



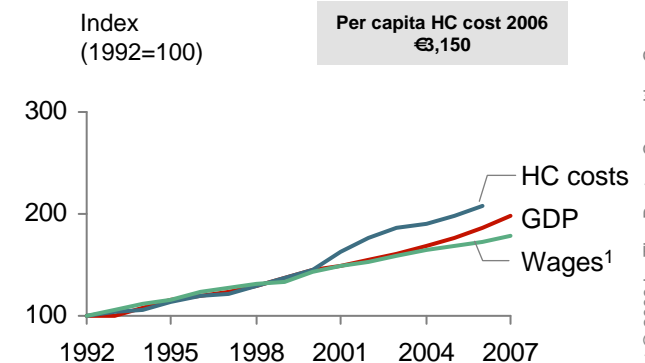
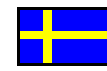
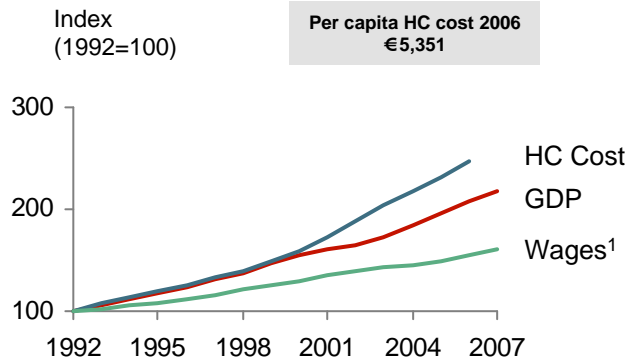
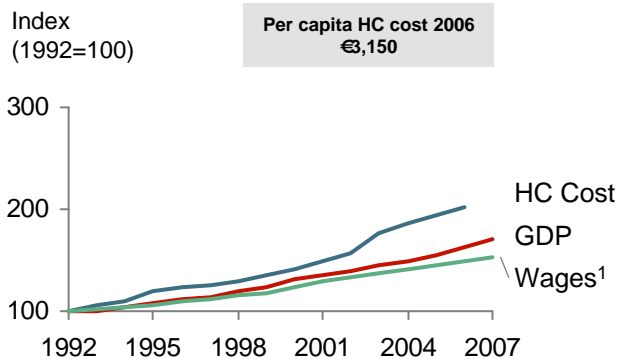
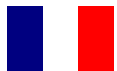
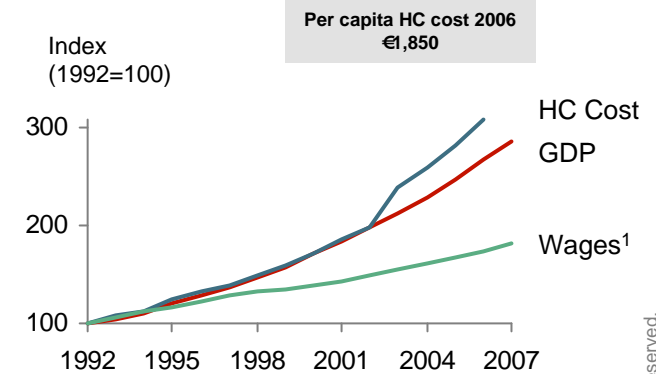
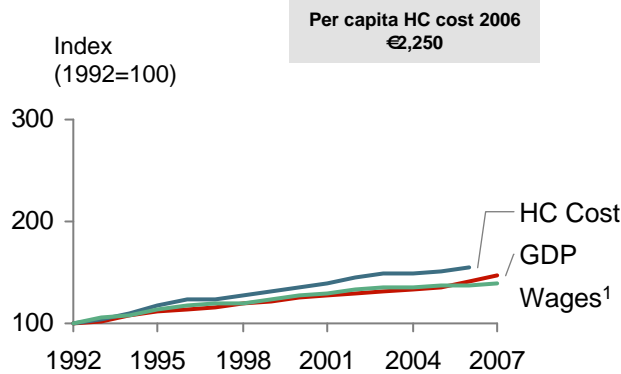
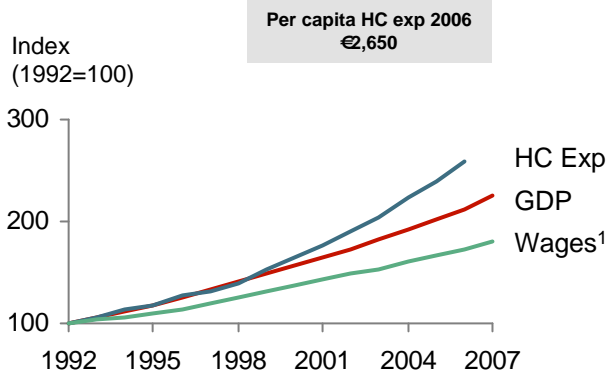
Value guided healthcare as a platform for industrial development in Sweden – feasibility study

