Value in diagnosis

Professor Alexandra Barratt

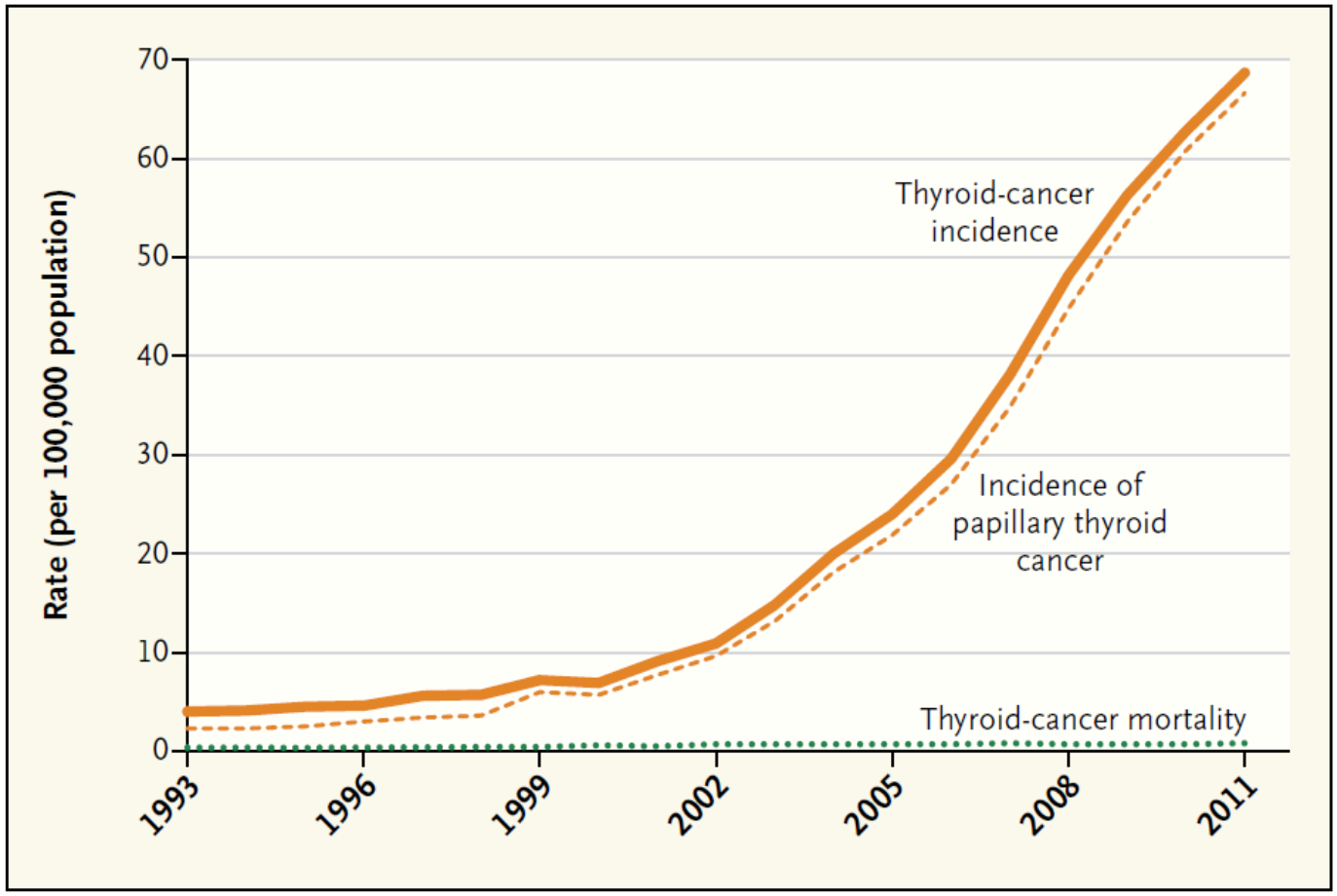
WISER HEALTHCARE

A RESEARCH COLLABORATION FOR REDUCING OVERDIAGNOSIS AND OVERTREATMENT

IDEAL SCENARIO, an advance in diagnostic capability:

- Identifies an abnormal condition more accurately
- Does not increase harms
- Overall, IMPROVES OUTCOMES for patients (ie benefit:harm ratio of diagnosis and treatment is better)
- Is cost-effective (ie wise use of healthcare resources)

Korea's thyroid cancer (diagnosis) epidemic



Thyroid-Cancer Incidence and Related Mortality in South Korea, 1993–2011.

Data on incidence are from the Cancer Incidence Database, Korean Central Cancer Registry; data on mortality are from the Cause of Death Database, Statistics Korea. All data are age-adjusted to the South Korean standard population.

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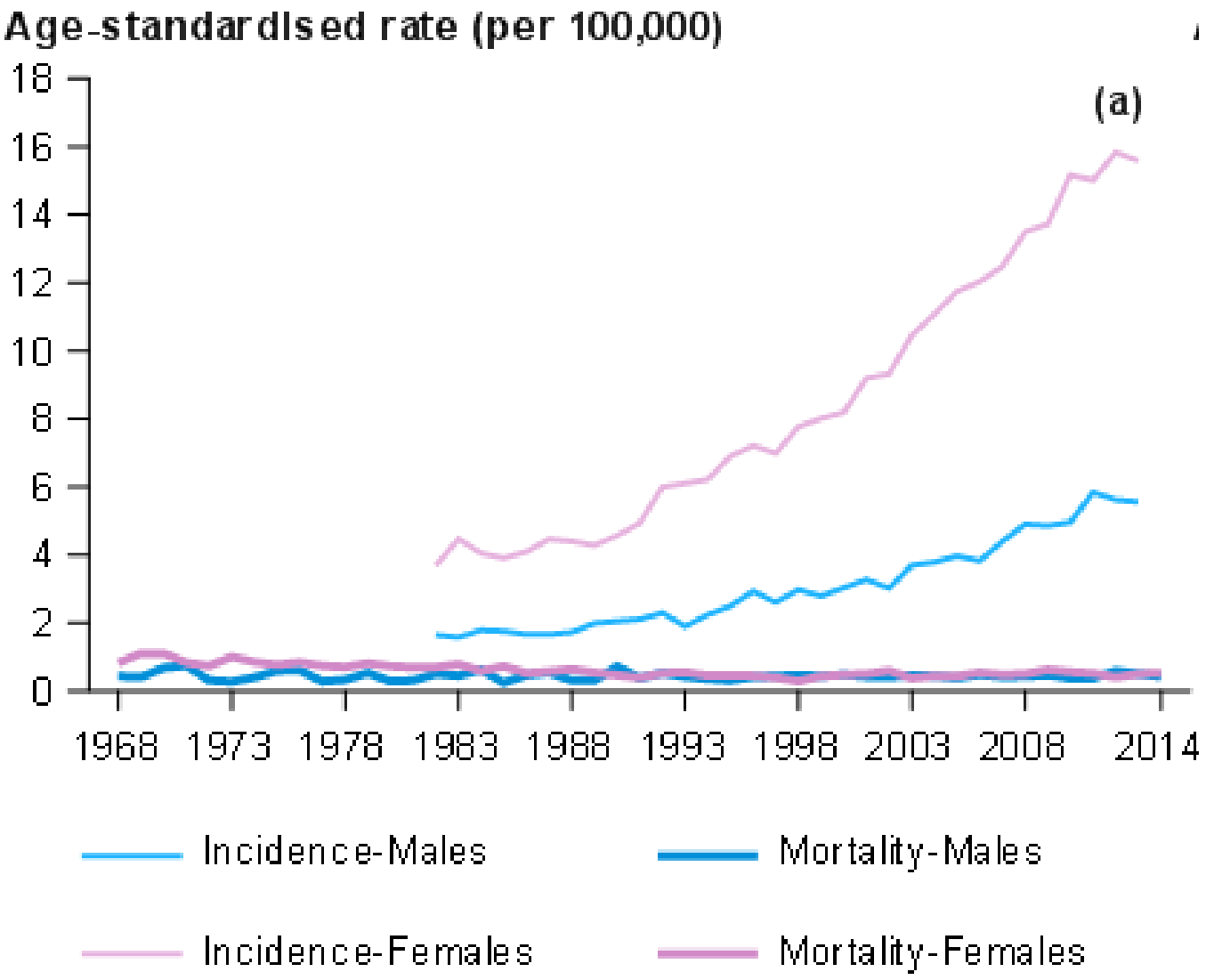
Ahn HS et al. NEJM 2014
Korea's thyroid cancer epidemic

