



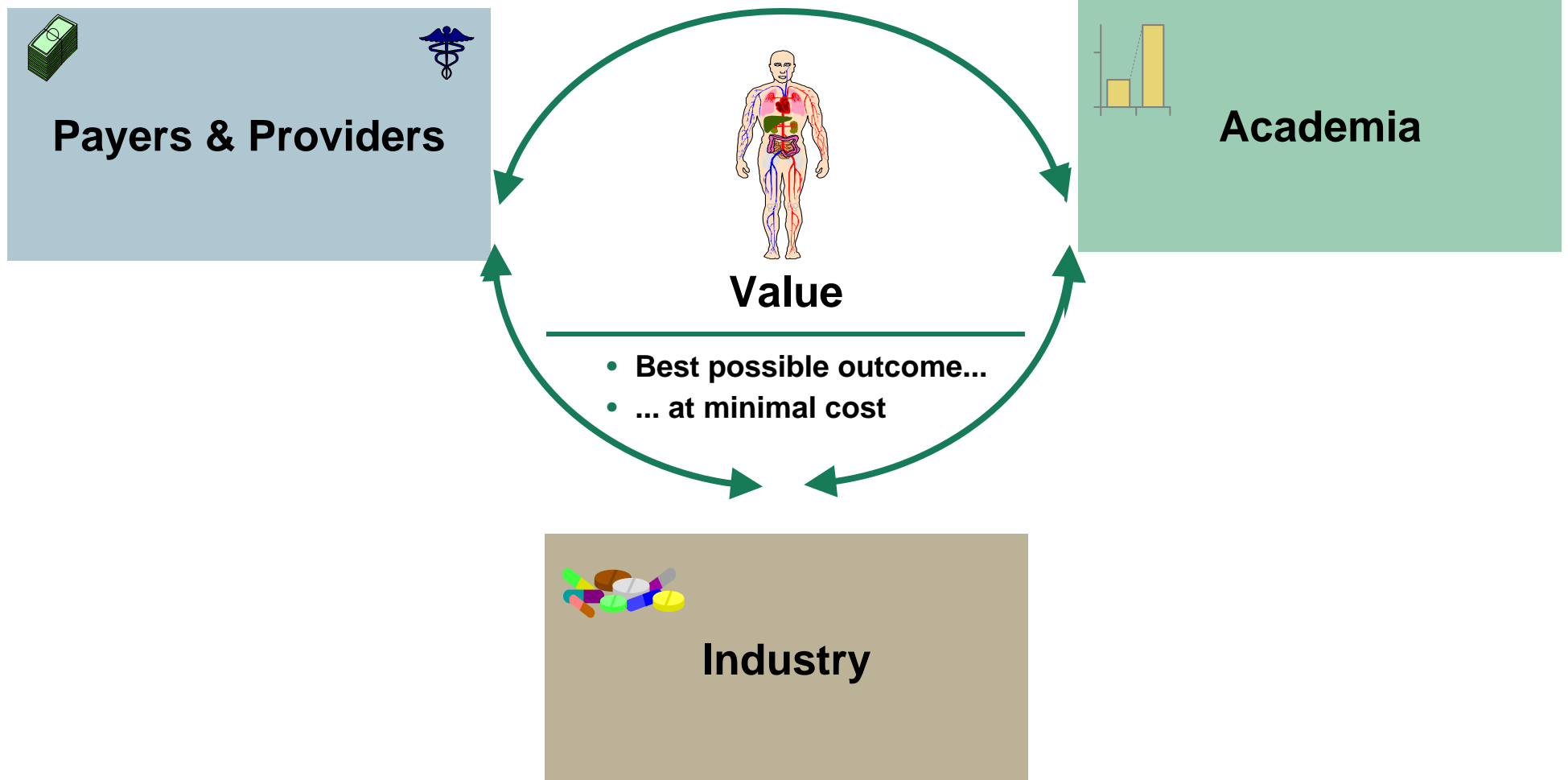
Value guided healthcare as a platform for industrial development in Sweden – feasibility study

Conference presentation

Gothia Forum, Göteborg Nov 6, 2009

THE BOSTON CONSULTING GROUP

From cost focus towards value based health care



Clinical registries capture outcomes and clinical process

Medical outcome data

Patient data

Process data

Functional outcome data

Patient experience data

Example Swedish National Hip Arthroplasty Register



History

- Registry started in 1979
- World's largest outcomes database for hip arthroplasty
- Web-based reporting in 1999
- Covering Nordic cases since 2008