Conference presentation

Göteborg August 18th, 2009

THE BOSTON CONSULTING GROUP

Unsustainable growth in healthcare spend

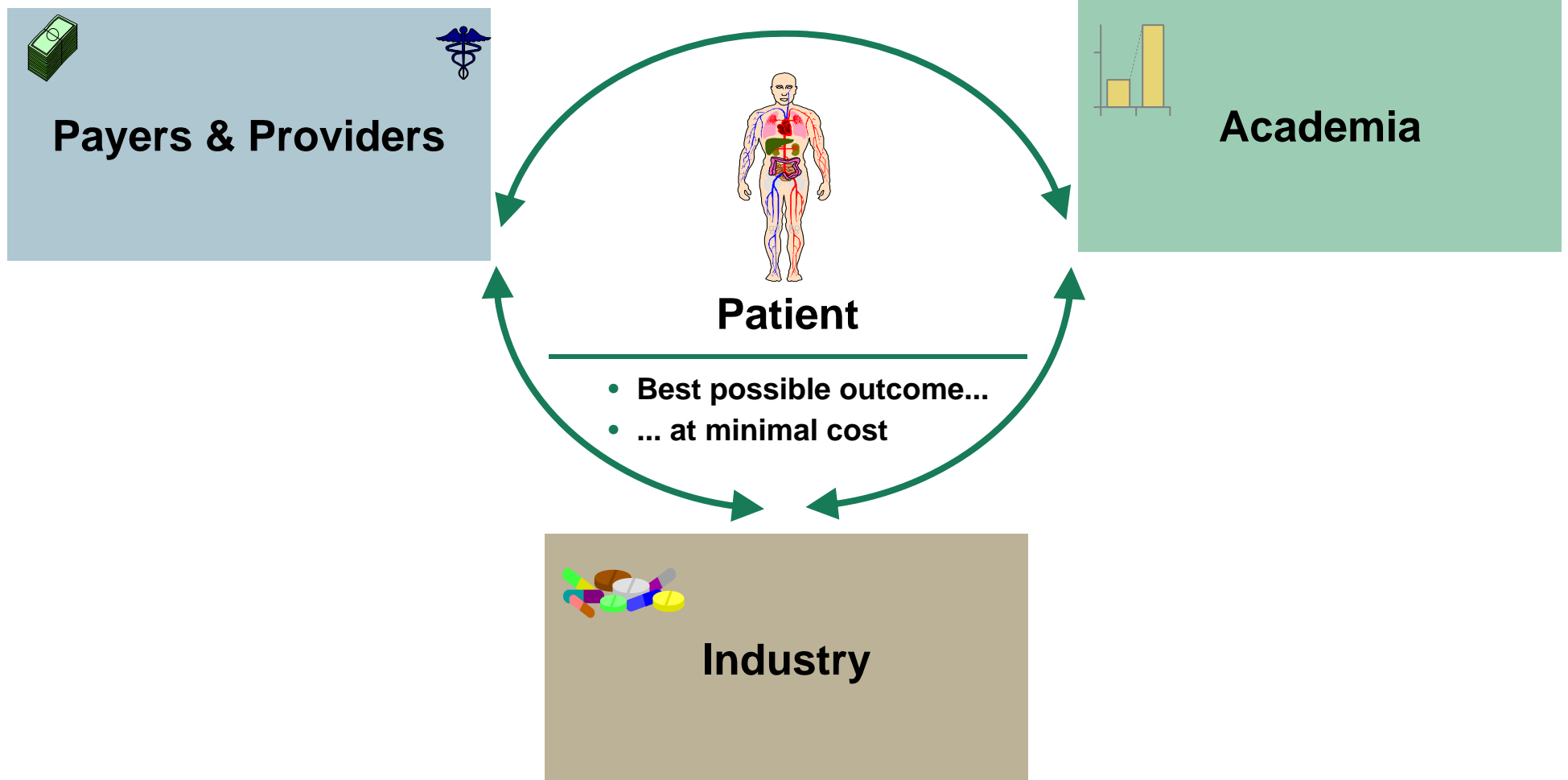


1. Average nominal wage index

Note: Index on basis of local currency; Per capita HC cost 2006 at exchange rate of 1 USD=0,797 €, 2005: 110,22 Yen/US\$

Source: OECD Health Data 2008; EIU

Competing in the future healthcare industry



Current study scope holistic – integrating efforts by many

Large interest in outcomes but
lack of shared vision, clear leadership
and coordination

Scope of study
to bring efforts together towards
common vision and roadmap



Concrete and realistic 10-year vision
with healthcare system perspective

Current landscape, vision and roadmap
discussed with all key stakeholders

Roadmap allowing for paced
implementation

Steering and reference group members

	Name	Role
<u>Steering group</u>	Carl Bennet	Ordförande i Getinge, Göteborgs Universitet
	Anders Ekblom	Vice-President Development AstraZeneca
	Maria Anvret	Professor FRCPath, forskningspolitisk talesperson Svenskt Näringsliv, ledamot IVA
	Sigbrit Franke	Rådgivare till Umeå & Stockholm Universitet, tidigare Universitetskansler
	Claes Ånstrand	Tidigare statssekreterare och landstingsråd
<u>Reference Group</u>	Gunnar Alvan	Tidigare GD Läkemedelsverket
	Göran Sandberg	Rektor Umeå Universitet
	Kjell Asplund	Tidigare GD Socialstyrelsen
	Marie Beckman Suurküla	Sjukhusdirektör Akademiska sjukhuset tillika biträdande landstingsdirektör
	Joakim Dillner	Professor, forskare
	Anna Hedborg	Tidigare stadsråd och GD
	Nina Rehnqvist	Professor, ordförande i SBU
	Göran Stiernstedt	Direktör, avd. chef vård och omsorg SKL, tidigare biträdande landstingsdirektör
	Ulf Wahlberg	Vice President, industri research relations Ericsson
	Gunnar Nemeth	Managing Director and Chief Operating Officer Capio Group