Thyroid Cancer Incidence and Mortality Data Australia



Source AIHW AICM books accessed 19 July 2017 (a) data by year and gender, incidence 2013, mortality 2014

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Stage-Specific Trends Women 50+ years

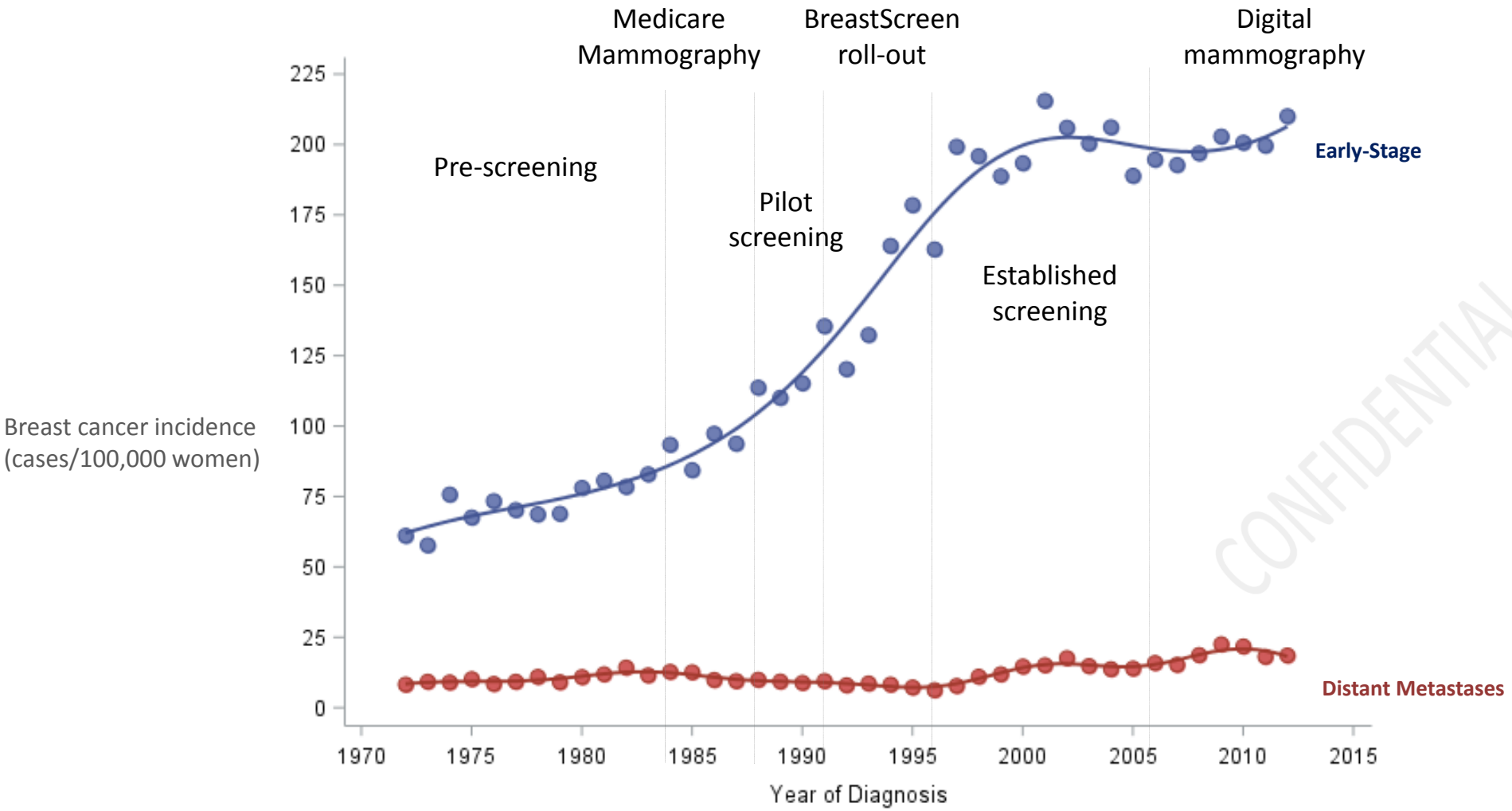

Fig. 2 Incidence of Stage-Specific Breast Cancer in NSW women 50+, 1972–2012

Note: Rates were standardised by 5-year age intervals within broad age groups, using the Australian 2001 population.

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Stage-Specific Trends Women <50 years