Coverage

- Patient coverage 96% in 2007
- Hospital coverage 100% in 2007
- 20 676 registrations in 2007

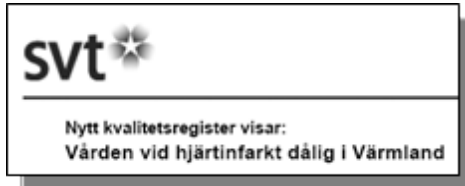
Outcomes transparency drives rapid improvements

Example: Myocardial infarction

Karlstad central hospital

Before

Ranked #43 of 73 hospitals



Care cycle redone
 PCI¹ - unit established
 Emergency care expanded to 24/7 coverage

After

Quality index³ raised from 1 to 8,
 30-day mortality reduced by 50%
 Ranked #22



Halmstad hospital

1 year mortality 20%, ranked #68 of 73 hospitals



Care aligned with national treatment guidelines²
 New specialist departments for specific coronary conditions started
 Staffing improved

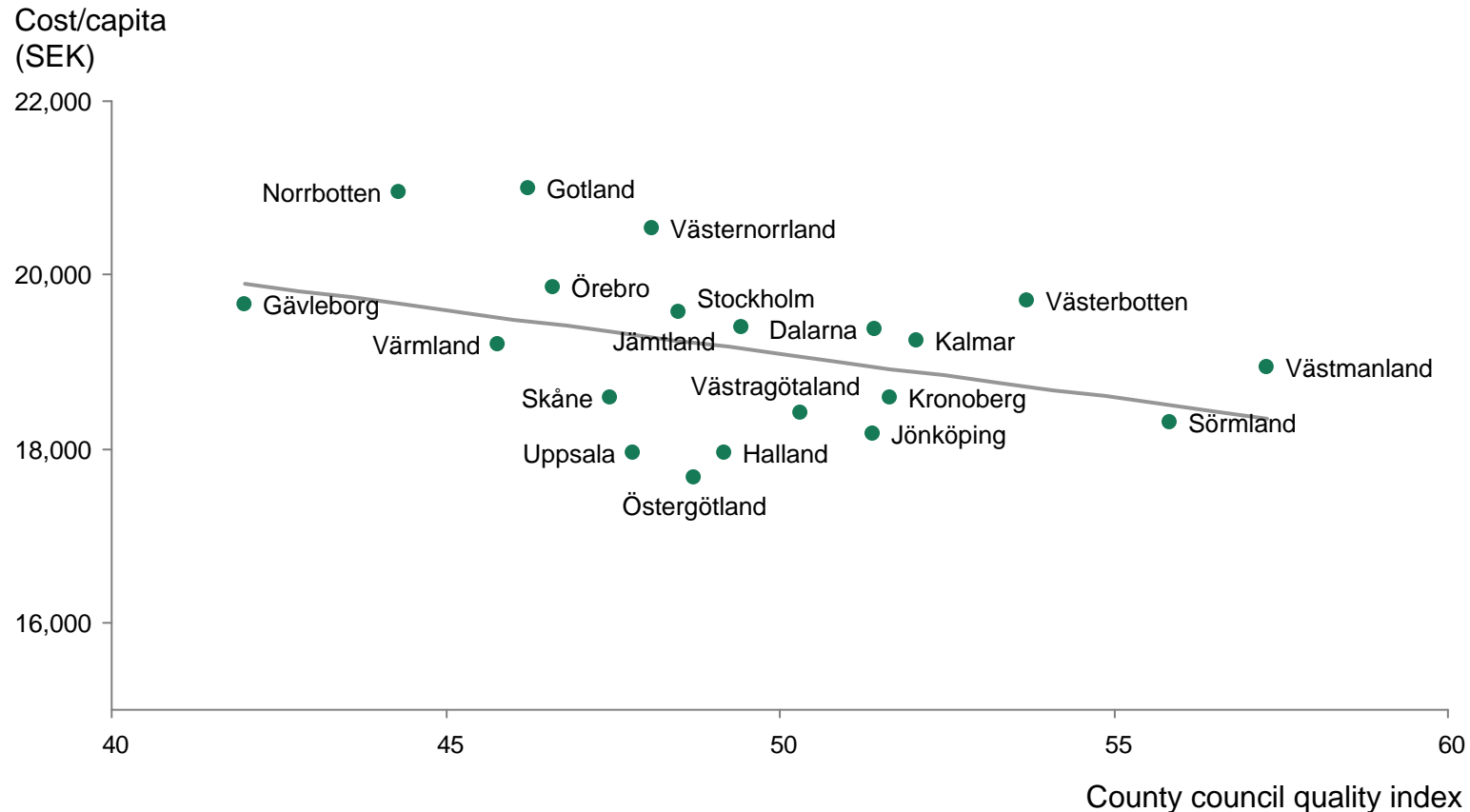
Quality index raised from 1 to 4
 Mortality reduced by 50%
 Ranked #45



