

Making Smart Choices: Reducing Health Costs and Improving Health

Ian Scott

Director of Internal Medicine and Clinical Epidemiology,
Princess Alexandra Hospital
Associate Professor of Medicine,
University of Queensland,
Brisbane



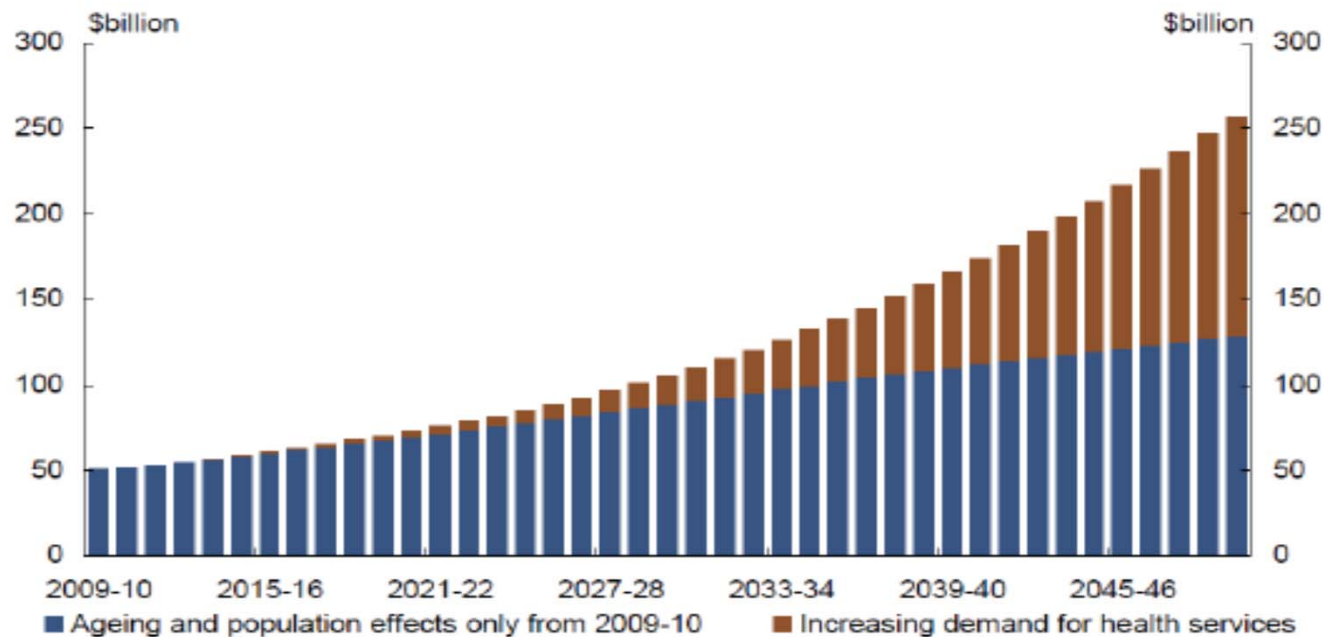
Melbourne Institute Forum
Canberra
10/9/13



Increasing expenditure

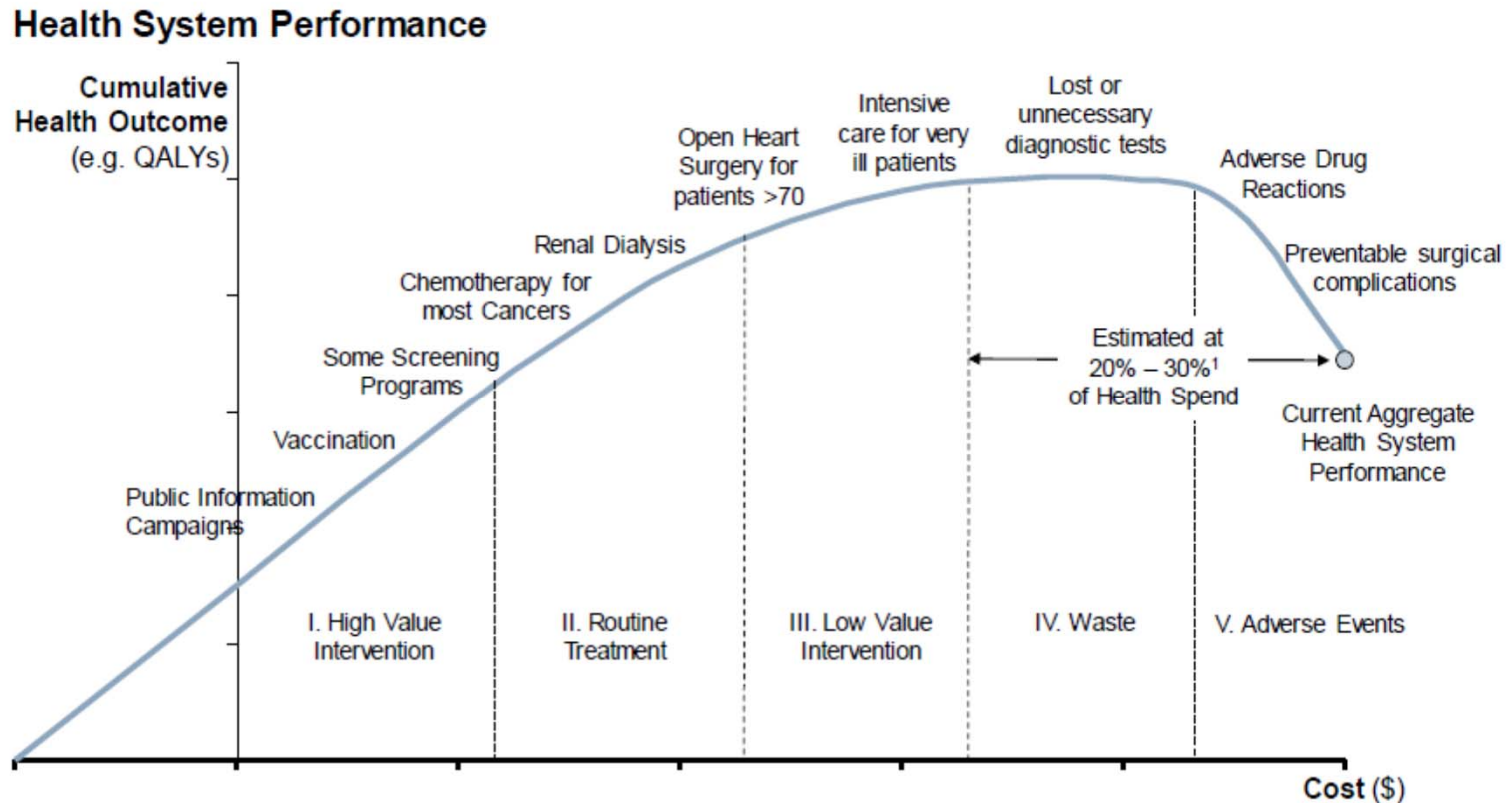
- Annual healthcare expenditure (priced in 2001 dollars) has increased by 68% over 10 years to 2011-12
 - \$77.5 billion to \$130 billion (8.2% to 9.3% GDP)
 - Annual growth of 6.8% far exceeds growth in GDP of 3.5%

