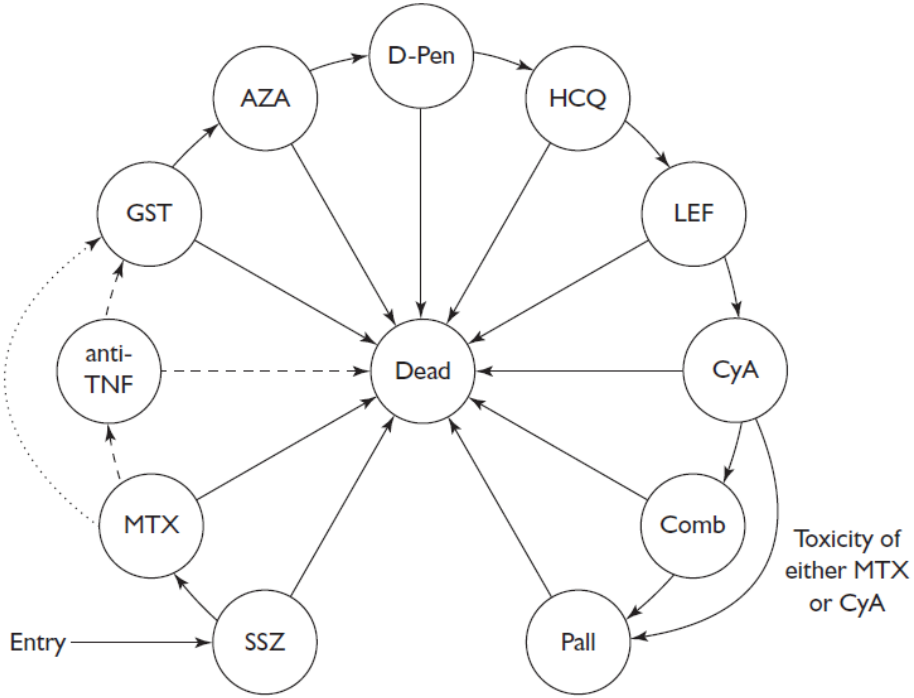
Pathway management and 'resource stewardship'

- 'Resource stewardship'
  - A culture where resource scarcity is openly acknowledged and recognized as a shared responsibility
- Pathway model development must be a collaborative effort
  - Active engagement of, and ownership by, key stakeholders, including clinical leaders, policy makers, patients and analysts
- The reference pathway model defines the resource envelope
  - Constraints on pathway reconfiguration are transparent
- Proposed changes to the clinical pathway evaluated using the reference model
  - Opportunity cost considered explicitly

CENTRE for Clinical Epidemiology and Evaluation

Pathway management example

In RA, recent evidence suggests anti-TNF, biological treatment (infliximab) not superior to conventional combination therapy (MTX, SSZ, HCQ)