Agenda

Starting position

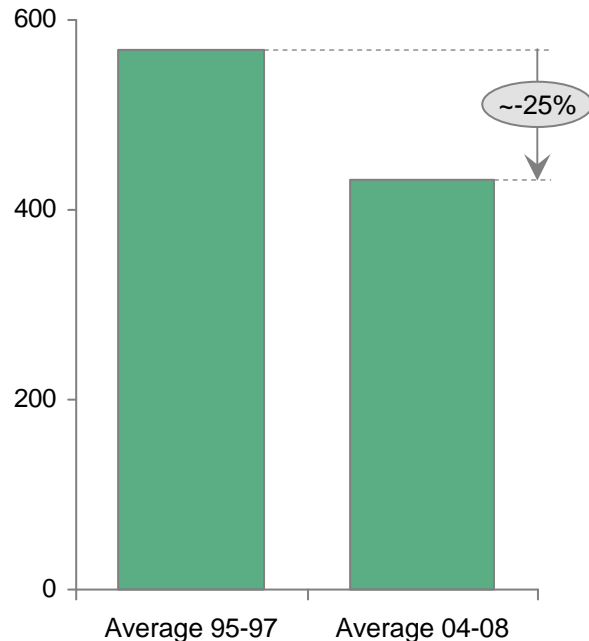
Shared vision and value captured

Way forward

Sweden's strength in healthcare increasingly challenged

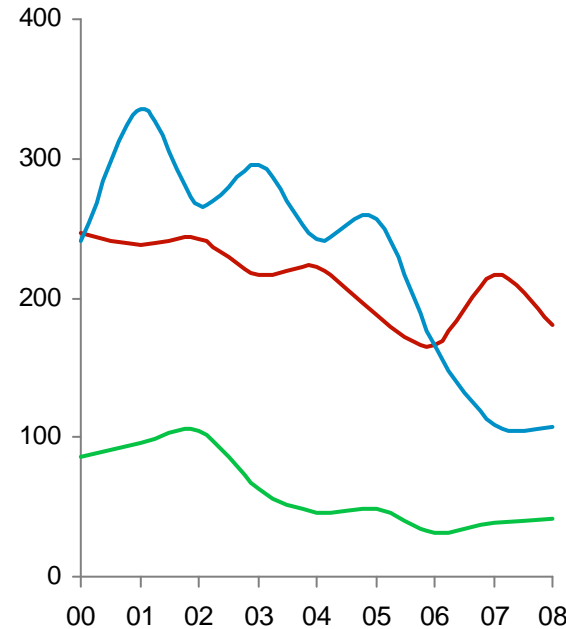
Sweden losing clinical trial volumes

Ongoing clinical trials per year in Sweden (#)



Drop in registered patents

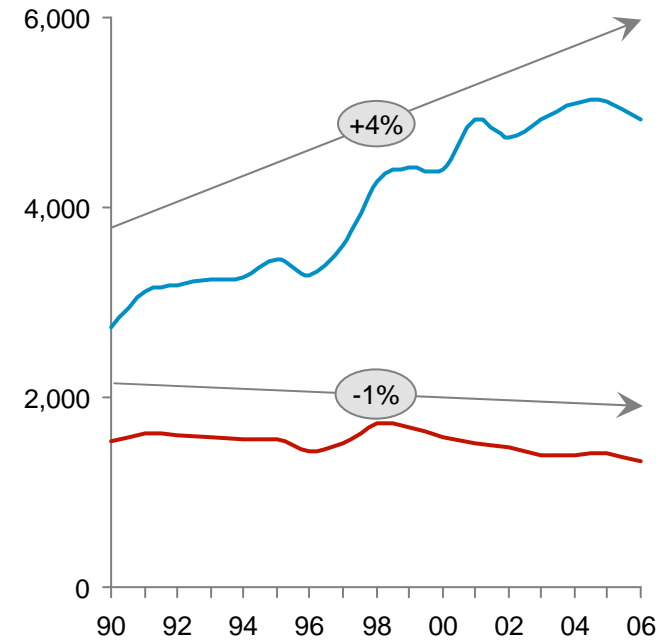
Patents registered at PRV (#)