Total Australian Government health expenditure, with and without non-demographic growth (in 2009-10 dollars)



Source: Australian Government, 2010 Intergenerational Report

Declining return on investment



1. Institute of Medicine 2012

Waste - healthcare spending that could be eliminated without harming patients or reducing the quality of care that people receive

Efficiency - maximisation of health outcome benefit for time and resources consumed

Declining return on investment

The Implications of Regional Variations in Medicare Spending. Part 1: The Content, Quality, and Accessibility of Care

Elliott S. Fisher, MD, MPH; David E. Wennberg, MD, MPH; Thérèse A. Stukel, PhD; Daniel J. Gottlieb, MS; F.L. Lucas, PhD;
and Ételle L. Pinder, MS

Conclusions: Regional differences in Medicare spending are largely explained by the more inpatient-based and specialist-oriented pattern of practice observed in high-spending regions. Neither quality of care nor access to care appear to be better for Medicare enrollees in higher-spending regions.

The Implications of Regional Variations in Medicare Spending. Part 2: Health Outcomes and Satisfaction with Care

Elliott S. Fisher, MD, MPH; David E. Wennberg, MD, MPH; Thérèse A. Stukel, PhD; Daniel J. Gottlieb, MS; F.L. Lucas, PhD;
and Ételle L. Pinder, MS

Conclusions: Medicare enrollees in higher-spending regions receive more care than those in lower-spending regions but do not have better health outcomes or satisfaction with care. Efforts to reduce spending should proceed with caution, but policies to better manage further spending growth are warranted.

Declining productivity



Australian health care workforce (excluding community service workers)