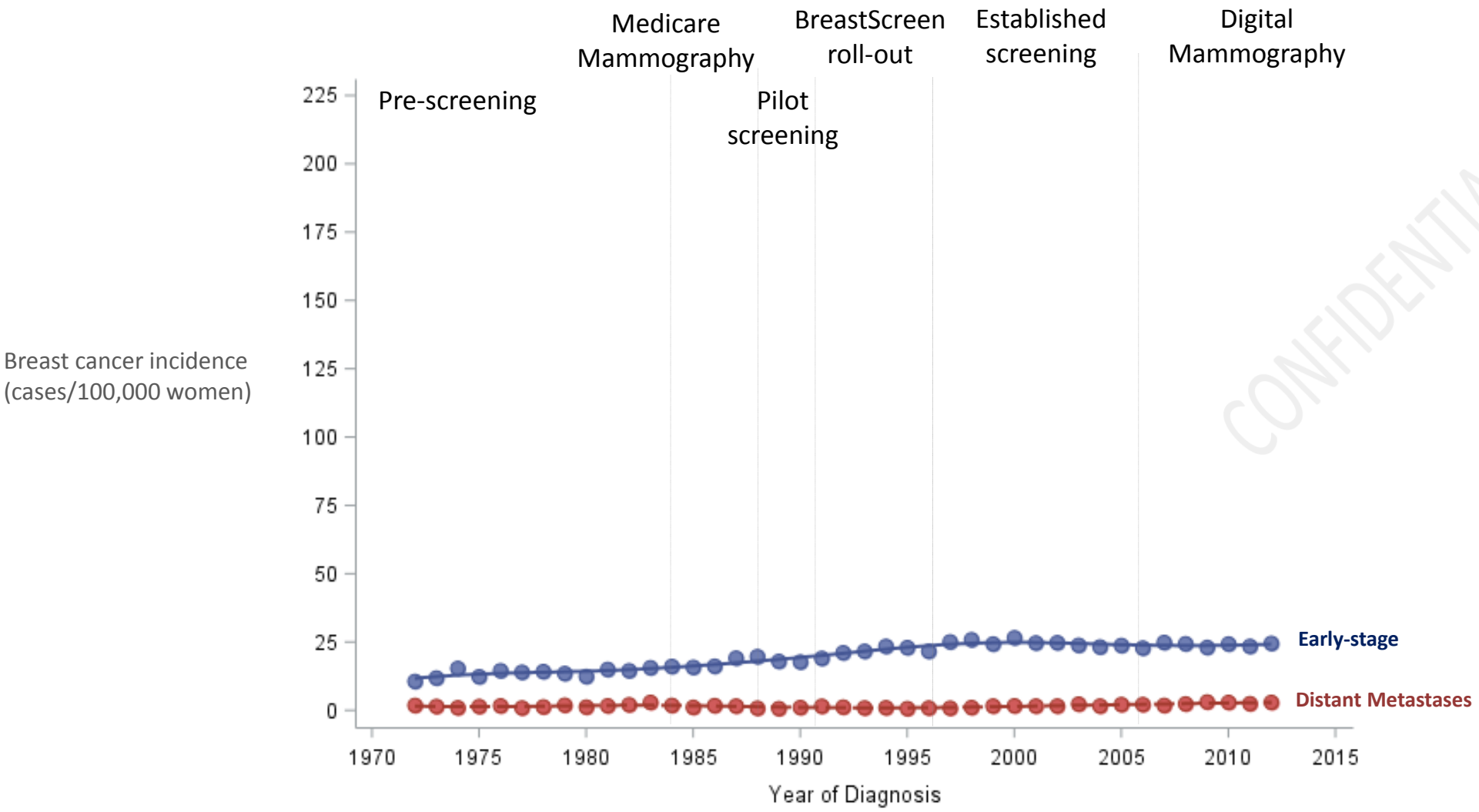


Fig. 2 Incidence of Stage-Specific Breast Cancer in NSW women <50, 1972–2012

Note: Rates were standardised by 5-year age intervals within broad age groups, using the Australian 2001 population.

Overdiagnosis is Widespread….

Thyroid cancer, Breast cancer, Prostate cancer, Lung cancer, Melanoma, Pulmonary Embolism, Polycystic Ovarian Syndrome, Osteoporosis, ADHD, Dementia, Abdominal Aortic Aneurysm, Inherited heart diseases eg Left Ventricular Non-Compaction, Depression, Genetic diseases and genetic predisposition, Knee meniscal tears, Low Testosterone, Female Sexual Dysfunction ……

WHY?

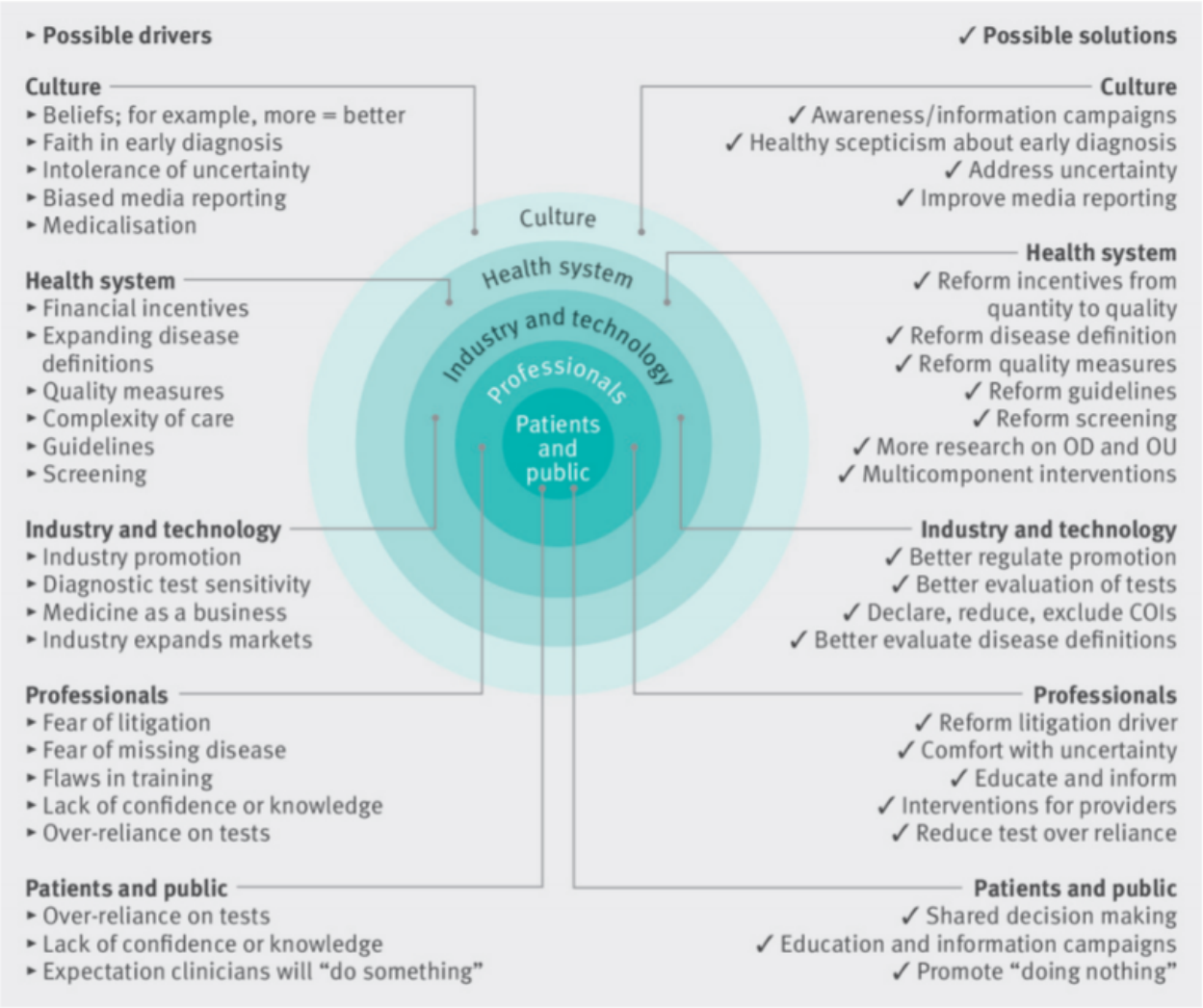
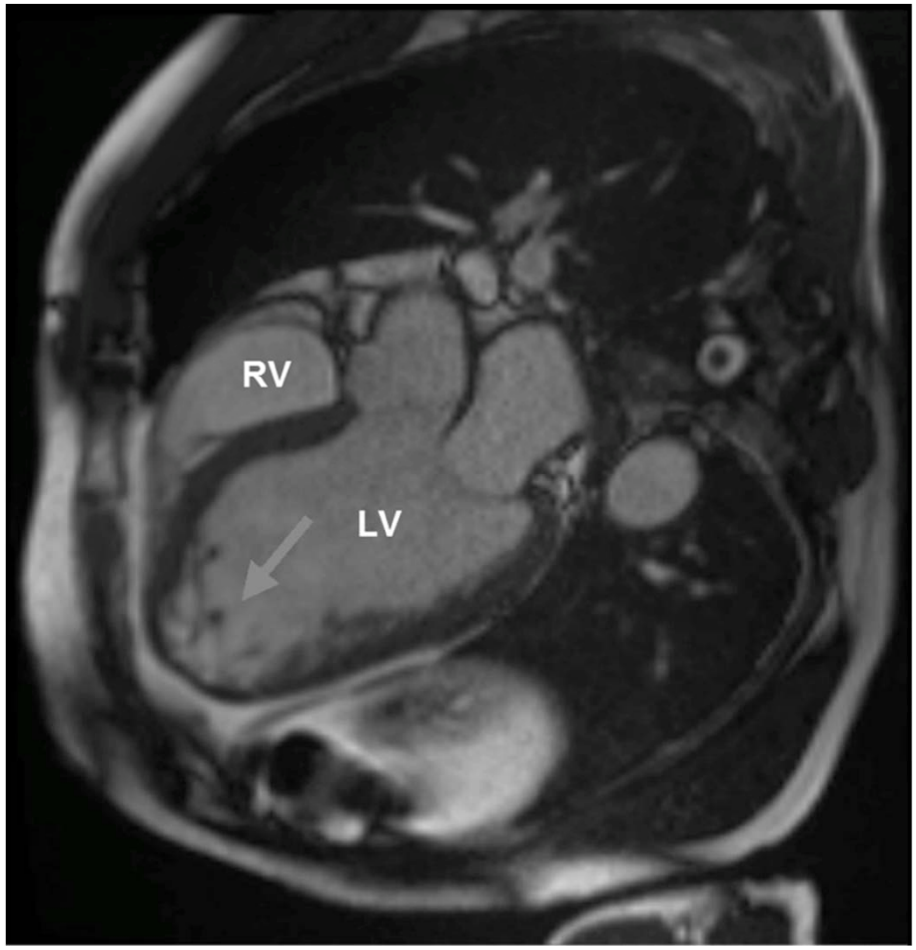