— Industrial chemistry
— Organic chemistry
— Biotechnology

Medically trained students shrinking share of Medical faculty PhDs

PhD students at medical faculties¹

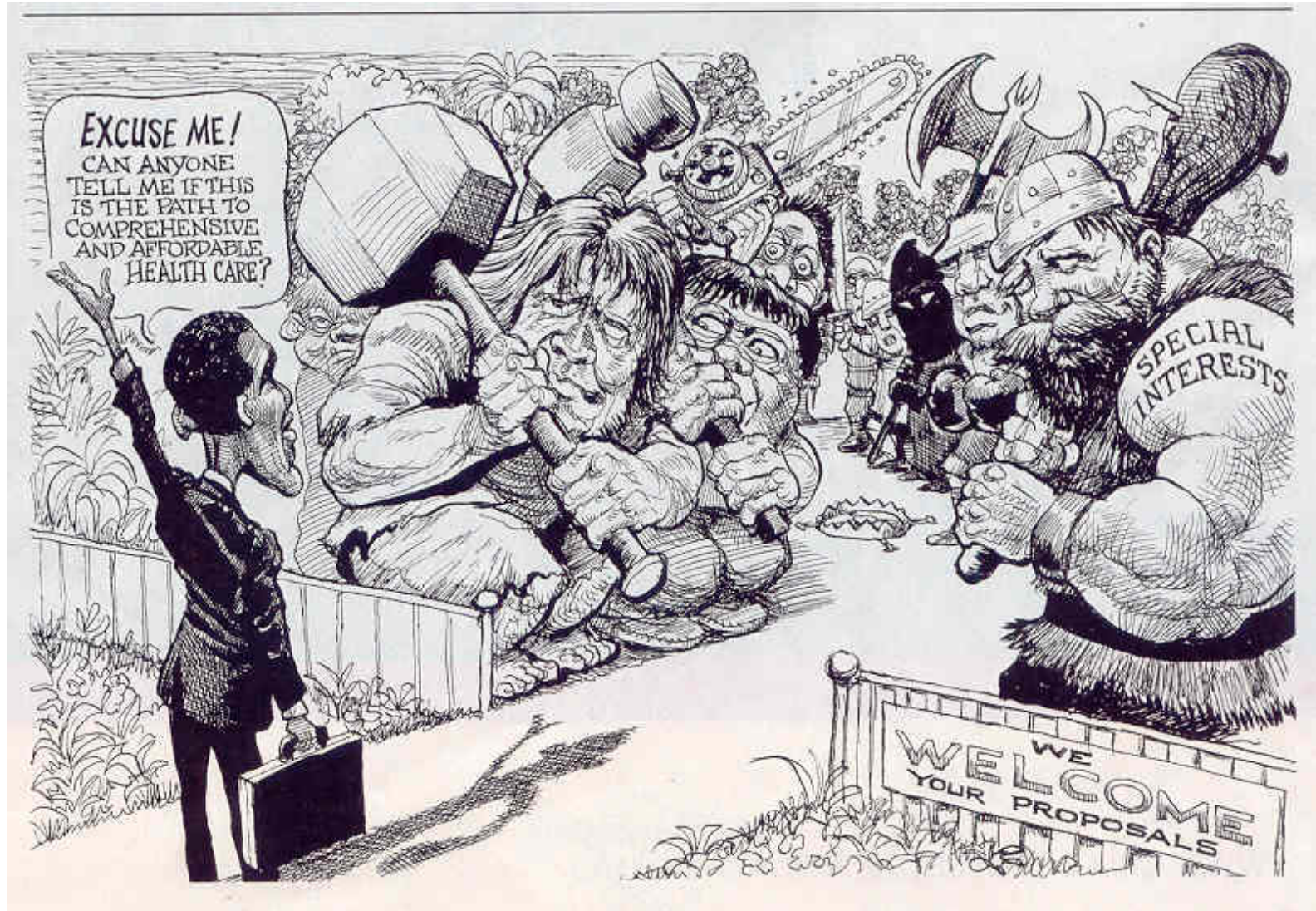


— PhD Students at medical faculties, total
— PhD students at medical faculties with MD

1. At Uppsala University, Karolinska Institutet; Lund University and Gothenburg University
Note: CAGR=Compounded Annual Growth Rate

Source: Klinisk forskning – ett lyft för sjukvården, Läkemedelsverket; SCB; Teknikområdesbarometern 2006-2008 PRV; BCG Analysis

Improving healthcare easier said than done



Source: The Economist

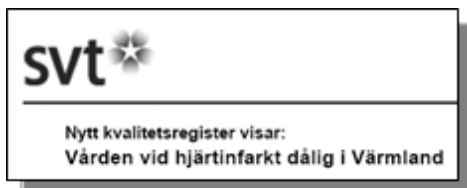
Transparency drives rapid improvements

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



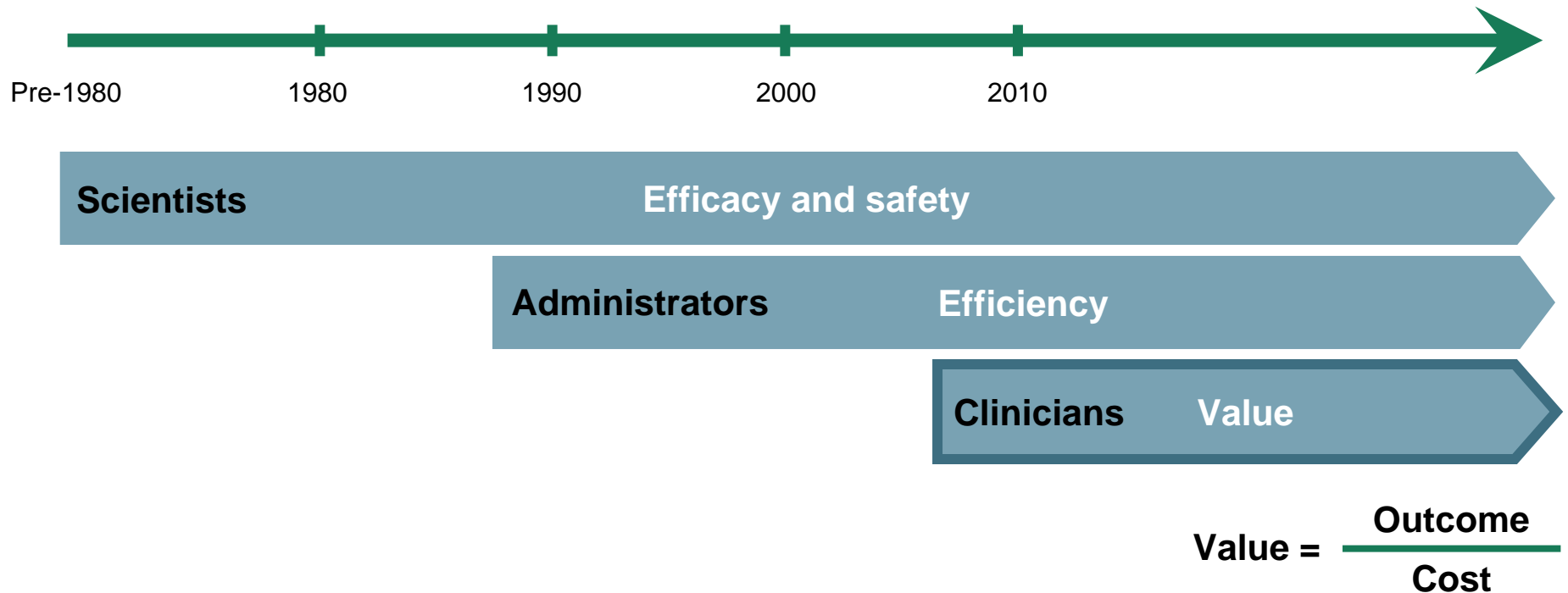
Care aligned with national treatment guidelines²
 New specialist departments for specific coronary conditions started
 Staffing improved