↑ 22% from 1990-2010

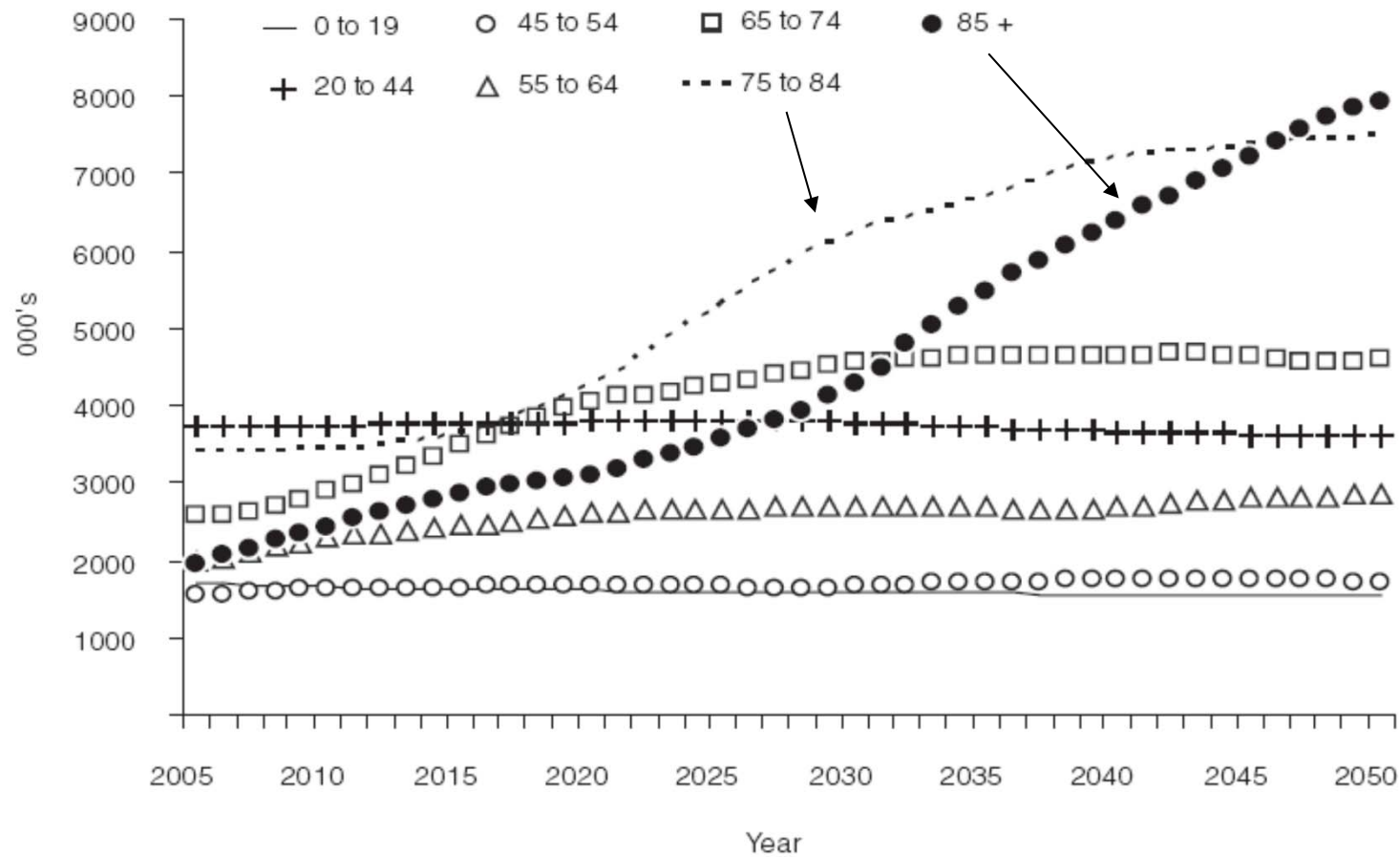
- 5.4% to 6.6% of all employed persons

- more than double the growth in population

Productivity Commission 2005 - little change in productivity over past 10 yrs

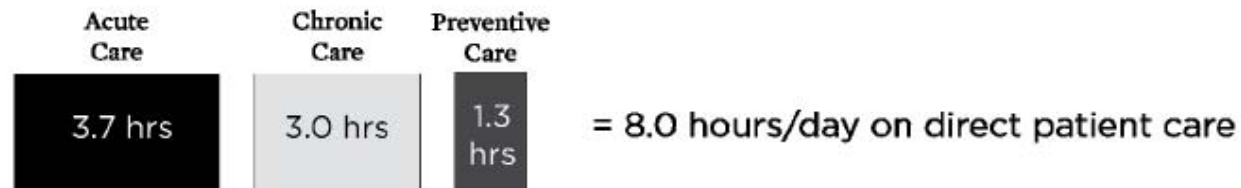
Changing demographics

6 Growth in demand for hospital bed-days, by age, Australia, 2005 to 2050



Increasing workload

The average family physician spends...



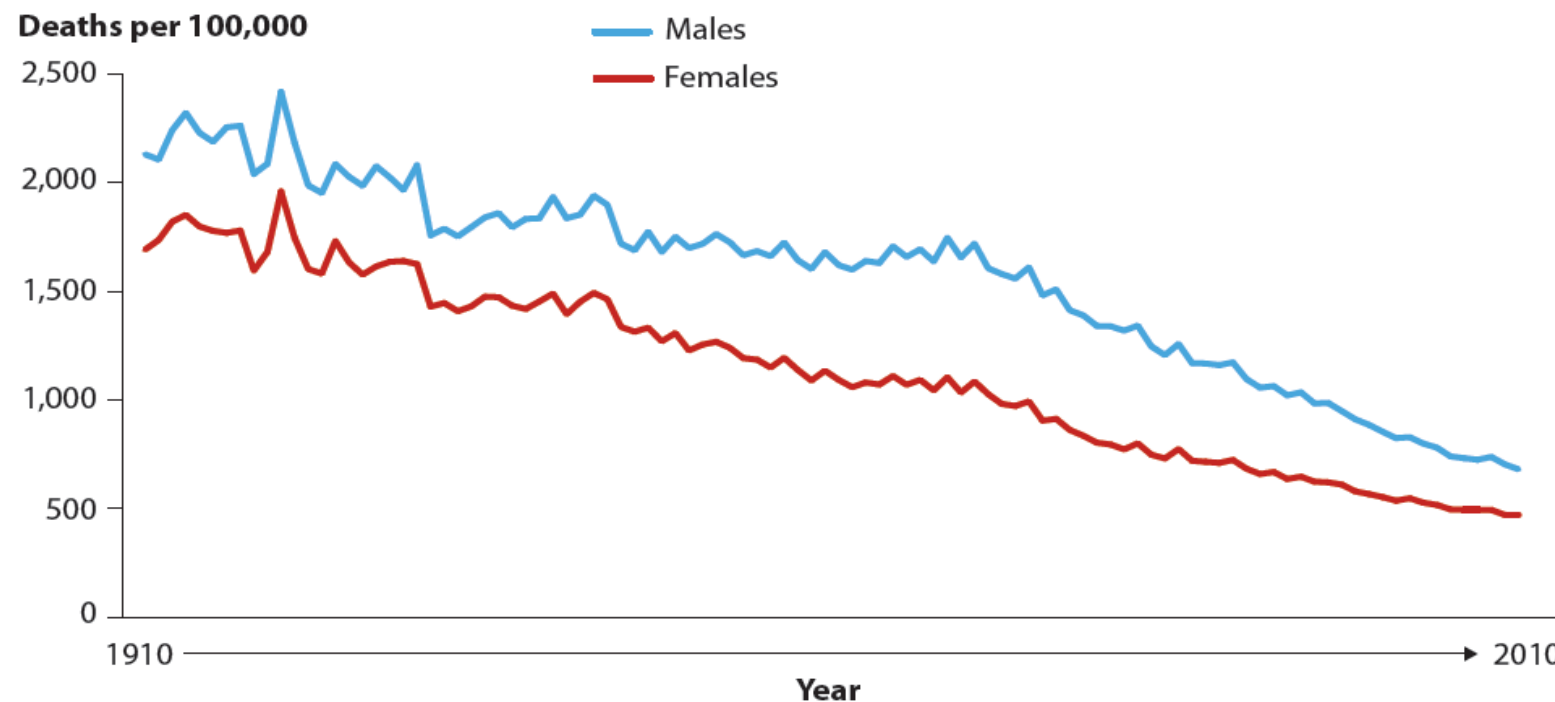
Following guidelines would require that physician to spend...