1. Percutaneous coronary intervention 2. on angiography and PCI 3. Riks-HIA
 Source: SVT.se; Aftonbladet 2007-03-08; DN 2009-05-06; Dagens Medicin 2008-08-26; Läkartidningen nr 44 vol. 104, 2007; Värmlands Folkblad 10 Oct 2007

Better quality of care without increasing payer cost

Quality versus cost of healthcare in Swedish county councils 2008



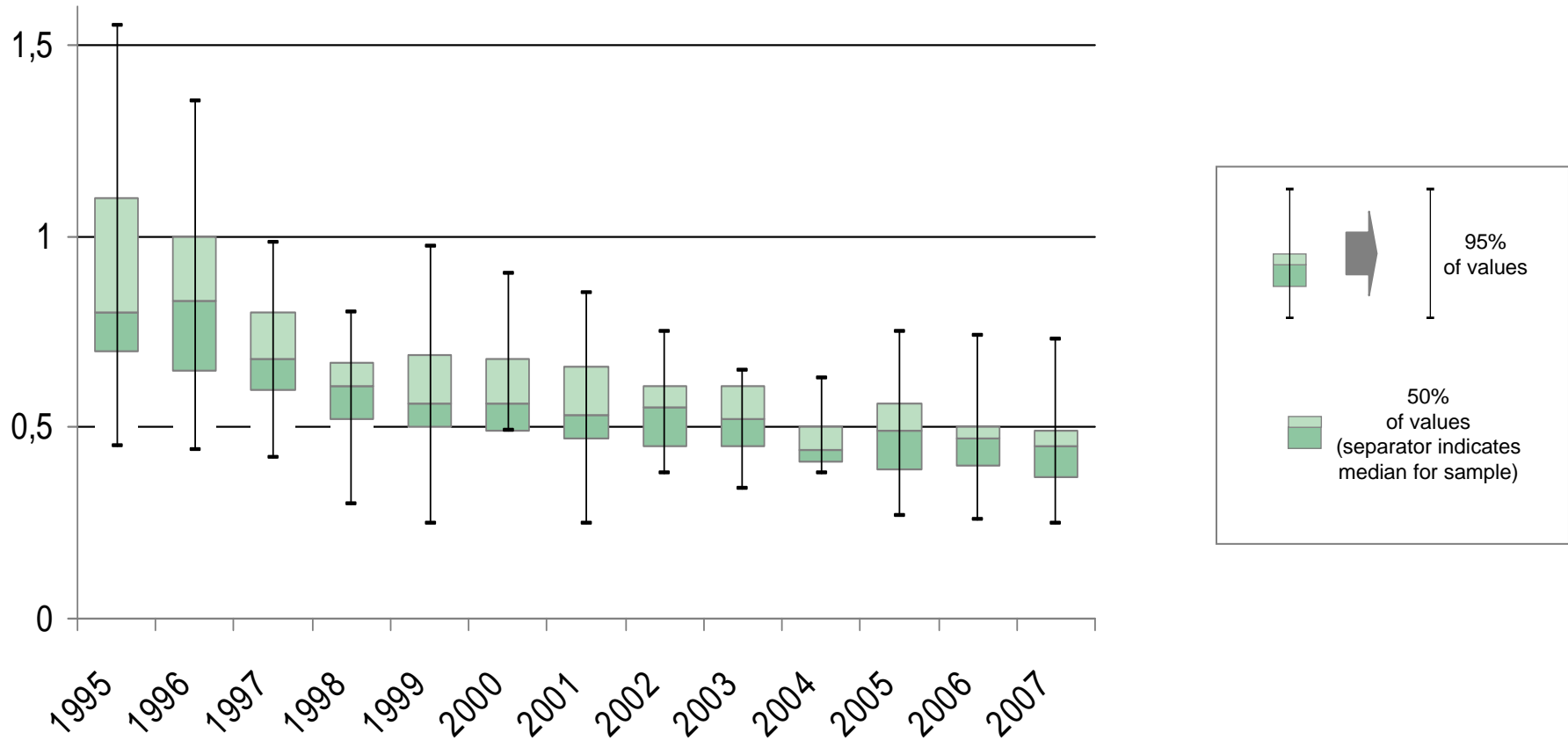
Systemic quality improvement work has delivered 1-3% annual cost savings per patient group