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

Value based healthcare new paradigm emerging

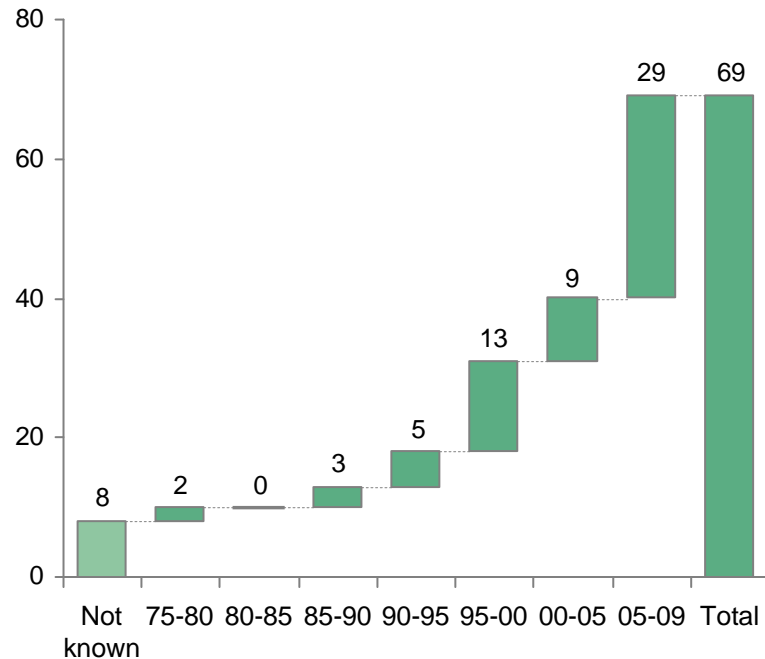


- Measured as outcomes, not inputs
- Defined around patient, not supplier
- Measured over full cycle-of-care

Sweden with strong starting point in quality assessment

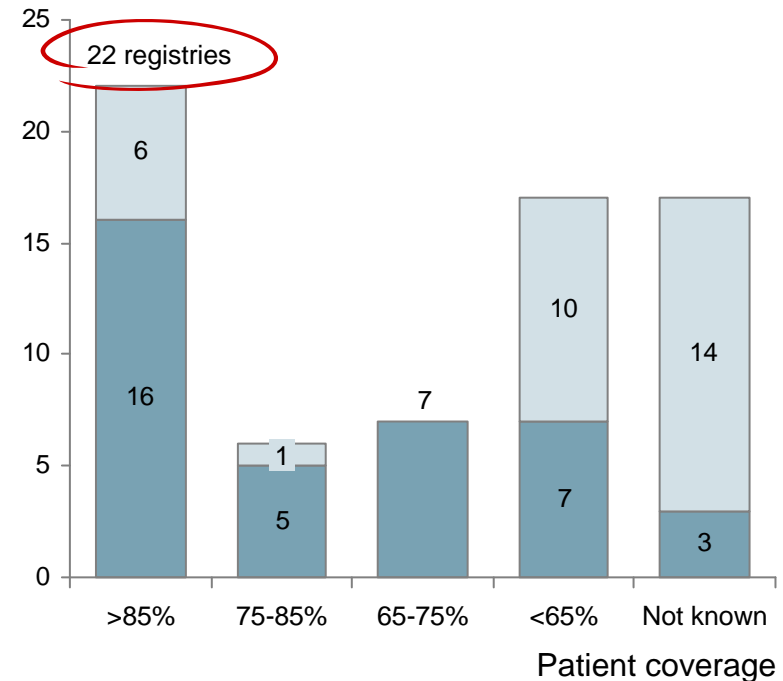
69 quality registries started to date¹

Quality registries by start year
(# of registries)