Yarnell et al 2009

Flattening in mortality curve

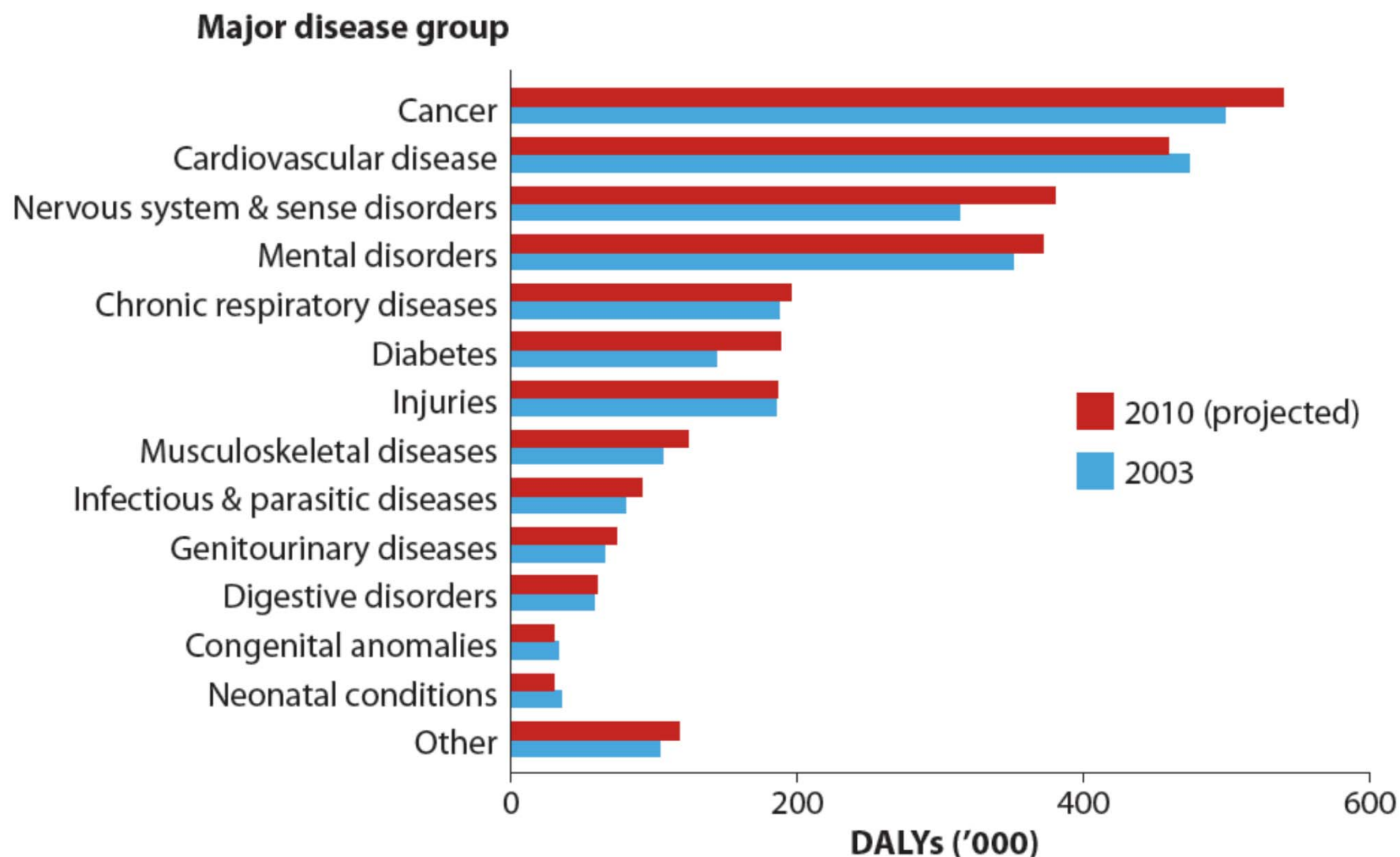
Age-standardised population mortality rate has decreased by no more than 1.5% over last 10 years



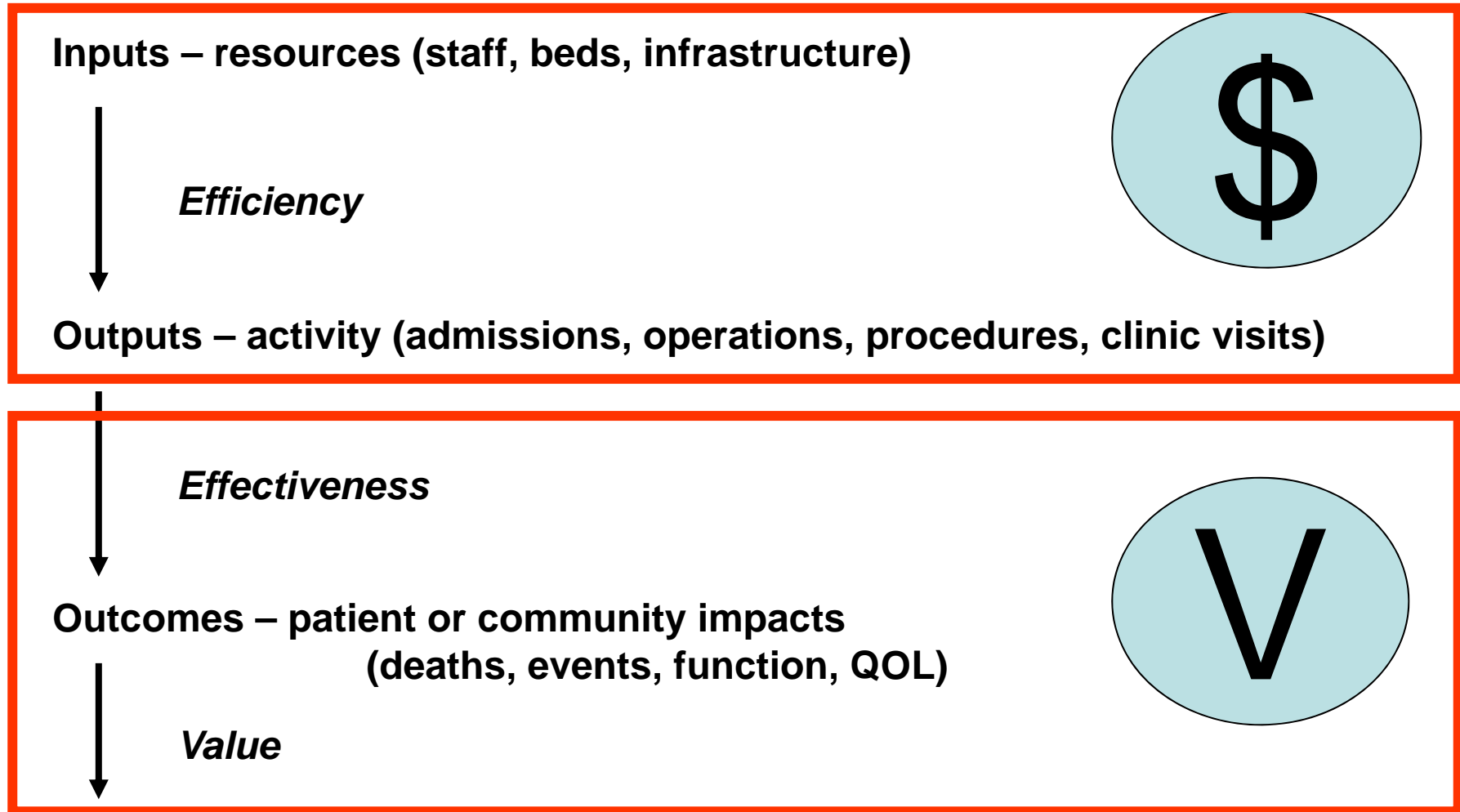
Note: Rates are age-standardised to the Australian estimated resident population for 2001.