Fig 2 Overdiagnosis and related overuse. Mapping possible drivers to potential solutions. COI=conflict of interest; OD=overdiagnosis; OU=overuse.

Left Ventricular Non Compaction Cardiomyopathy

- Disease defined 2005 WHO
- Diagnostic criteria unclear
- Identifiable on cMRI
- An important disease in babies and children
- But prevalence of up to 40% in healthy adult samples



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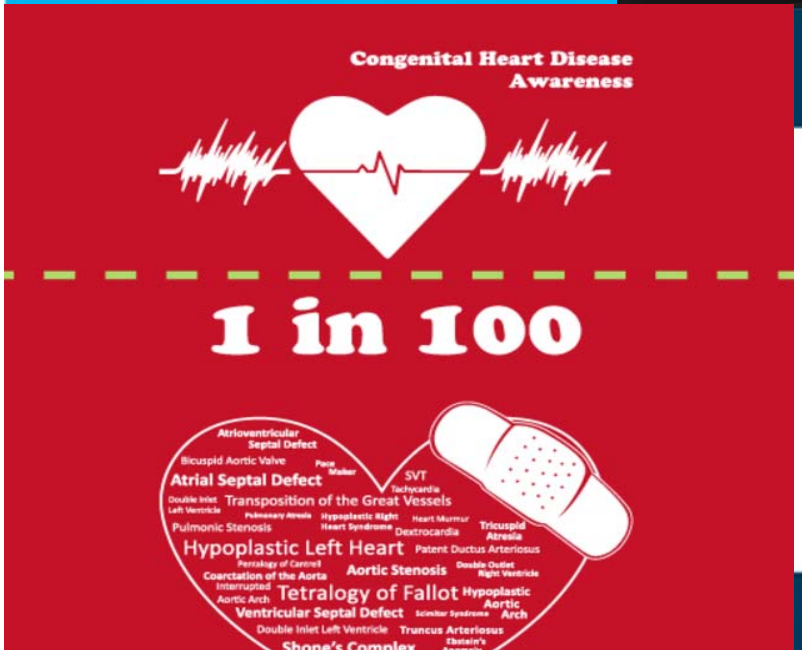
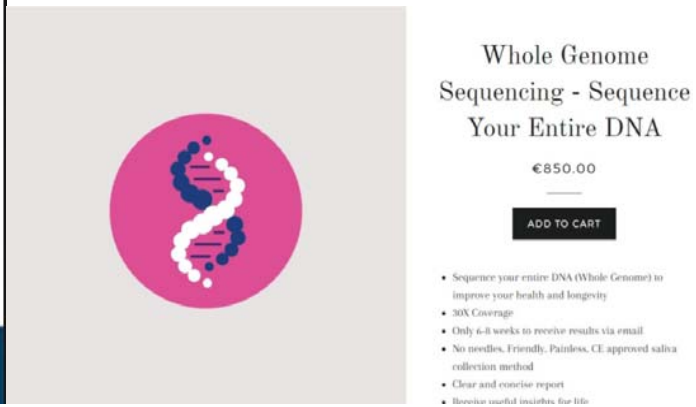
Too much testing?