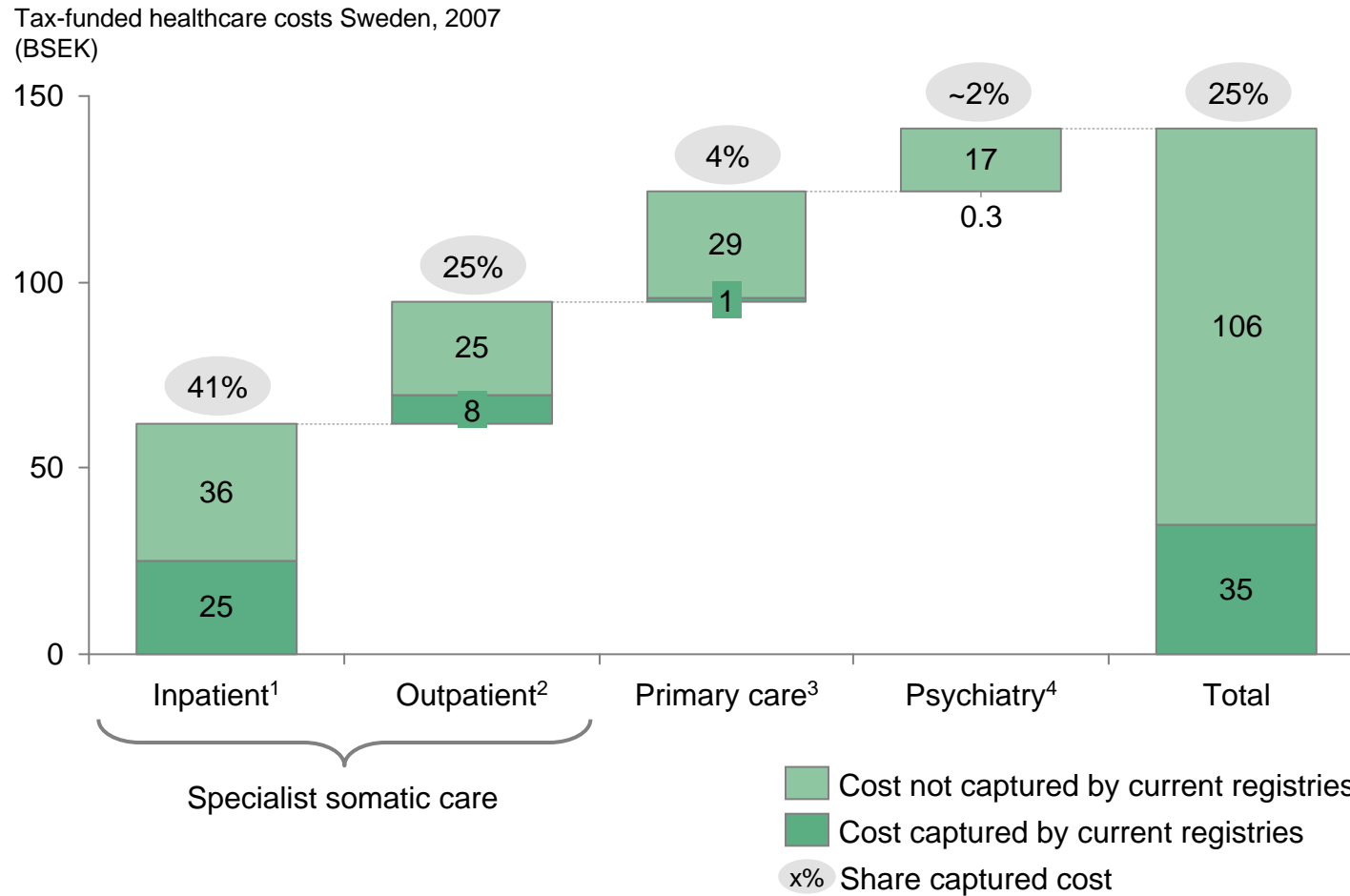
>20 registries with >85% patient coverage

Quality registries by patient coverage, start year
(# of registries)



1. Only including registries receiving funding from SKL
Source: "National Healthcare Quality Registries in Sweden 2007"; Grant applications; BCG analysis