Sources: ABS 2009f; ABS 2010c; AIHW 2010e; ABS 2011l.

Little impact on disability burden



A re-orientation



Outcomes that are valued among individuals or communities with minimal harm at an acceptable cost

How do we choose?

- High value interventions
 - Maximal health gain per unit cost
 - Corollary: Avoid low value interventions
- High risk populations
 - Maximal health gain according to baseline disease risk
 - Corollary: Avoid over-treating low risk populations
- Achievable and worthwhile health gains within limited lifespan
 - Goal-centred care of populations with advanced chronic diseases or terminal illness
 - Corollary: Avoid interventions at end of life if little or no prospect of prolonging survival or improving quality of life
- Efficient care delivery systems
 - Deliver right care to right patient by right provider in right setting at the right time at lowest cost
 - Corollary: Redesign or dismantle inefficient systems
- Population values, preferences ~ adherence/alignment
 - Ensure healthcare system perspective matches that of target populations
 - Corollary: Do not provide care intended recipients (with capacity) do not value and will not accept

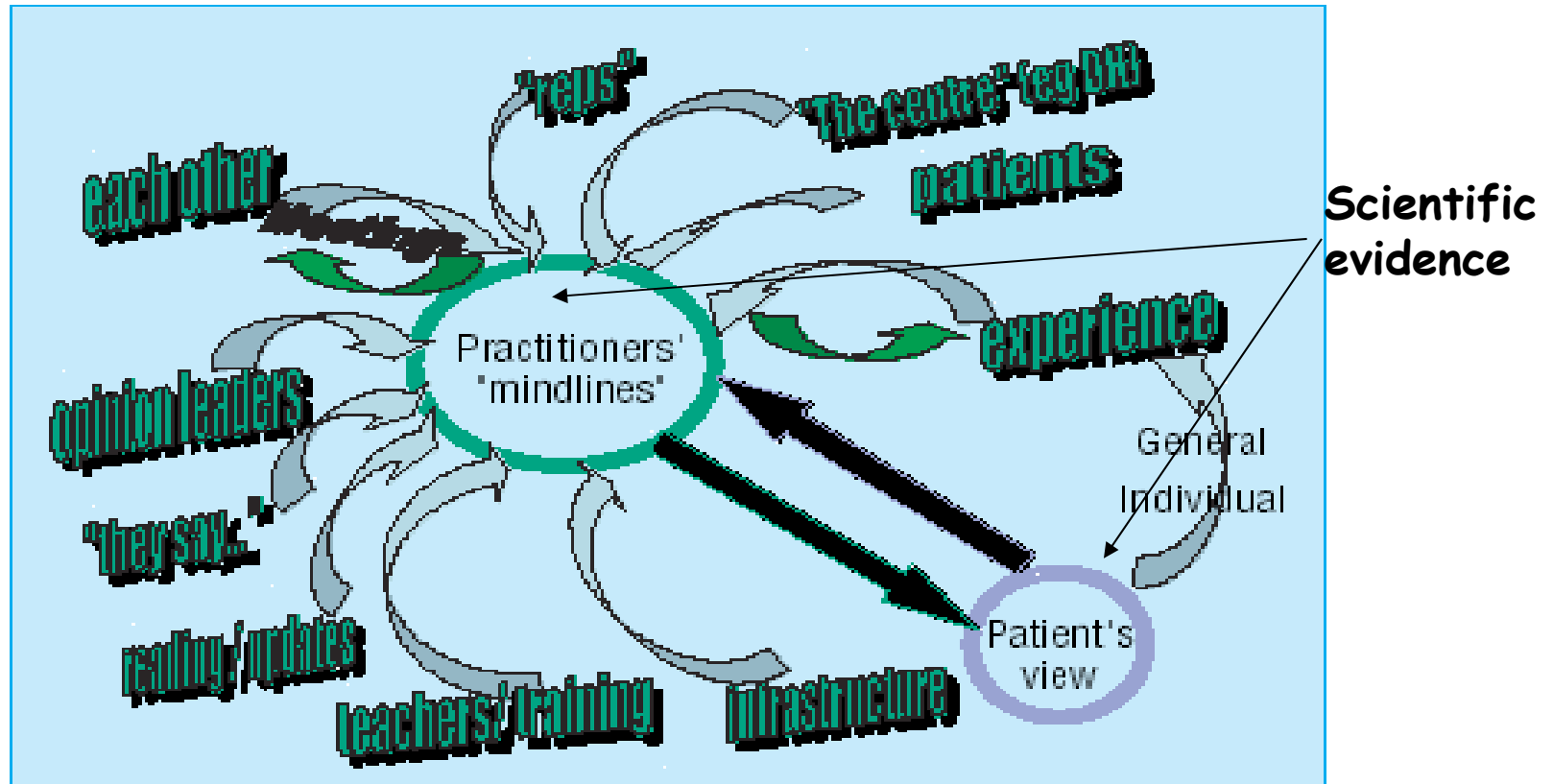
No/low value practices

- Between 30% and 50% of trials which test established practices show little or no benefit in contradiction to prevailing assumptions
 - » Prasad et al Arch Intern Med 2011
 - Such discredited practices tend to persist
 - Usually driven by strongly held professional beliefs
 - » Scott & Elshaug Intern Med J 2013
- More than 50 specialty colleges in the US have identified 250 high volume interventions which are of low or no value
 - » Cassel & Guest JAMA 2012
- Australian researchers have identified more than 150 high-volume MBS items of potentially low value
 - » Elshaug et al Med J Aust 2012
- Overdiagnosis (and overtreatment)
 - Up to 30% for common diseases
 - asthma, HTN, CKD, osteoporosis, breast cancer, PTE
 - » Moynihan et al BMJ 2012

Examples

- Vertebroplasty in acute osteoporotic fractures
- PCI in stable, non-critical CAD
- Early dialysis in ESRF
- Tight glucose control in type 2 diabetes
- Prothrombotic screening in provoked VTE
- BNP testing in clinically evident CHF
- CT head scanning for uncomplicated delirium/syncope
- D-dimer tests in patients older than 75yrs
- IV proton pump inhibitors when oral is equivalent
- IV antibiotics when oral is equivalent
- Troponin testing in patients without chest pain or ECG changes
- Syphilis serology in dementia
- Telemetry in low risk patients with syncope or chest pain
- Routine replacement of IV cannula vs clinically indicated
- Universal annual health checks

Biases towards no/low value care



Mindlines: Collectively reinforced, internalised, tacit dictums