Gestational Diabetes Mellitus

	Prevalence Estimate	Impacts, Benefits and Harms (NIH assessment of evidence)
OLD 2 Step Diagnostic process (GCT + OGTT)	5-6%	• Anxiety raised • Lifestyle disruption • Some maternal and neonatal outcomes improved
NEW 1 Step Diagnostic process proposed by WHO and IADPSG (OGTT with different load and thresholds)	15-20%	• More women anxious • More lives disrupted • More prenatal and neonatal assessments • More Caesarean sections? • Increased costs • No evidence of incremental improvement in outcomes

NIH Consensus Development Statement Diagnosing Gestational Diabetes Mellitus Volume 29, Number 1 March 4–6, 2013

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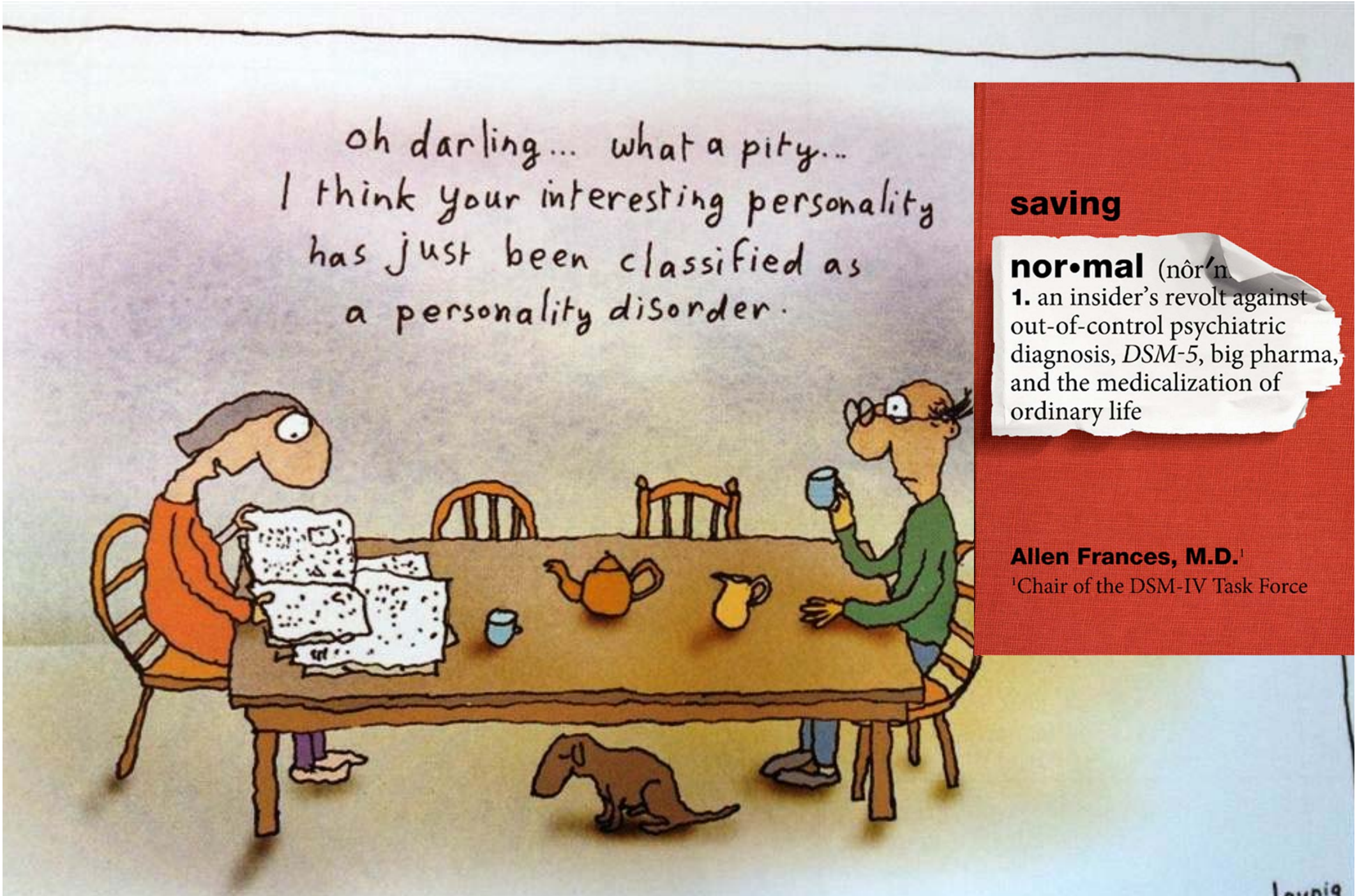

saving

nor•mal (nôr′n
1. an insider's revolt against out-of-control psychiatric diagnosis, *DSM-5*, big pharma, and the medicalization of ordinary life

Allen Frances, M.D.[1]
[1]Chair of the DSM-IV Task Force

What if more diagnosis does NOT improve outcomes for patients, ie More net Harm, Not More net Benefit ?

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- More people diagnosed (and treated) for no improvement in outcome. Would that be low value, no value or negative value?

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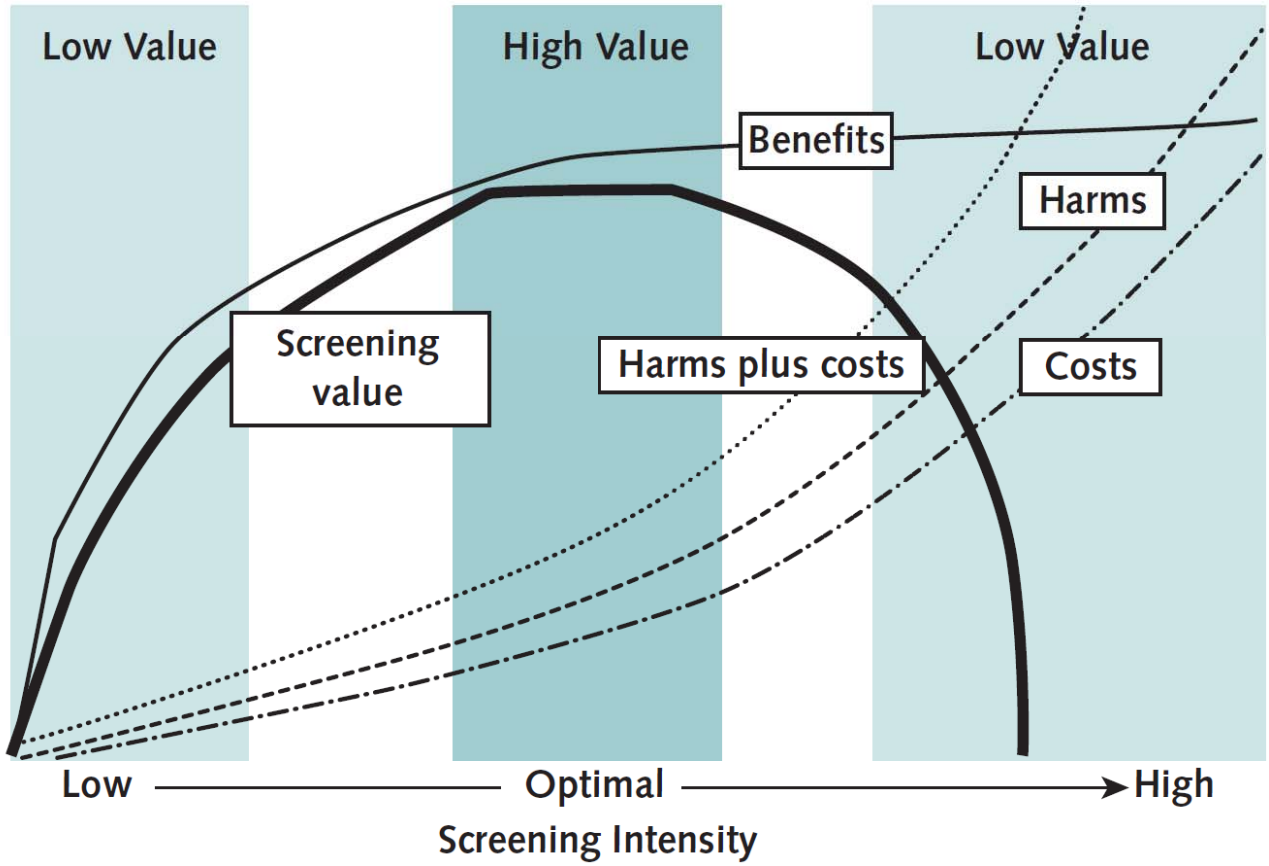
Determining value

Figure 1. The value framework.