~25% of HC-costs already covered by registries

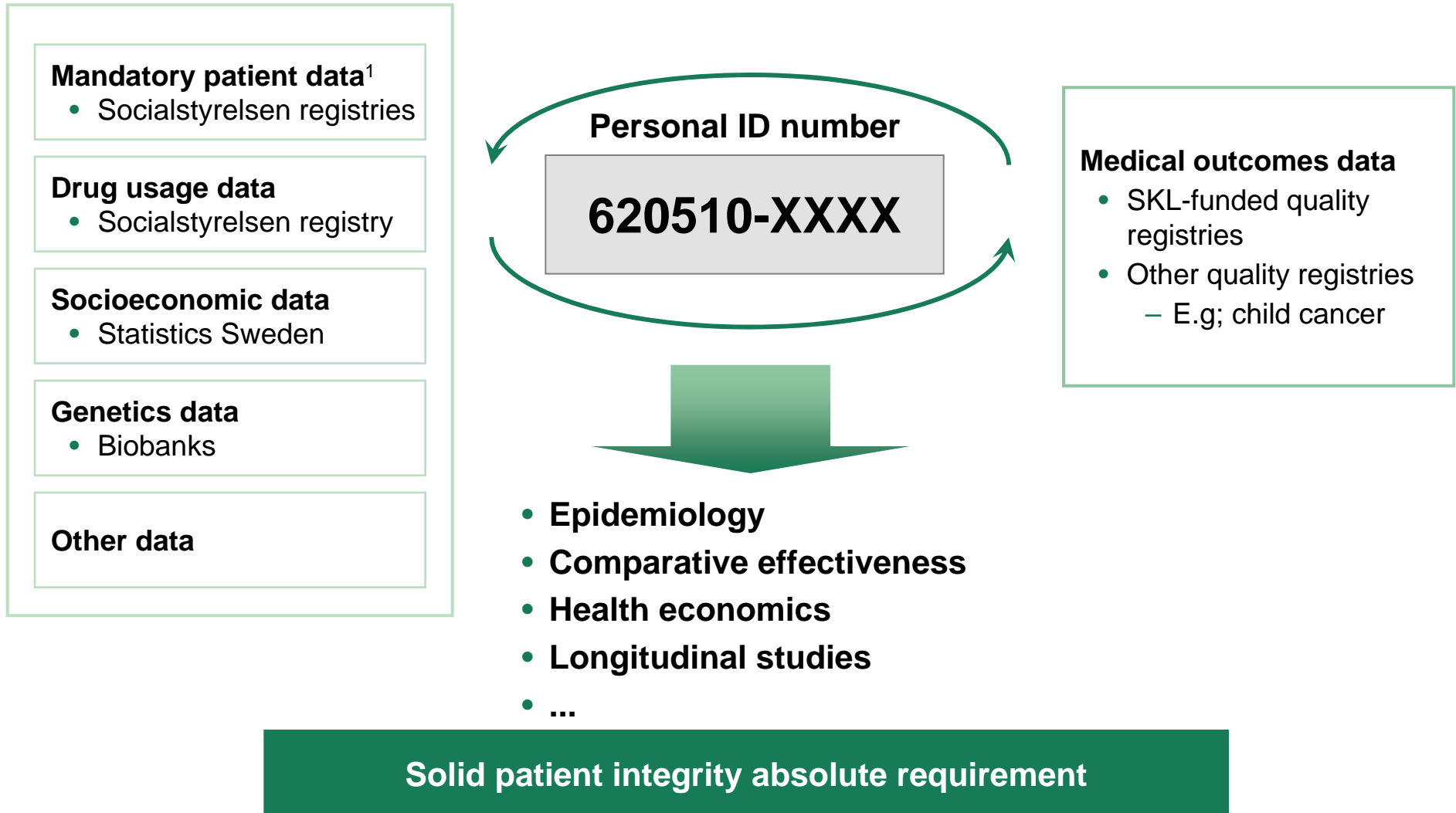


1. Analysis based on KPP-data 2. Assumptions: Share captured same as for inpatient with adjustment for clinic coverage; for registries covering outpatient care, clinic coverage is same for inpatient and outpatient 3. Quality registries for diabetes, leg ulcer and heart failure cover primary care; assumptions: cost/patient and visit 2000 SEK, 4 visits/year for diabetes patients; cost/patient and visit 2000 SEK, 52 visits/year for leg ulcer patients; cost/patient and visit 4000 SEK, 4 visits/year for heart failure patients 4. Only existing quality register for psychiatry is eating disorder; assumption cost/patient and year 200000 SEK; 1355 patient registered in RIKSÅT 2007

Note: Not including cost of pharmaceuticals, dental care, political activities and restructuring activities

Source: KPP-database; SKL; annual reports for quality registries, grant applications to SKL; BCG analysis and estimates

Unique platform from broad range of personal registries



1. e.g. medical birth, birth defects, (eg MFR)

Agenda

Starting position

Shared vision and value captured

Way forward

A shared 10 year vision for Swedish healthcare



The NEW ENGLAND
JOURNAL of MEDICINE

Swedish healthcare system envy of world

August 18, 2019

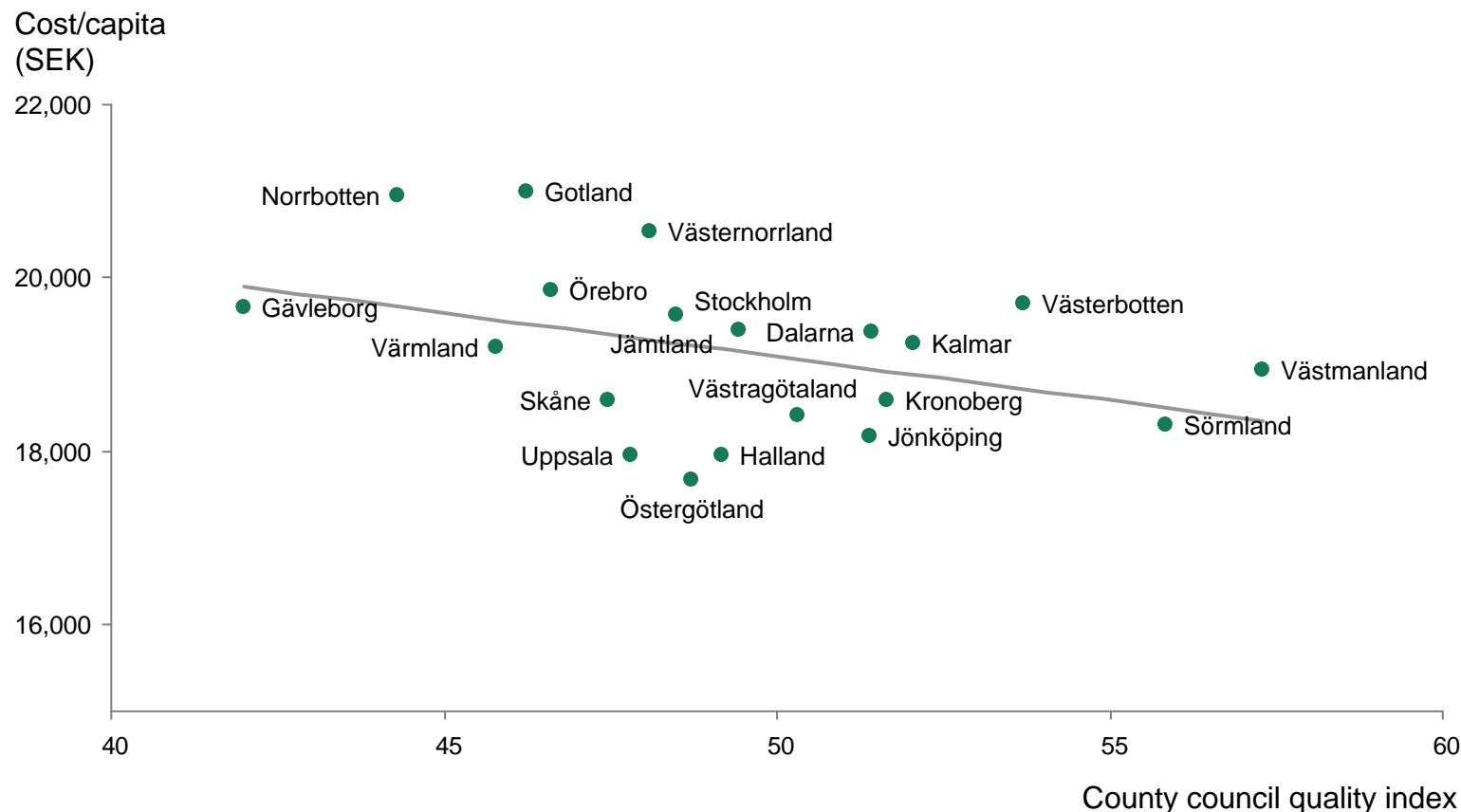
In the past 10 years Sweden has emerged as the leading nation in value based healthcare and personalized medicine. Today, Swedish physicians and nurses work interactively with outcomes analysis and decision-support tools to deliver world-class healthcare results for their patients. The Swedish healthcare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