----- socially constructed 'knowledge in practice'

Biases towards no/low value care

- Clinician regret at not administering a treatment when it may lead to benefit (regret of omission) overpowers regret for the consequences of an unnecessary treatment (regret of commission)
- Pro-intervention bias, especially among younger clinicians, towards choosing action over inaction even if marginal benefits of action are very small
- Pro-technology and 'innovation' bias towards too readily believing that newer treatments and technologies are superior to their predecessors
- Desire to please referring clinicians
- Fear of patient approbation or litigation for not doing things (defensive or 'just in case' or 'cover your back' medicine)

Biases towards no/low value care

- Supply-driven demand
 - desire of industry and providers to generate income in presence of excess capacity;
 - sunk costs in existing infrastructure;
 - professional self-esteem
- Overestimation (by both clinicians and patients) of treatment benefits and safety which drives expectations
- Overreliance on pathophysiological or anatomical reasoning, or surrogate outcomes that do not necessarily translate into patient-important benefits
- Clinical practice guidelines and decision support incongruent with evidence or written by conflicted panellists
- Fee-for-service funding (which rewards quantity not quality of services)
- Medical training, socialisation, 'habit', 'ritual', 'custom'

Professional moves to minimise use of no/low value interventions

CLINICAL GUIDELINE

ACP
American College of Physicians
Best Practice Advice

High-Value, Cost-Conscious Health Care: Concepts for Clinicians to Evaluate the Benefits, Harms, and Costs of Medical Interventions

Douglas K. Owens, MD, MS; Amir Qaseem, MD, PhD, MHA; Roger Chou, MD; and Paul Shekelle, MD, PhD, for the Clinical Guidelines Committee of the American College of Physicians*

 **Choosing Wisely**[®]

An initiative of the ABIM Foundation

About

Partners

Lists

Contact

Resources



About
Learn More about
Choosing Wisely



Professional moves to minimise use of no/low value interventions

Toronto Star

Canadian doctors to tackle unnecessary medical tests

The Canadian Medical Association throws its support behind a move to stop unnecessary tests and treatment of patients

By: Jessica McDiarmid News reporter, Thu Aug 22 2013

The Canadian Medical Association has put its stamp of approval on a growing movement of doctors tackling unnecessary, possibly even harmful, over-testing and over-treating.

Following a widely supported resolution at the CMA's general council meeting in Calgary on Tuesday, the organization representing Canada's doctors will form a working group to determine practices "for which benefits have generally not been shown to exceed the risks."