Note: Cost including; primary care, specialized somatic care, specialized psychiatry care, other medical care, political health- and medical care activities, other subsidies (e.g. drugs)
Source: Öppna jämförelser, Socialstyrelsen 2008; Sjukvårdsdata i fokus 2008; BCG analysis

Best practice sharing leads to treatment convergence

Facilitates testing of value for new therapies

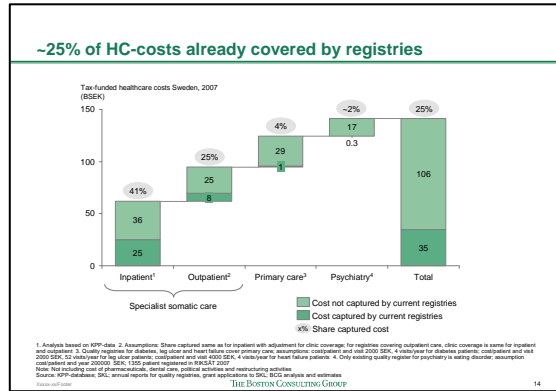
Induced astigmatism through laser eye surgery, average and variance (# of dioptres¹)



1. Dipotre = measured as average change of dioptre per clinic based on individual patient data 2. CRP-C = reactive protein level in blood indicating level of inflammation. Lower level of CRP indicate lower level of inflammation short-term as well as lower risk for inflammation long-term 3. National coverage 56% while Falun coverage is 100% for all types of RA-patients. Since 1997 Falun has measured and followed-up all its RA-patients on a monthly basis. Data has been used for regional quality work.

Source: Cataract Annual Report 2007; RA Annual Report 2008-09

Five building blocks in the BCG recommendation



A shared 10 year vision for Swedish healthcare

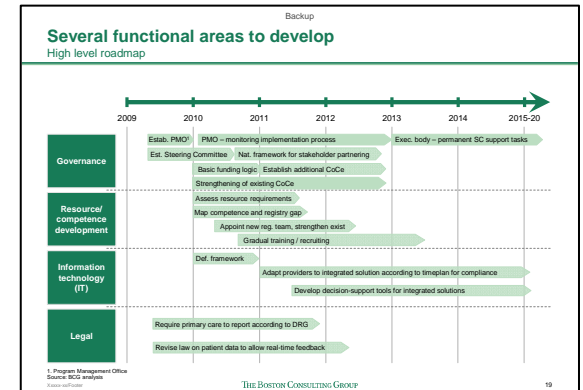
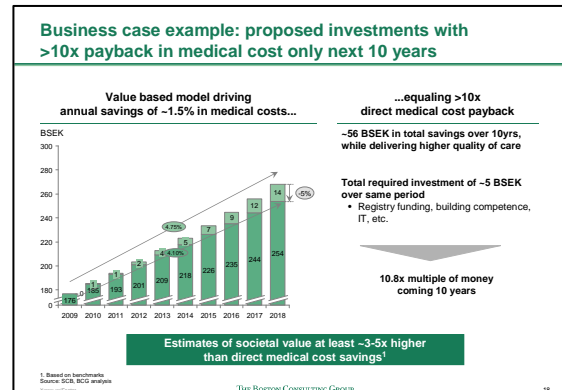
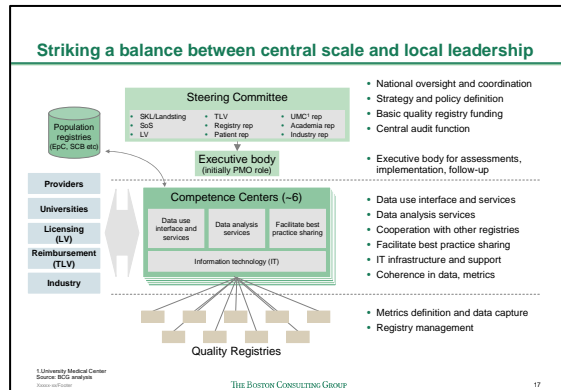
THE NEW ENGLAND JOURNAL OF MEDICINE
August 18, 2019