Harris RP, Wilt TJ, Qaseem A. Ann Int Med 2015;162:712-7.

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Consequences of low or no value diagnosis?

- More people diagnosed (and treated) for no improvement in outcome. Would that be negative value care?
- Total cost = number of people diagnosed (and treated) x cost ($) per person

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Integrated healthcare accounting:

- More people diagnosed (and treated) for no improvement in health outcome (net harm?)
- Total cost = number of people diagnosed (and treated) x cost ($)
- Total environmental impact = number of people diagnosed and treated x environmental footprint per person

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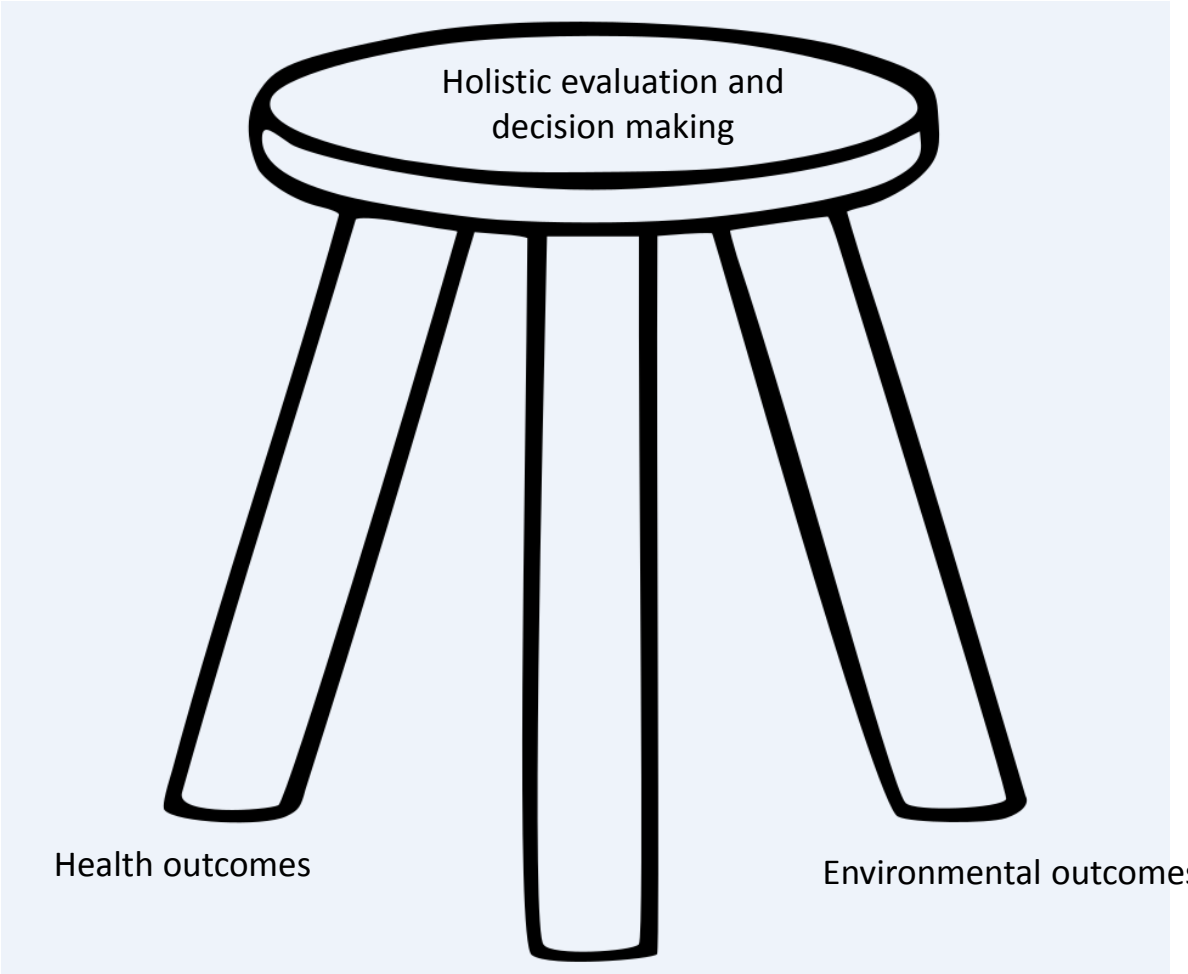

Holistic evaluation and decision making
Health outcomes
Environmental outcomes
Economic outcomes

Low value diagnosis
(with integrated accounting)
=
Harming people
Costing more
More environmental damage

Reducing overdiagnosis and overtreatment

Good for people - Do less harm

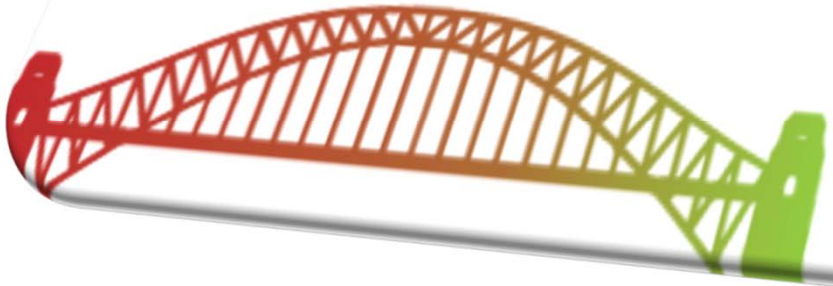
Good for the planet – Smaller footprint

Good for the purse - Cost less money

PREVENTING OVERDIAGNOSIS

Winding back the harms of too much medicine

5-7 December 2019 SYDNEY



SAVE THE DATE

KEYNOTES:

BMJ Editor-in-chief, **Dr Fiona Godlee**

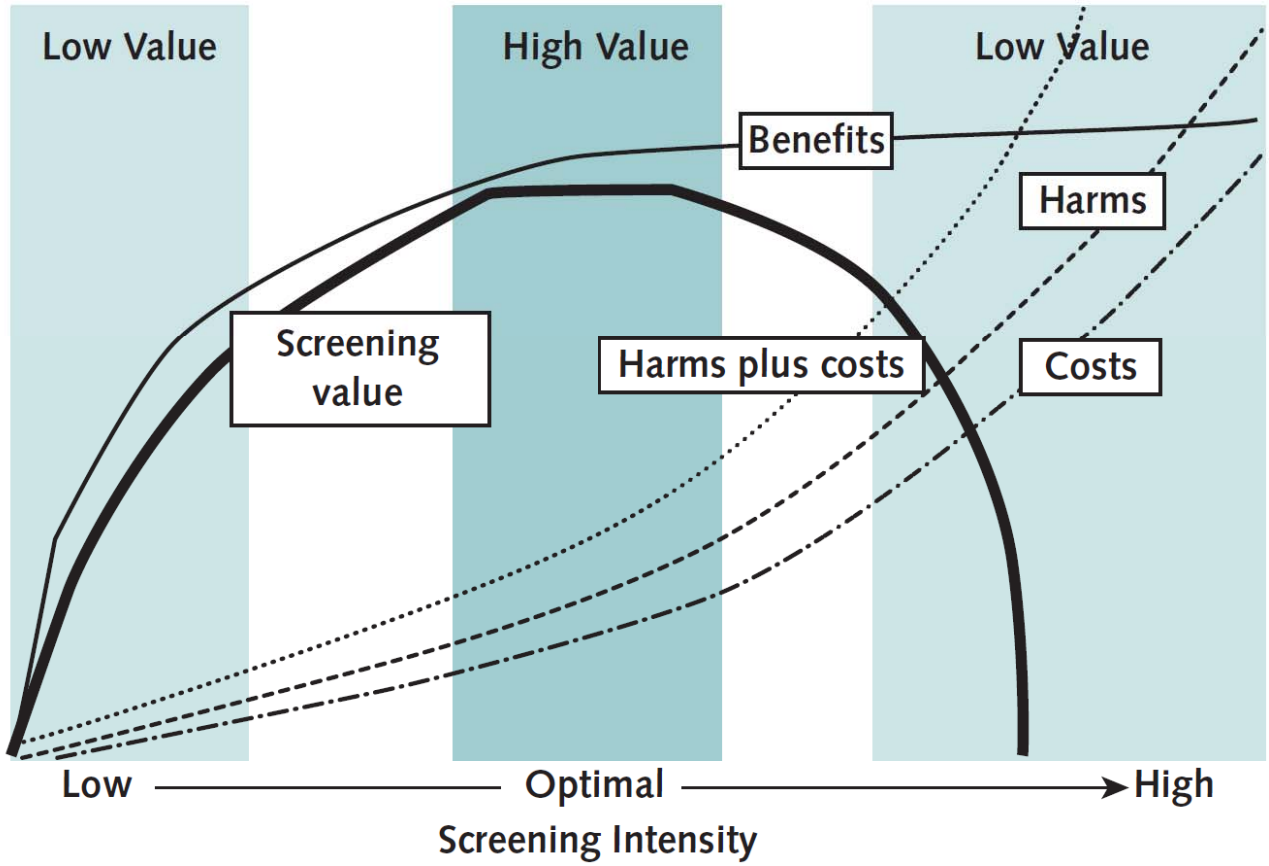
Low-value care world expert, **Prof Adam Elshaug**

Read more..

Special thanks to Les Irwig, Paul Glasziou, Iona Health, Gemma Jacklyn, Chris Semsarian, Ray Moynihan, Samantha Barratt-Ross, Jonathan Bogais and David Pencheon for slides, images and ideas

Determining value

Figure 1. The value framework.



Harris RP, Wilt TJ, Qaseem A. Ann Int Med 2015;162:712-7.

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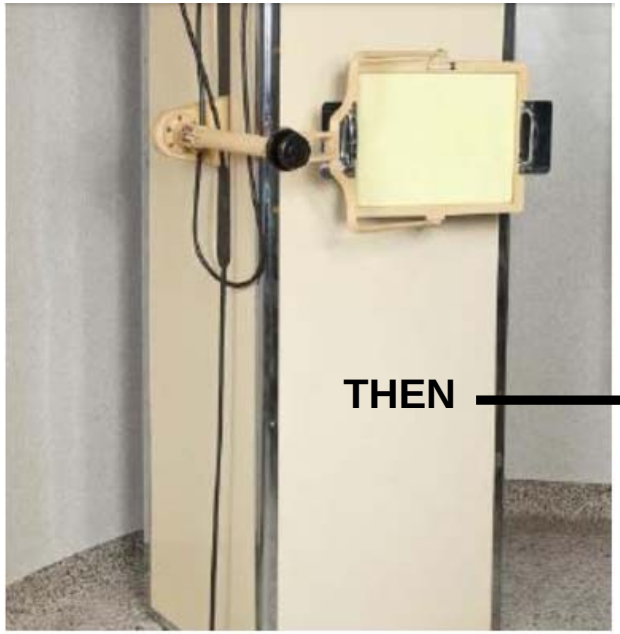
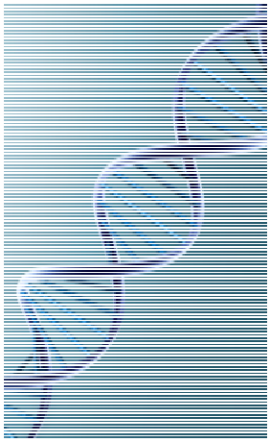
Too much detection: more sensitive tests

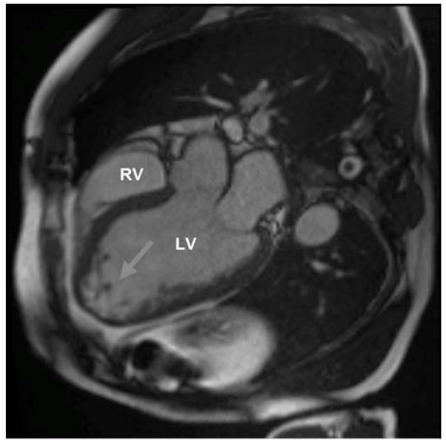


This xray machine manufactured in the 1905s was donated by to the Royal Prince Alfred Museum.

THEN →

NOW…





Grand Rounds | Clinician's Corner

June 5, 2013

Increasingly Sensitive Assays for Cardiac Troponins

A Review

James A. de Lemos, MD

Author Affiliations | Article Information

JAMA. 2013;309(21):2262-2269. doi:10.1001/jama.2013.5809

Expanded definitions

OPEN ACCESS Freely available online

PLOS | MEDICINE

Expanding Disease Definitions in Guidelines and Expert Panel Ties to Industry: A Cross-sectional Study of Common Conditions in the United States

Raymond N. Moynihan[1]*, Georga P. E. Cooke[1], Jenny A. Doust[1], Lisa Bero[2], Suzanne Hill[3], Paul P. Glasziou[1]

1 Bond University, Robina, Australia, **2** University of California, San Francisco, San Francisco, California, United States of America, **3** Australian National University, Acton, Australia

- Of 16 guidelines publications on 14 common conditions, **10 widened** and 1 narrowed definitions.
- **None** had rigorous assessment of **potential harms** of proposed changes.
- The average proportion of members with industry ties was 75%; 12/16 chairs had ties.