No/low value interventions

- Choosing Wisely Australia
- 'Ineffectiveness' alerts from expert groups (SS/HTA/CSEU)
 - Akin to device or drug safety alerts
- 'Mythbuster' critical appraisal of evidence underpinning established practices ----- professional CPD, HTA, CSEU, MBS review
- Audits of ineffective interventions
- Profiling of adverse events arising from use of ineffective interventions
- Financial penalties or other sanctions for use of ineffective interventions or adverse events arising from their use
- Delisting of, or highly restricted indications for, no/low value interventions on MBS

No/low value interventions

- Improved evidence base in real-world value of interventions
 - Pragmatic clinical trials
 - Registries, linked datasets
 - Comparative effectiveness research
 - Legislated disclosure of commercially held trial data
 - More rigorous approval criteria
 - TGA, FDA
 - Conditional, time-limited listing of new technologies
 - Permanent listing dependent on formal evaluation of effectiveness and cost-effectiveness for specific indications
 - Investigation of significant variations in practice

Targeting populations at high risk

Eligible patients receiving treatment

Treatment	Low risk		Moderate risk		High risk		All patients		P (for linear trend)
	No	%	No	%	No	%	No	%	
Reperfusion therapy	476/539	88.3%	91/147	61.9%	2/11	18.2%	569/697	81.6%	<0.001
Heparin	1911/2091	91.4%	744/889	83.7%	110/151	72.8%	2765/3131	88.3%	<0.001
Early coronary angiography									
TIMI score	139/414	33.6%	149/621	24.0%	24/130	18.5%	312/1165	26.8%	<0.001
FRISC score	119/607	19.6%	258/1575	16.4%	33/288	11.5%	410/2470	16.6%	0.002
Antiplatelet agents	1027/1051	97.7%	618/637	97.0%	515/537	95.9%	2160/2225	97.1%	0.063
β-Blockers	631/725	87.0%	368/416	88.5%	322/407	79.1%	1321/1548	85.3%	<0.001
ACE inhibitors/ angiotensin receptor antagonists	128/155	82.6%	129/150	86.0%	207/263	78.7%	464/568	81.7%	0.088
Lipid-lowering agents	805/922	87.3%	442/521	84.8%	294/447	65.8%	1541/1890	81.5%	<0.001
Referral for OCR	505/974	51.8%	250/544	46.0%	137/398	34.4%	892/1916	46.6%	<0.001
In-hospital mortality*	23/2605	0.9%	47/1101	4.3%	19/169	11.2%	89/3875	2.3%	<0.001

Targeting populations at high risk

- Use prediction scores that estimate and stratify absolute disease risk
 - MELDS score for liver transplantation in cirrhosis
 - GRACE or TIMI score for PCI in ACS
 - Modified Glasgow Blatchford Score for endoscopy in acute GI bleeding
 - CHADs-Vasc and HAS-BLED scores for anticoagulants in AF
 - TIMI score for provocative testing in atypical chest pain
 - Framingham score for statin prophylaxis in CVD prevention
- Regularly audit appropriateness of interventions according to disease risk
- Formulate guidelines that prioritise different interventions according to likely health gains in prototypical populations

Targeting populations at high risk

- **Outcome Measures:** Personalized gain in life expectancy associated with preventive care recommendations
- **Results of Base-Case Analysis:** Increases in life expectancy varied more than 100-fold across USPSTF recommendations, and the rank order of benefits varied considerably among patients.
- For an obese man aged 62 years who smoked and had hypercholesterolemia, hypertension, and a family history of colorectal cancer, the model's top 3 recommendations (from most to least gain in life expectancy) were tobacco cessation (adding 2.8 life-years), weight loss (adding 1.6 life-years), and blood pressure control (adding 0.8 life-year).
- Lower-ranked recommendations were aspirin use, cholesterol reduction, colonoscopy, or screening for AAA (each adding 0.1 to 0.3 life-years).

Achievable and worthwhile health gains within limited lifespan

- ~30% of healthcare budgets spent on care in last year of life
 - acute care in last month: 1/3 expenditure Emanuel et al Arch Intern Med 2002
- ~66% of terminally ill die in hospital
 - often receiving heroic interventions Rosenwax et al Med J Aust 2011
- 25% beds in 69 ICUs - patients receiving inappropriate care Piers et al JAMA 2011
- Inappropriate over-investigation and over-treatment of older patients with multimorbidity Scott et al Drugs Ageing 2012
- Conservative/palliative approach prolongs survival, improves symptoms, avoid invasive care, lower costs (by up to a third) Temel et al N Engl J Med 2010
- Similar outcomes with advance care planning systematically applied to patients with end-stage chronic diseases JAMA 2000; Levy et al J Palliat Med 2008 Wright et al JAMA 2008; Molloy et al
- Minimally disruptive interventions and de-prescribing strategies that integrate care-specific benefit-harm tradeoffs with life expectancy, care goals and patients' values and preferences Scott et al Evidence-based Med 2013

Achievable and worthwhile health gains within limited lifespan

- Mandate conservative approach as first line management in:
 - Patients >75 years with multiple co-morbidities, marked frailty, grossly impaired function, poor quality of life
 - Patients with life expectancy <12 months
 - > All such patients admitted under generalist physicians
- Promote wider use of prognostic tools
 - » www.eprognosis.org/
- Professional competence in formulating and applying advance care plans
- Mandate advance care/end of life care plans for high risk populations
- Restrict use of interventions which do not improve survival beyond 6 months or substantially improve quality of life

Right care, right person, right place, right time

- Current healthcare delivery is inefficient in meeting needs of the multimorbid chronically ill
- Expensive inpatient care remains too often the default care option
- Large-scale transformational redesign is required which:
 - meets identified clinical needs
 - targets inter-sectoral interfaces
 - alters professional roles and job descriptions
 - substantially re-engineers existing clinical processes
- Examples:
 - area-wide hospital substitution and ambulatory care programs
Caplan et al Med J Aust 2012
 - telehealth (videoconferencing of paediatrics, geriatrics, home care, radiology, psychiatry, oncology) - ?? remote monitoring, telephone follow-up, call centre advice lines, email
Jennett et al J Telemed Telecare 2003; Hailey et al J Telemed Telecare 2004; Wade et al BMC Health Serv Res 2010
 - reconfigured emergency-acute care systems based on patient complexity
Newnham et al Med J Aust 2012
 - collaborative primary care-specialist teams based in non-hospital settings caring for patients with chronic diseases
Jackson et al Aust Fam Physician 2010
 - primary care substitution for specialist services where appropriate
Chai-Coetzer et al JAMA 2013
 - integrated, multidisciplinary, patient-centred medical homes
Alexander & Bae Health Serv Manage Res 2012