Swedish healthcare system envy of world

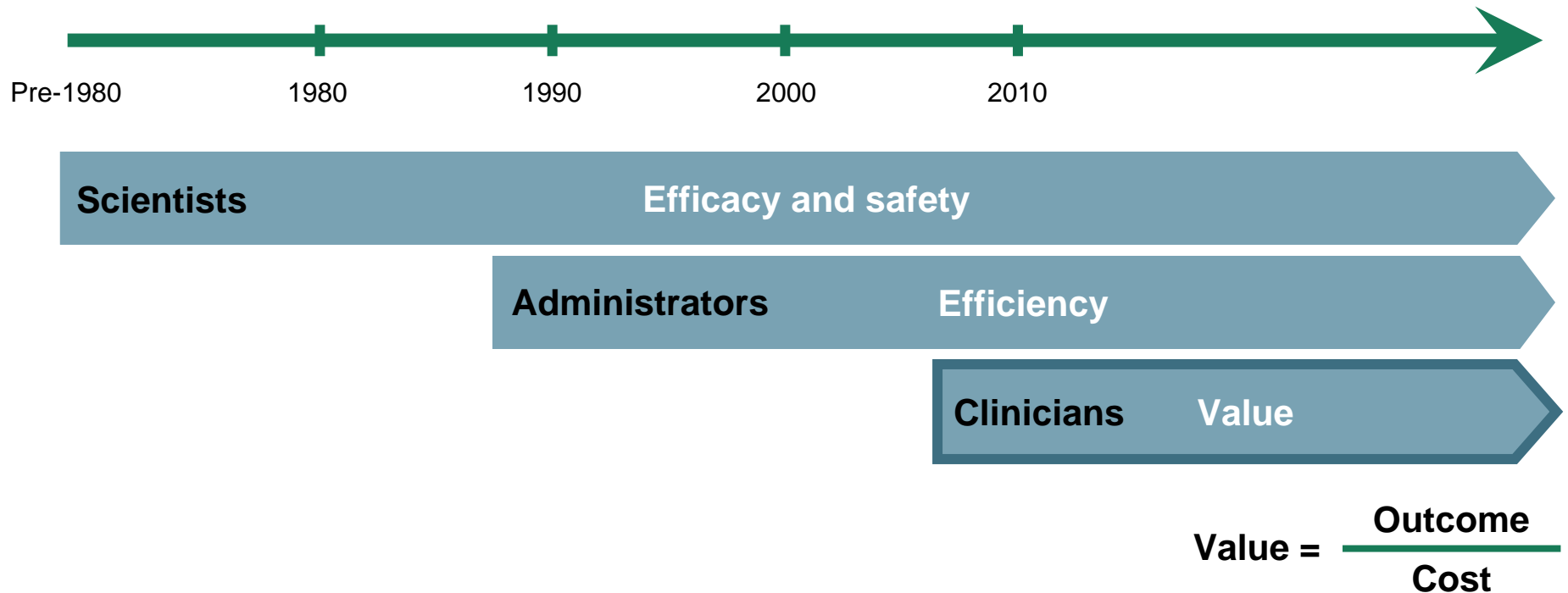
In the past 10 years Sweden has emerged as the leading nation in value based healthcare and personalized medicine. Today, Swedish physicians and nurses work interactively with outcomes analysis and decision-support tools to deliver world-class healthcare results for their patients. The Swedish healthcare system displays several unique characteristics:

- Clinical researchers have access to some of the best data sources in the world. Many important clinical breakthroughs have been made over the last years by teams integrating comprehensive clinical outcomes data with high quality data from national population and cost registries.
- Swedish patients and their relatives are empowered to make informed care choices based on the quality of care. Outcomes information services provide transparent performance data for all providers in the country.
- Sweden is the fastest nation in the world in making valuable new drugs available to their population. The Swedish MPA (LV); the Dental and Pharmaceutical Benefits Agency (TLV) and clinical research competence centers work closely together to define how to best assess the value of conditionally registered products and efficiently determine appropriate reimbursement levels.
- Sweden is the pharmaceutical and medical technology industries' country of choice for conducting post-approval safety, efficacy, and cost-benefit studies. This has been one of the key factors that have enabled a reinvigoration of the Swedish life-science industry.

In addition to the clinical benefits, focusing on value based healthcare has saved the Swedish taxpayer ~50 BSEK in reduced direct medical costs. No wonder Sweden is being flocked by researchers from other countries eager to learn how outcomes and cost measurements can lead to world class research and clinical care.



Value based healthcare - an emerging paradigm shift



**Will enable needed transformational change
across HC industry**