Eriksson et al, 2013

Barton et al, 2004

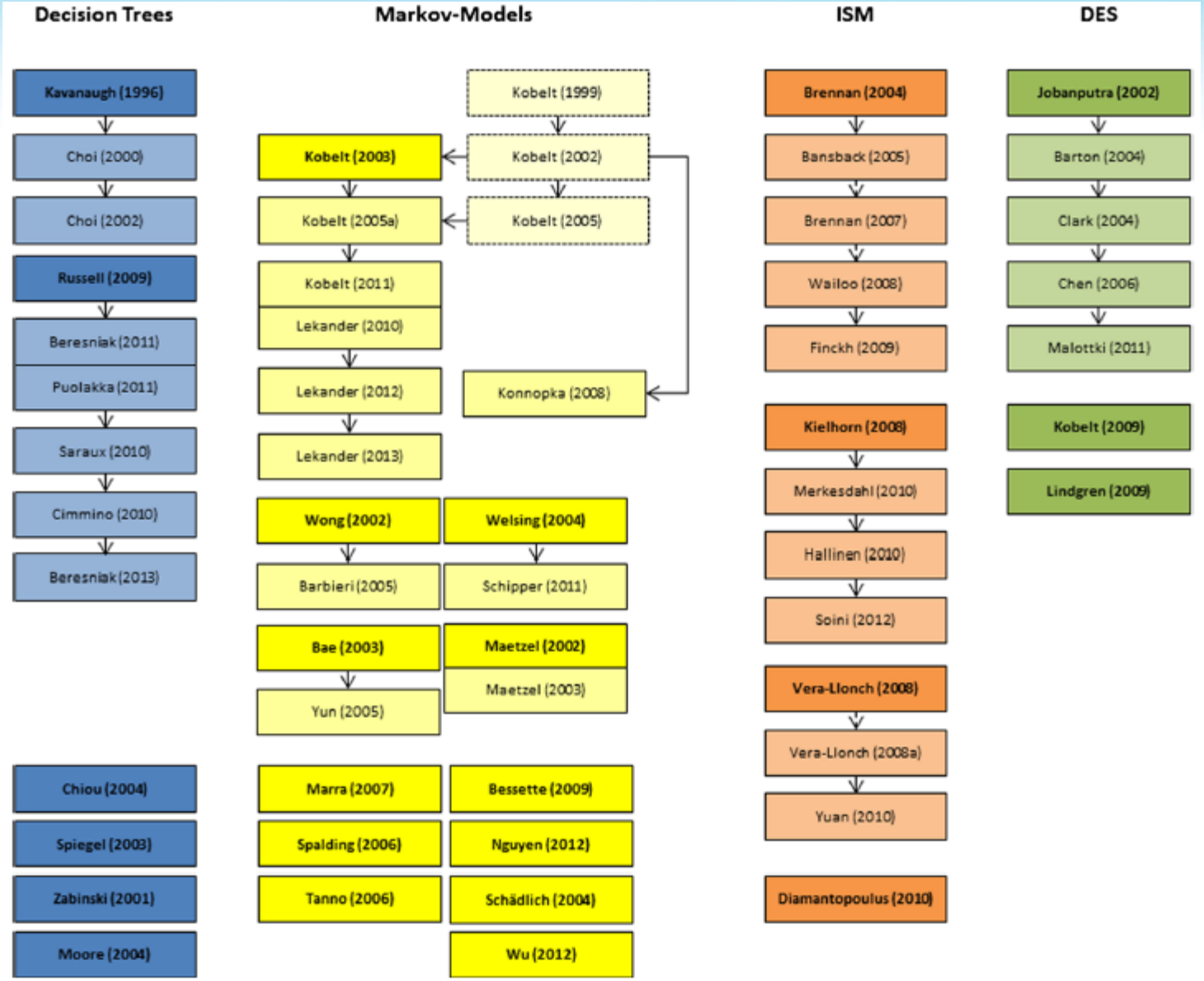


Figure 2 Family tree of analyzed publications. Background colors represent the different modeling techniques (blue = decision trees, yellow = Markov models, orange = ISM, green = DES) and bold letters and bright colors indicate an independently developed model.

Scholz & Mittendorf, 2014

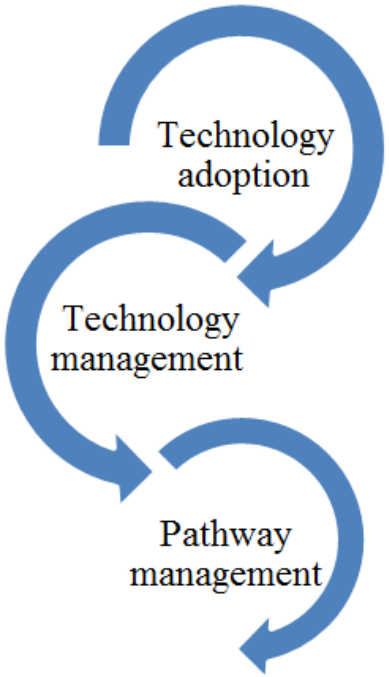
CENTRE for Clinical Epidemiology and Evaluation

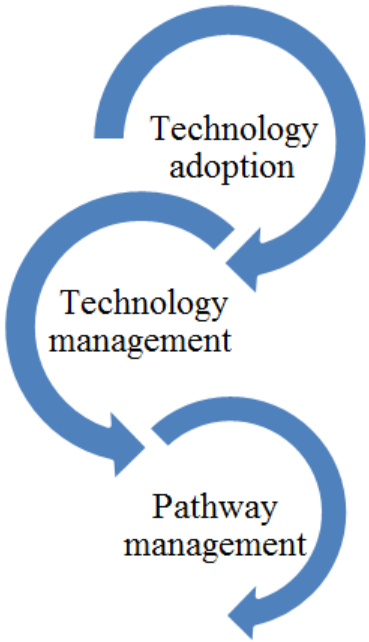
Model validation…

"Computer models are no different from fashion models… seductive, unreliable, easily corrupted and they lead sensible people to make fools of themselves."

Jim Hacker, 'Yes, Prime Minister'

CENTRE for Clinical Epidemiology and Evaluation

	Scope: Technology	Scope: Care pathway	Opportunity cost
	Single technology ↓ Multiple technologies	Single point in care pathway ↓ All points on care pathways	Implicit ↓ Explicit within care pathway

	Evidence base	Methods	Complexity	HTA role in agenda setting
	Predominantly clinical trials	Simple, partial models	Low	Passive
	Multiple sources of evidence	Whole service models	Considerable	Active

In conclusion

- Let's break our addiction to technology adoption
- Pathway modelling as a centrepiece of HTA work supports development of a stronger 'resource stewardship' culture
- The mechanism:
  - Quantification of resource commitment to a given clinical area
  - Explicit consideration of opportunity cost
  - Simultaneous consideration of investments and disinvestments
  - Analysis of technologies at different points in a clinical pathway, or even across different disease pathways

CENTRE for Clinical Epidemiology and Evaluation

stirling.bryan@ubc.ca

CENTRE for Clinical Epidemiology and Evaluation