Right care, right person, right place, right time

- Encourage generation and testing of new models of care
 - Identify and incentivise clinician-innovators ('system physicians')
 - Provide financial and logistical support
 - Facilitate proof of concept studies
 - Integrate care delivery with action research
- Expand the spectrum of clinical and non-clinical professionals
 - Clinician assistants, practice nurses, clinically tasked administrative officers
- Promote multidisciplinary teamwork and cross-disciplinary co-management
- Challenge professional inertia and resistance to change
- Challenge managerial aversion to 'risky ventures'
- Minimise ill-informed or biased political interference

Population values and preferences

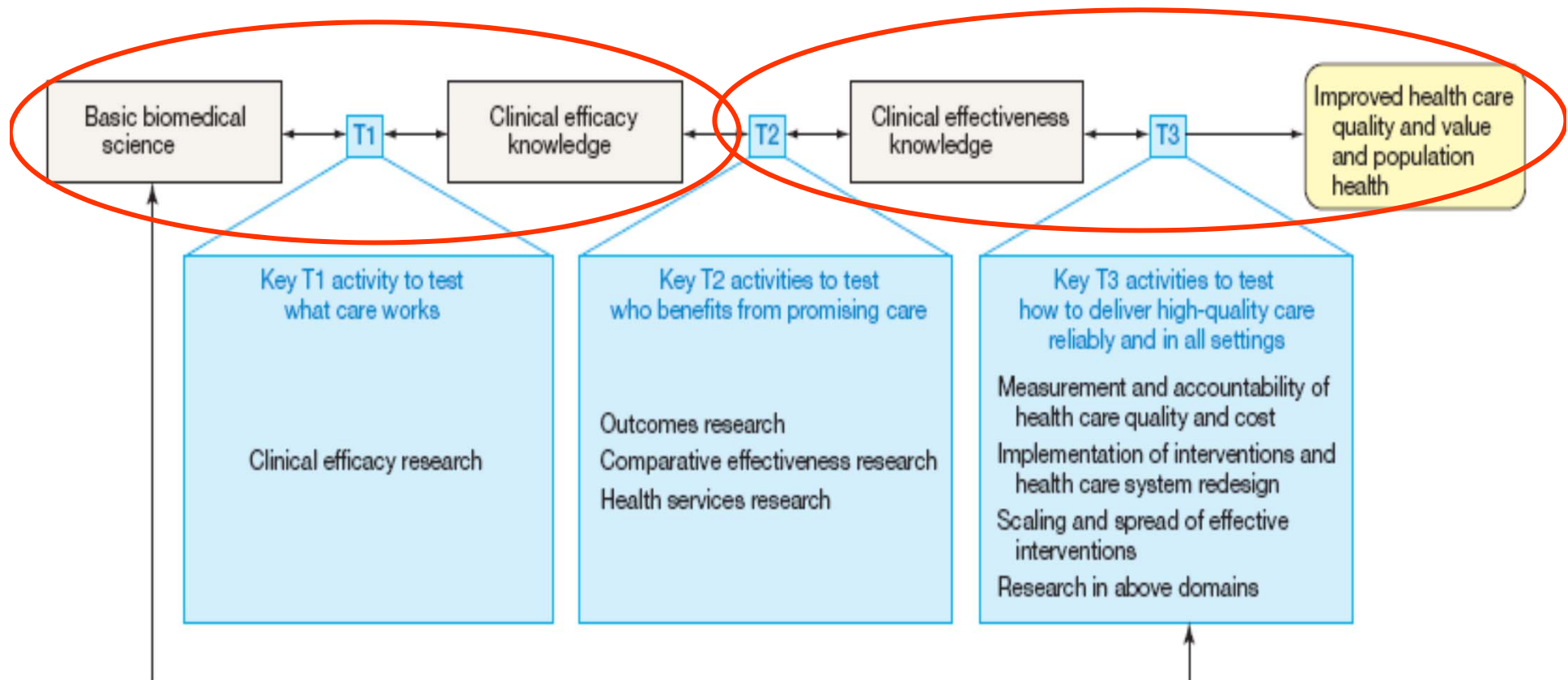
- Adherence rates no more than 60% for most interventions
- Significant expenditure on CAM cf orthodox medicine
- Significant proportion of spending on 'worried well' (1 in 5 GP attendances)
Clarke et al Med J Aust 2008
- Empowering patients to actively participate in decision-making and self-management reduces demand for care
- Up to 20% of patients who actively participate with decision aids choose less invasive and costly interventions
Stacey et al Cochrane Database Syst Rev 2011
- Providing decision aids to patients potentially eligible for hip and knee replacements reduced surgeries by up to 38% and costs by up to 21% over 6 months
Arterburn et al Health Aff 2012
- Shared decision-making across a range of conditions facilitated by regular contact with trained health coaches
 - 13% fewer hospital admissions
 - 10% reduction in preference-sensitive surgeries
 - 5% lower overall medical costs
Veroff & Wennberg Health Aff 2013
- Self-management toolkits in patients with diabetes, heart failure, hypertension and anticoagulation enhance adherence and lower costs

Population values and preferences

- 'New' professional competencies:
 - Empathic listening and elicitation of patient beliefs and values
 - Use of decision aids, communication of personalised estimates of benefits and harms
 - mindful of limited health literacy
- Informed consent forms that require explicit estimates of benefit and harm
- Guideline recommendations that take account of values and preferences of target populations

Value of care science

**"We have failed to view the delivery of healthcare as a science...
Use of therapies has generally been viewed as the *art* of medicine"
Pronovost et al Acad Med 2009**



Value of care science

- In 2009 Congress legislated \$1.1 billion for CER over 4 years
- Patient Centred Outcomes Research Institute (PCORI)
- NIHR established in UK in 2006 with the mandate to commission and disseminate research that ensures NHS has access to best possible evidence to inform clinical decision-making and patient choices
- ?Australian equivalent