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But this can change (quickly!)

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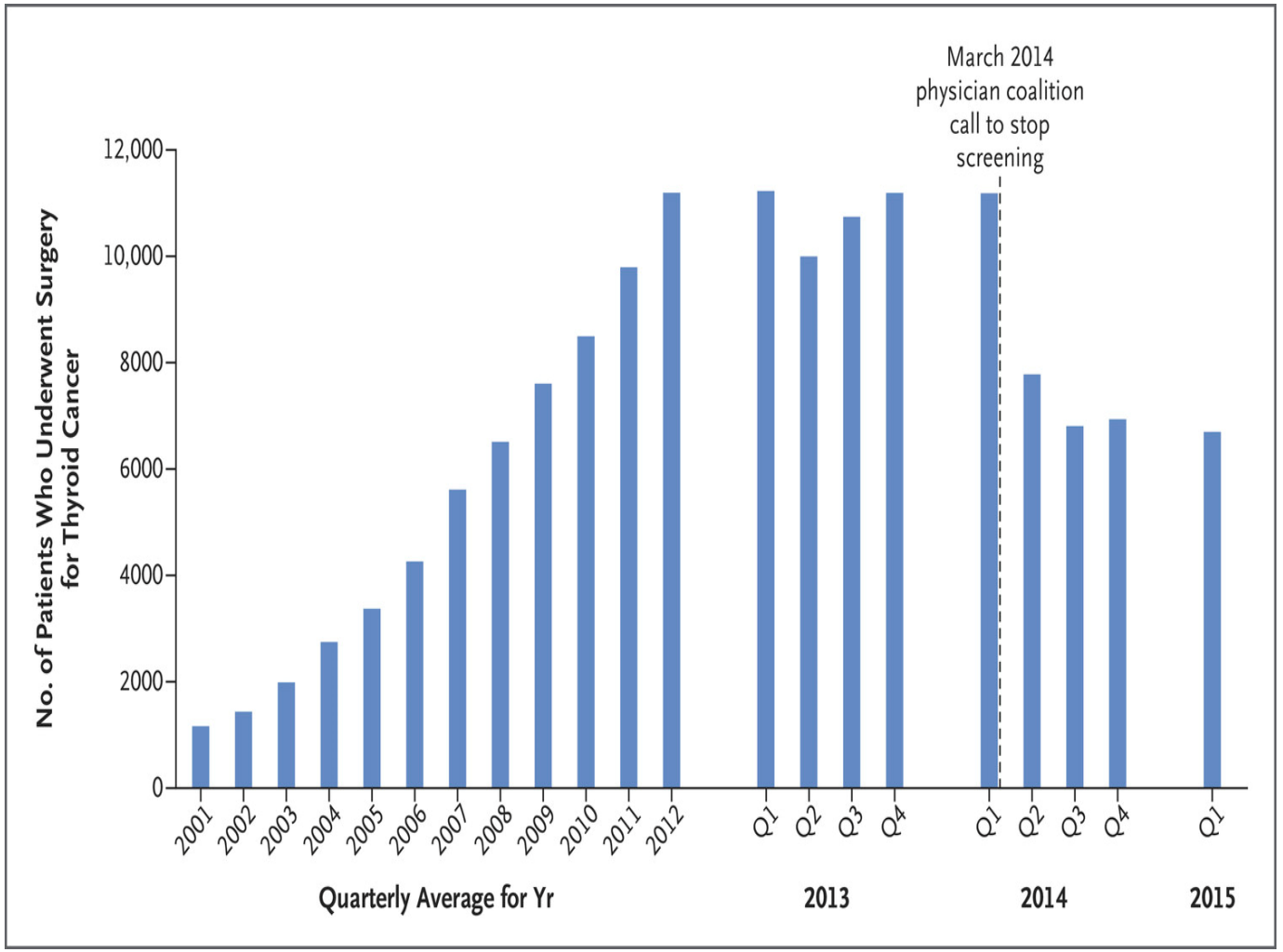
March 2014

- Eight physicians form the Physician Coalition for Prevention of Overdiagnosis of Thyroid Cancer
- Open letter to the public highlighting high incidence of thyroid cancer in South Korea, argue screening with ultrasonography should be discouraged
- Hour-long investigative reports on television
- Major newspapers ran headlines such as “What Caused Jump in Thyroid Cancer Cases?”

Ahn HS, Welch HG. South Korea’s Thyroid-Cancer “Epidemic” — Turning the Tide. N Engl J Med. 2015;373(24):2389-90.

Trend in the Number of Operations for Thyroid Cancer in South Korea, 2001–2015.



Trend in the Number of Operations for Thyroid Cancer in South Korea, 2001–2015.
Data are from the Health Insurance Review and Assessment Service, South Korea.

Ahn HS, Welch HG. N Engl J Med 2015;373:2389-2390.

ANALYSIS

TOO MUCH MEDICINE

Mapping the drivers of overdiagnosis to potential solutions

Thanya Pathirana and colleagues explore strategies to tackle the problem of too much medicine

Thanya Pathirana *PhD scholar*, Justin Clark *senior information specialist*, Ray Moynihan *senior research fellow*

Center for Research in Evidence Based Practice, Bond University, Australia

In our collective enthusiasm to diagnose and treat disease, a growing body of evidence indicates that we may often be doing too much of a good thing.[1-5] "Overdiagnosis" is now widely recognised to occur when people are labelled with or treated for a disease that would never cause them harm—often as a result of undergoing screening—and it can lead to the overuse of further tests and treatments.[2 6] One example is thyroid cancer, with estimates that over 500 000 people may have received overdiagnoses across 12 countries in the past two decades, leading to unnecessary surgery and lifelong medication for many.[7]

Overdiagnosis is a challenge to the sustainability of human health and health systems. Its causes—including the best of intentions—are as complex and multifaceted as the potential solutions.[8-13] As part of the preparation for a possible national action plan in Australia, we searched the literature for causes of and responses to overdiagnosis. Here we provide the first comprehensive analysis of the possible drivers of overdiagnosis and related overuse, mapped to potential solutions.

exceptions, including a systematic review. Although discussion of drivers and solutions in many of the included analysis pieces were informed directly by empirical evidence, including systematic reviews the original studies are not included here, as they did not explicitly discuss drivers or solutions in ways captured by our search strategy. The body of empirical evidence highlighting the problem of overdiagnosis is growing, but a systematic review is beyond the scope of this article. Similarly, although analysing the complex inter-relation between overdiagnosis and the overuse it drives[14] is vitally important, it is outside the reach of this article.

The map arising from our analysis is broad but not definitive—potential causes or solutions might not yet have been identified in the literature, and breadth might come at the cost of depth. In addition, our search was based in medicine, and a wider analysis might identify important sociological investigations of medicalisation[15] resulting in different conceptions of the problem, drivers, and solutions. Importantly no strict or established criteria for what defines a driver or a