Better quality of care without increasing payer cost

Quality versus cost of healthcare in Swedish county councils 2008

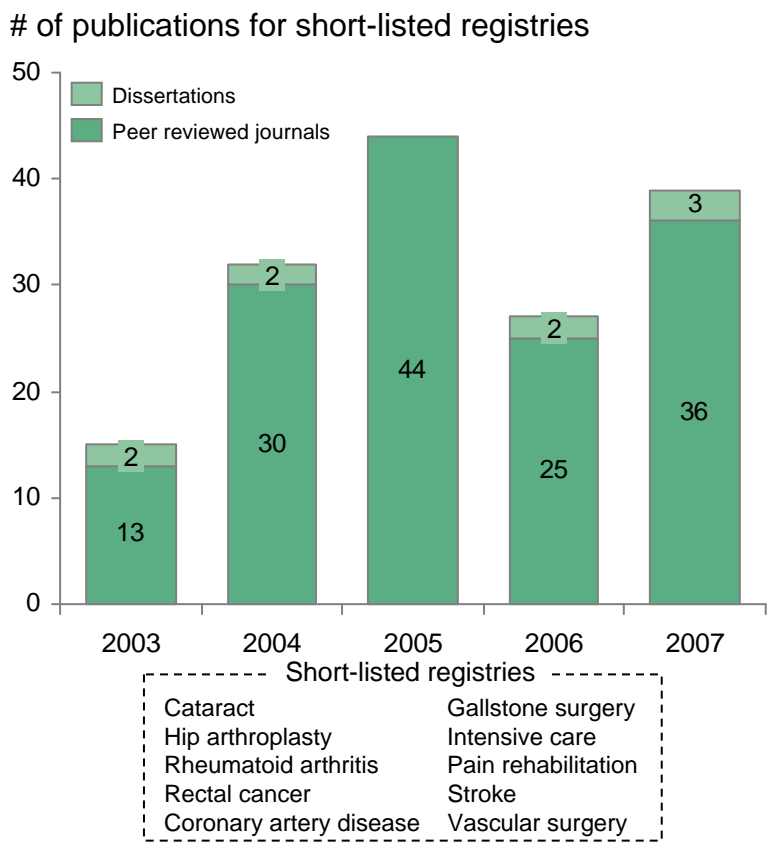


Systemtic quality improvement work has delivered 1-3% annual cost savings per patient group

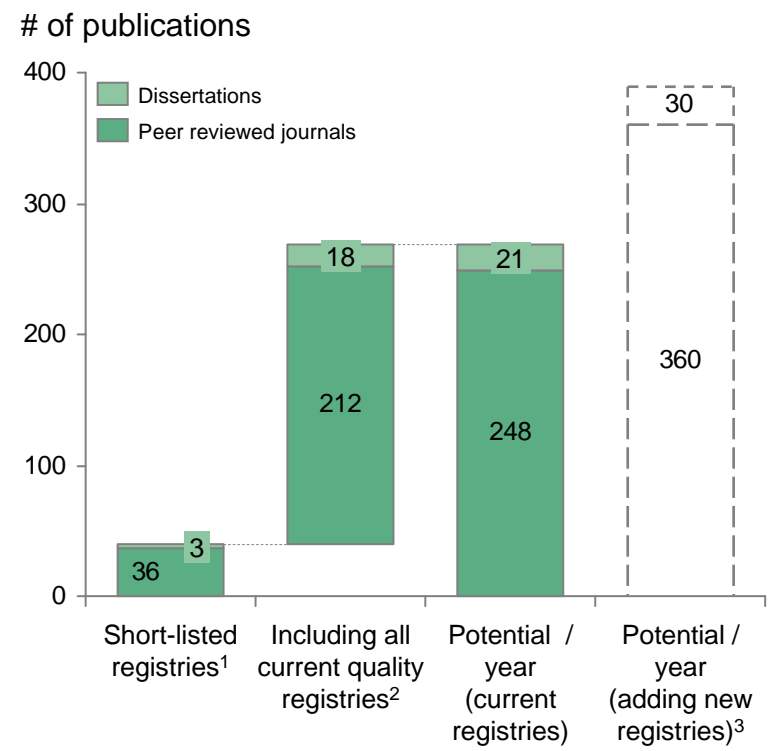
Note: Cost including; primary care, specialized somatic care, specialized psychiatry care, other medical care, political health- and medical care activities, other subsidies (e.g. drugs)
 Source: Öppna jämförelser, Socialstyrelsen 2008; Sjukvårdsdata i fokus 2008; BCG analysis

Quality registries significant source of clinical research

10 short-listed registries important source of research



~400 publications / year conservative estimate of future potential

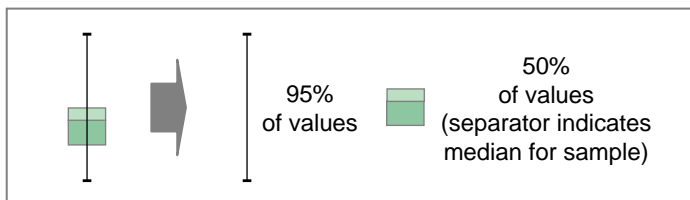
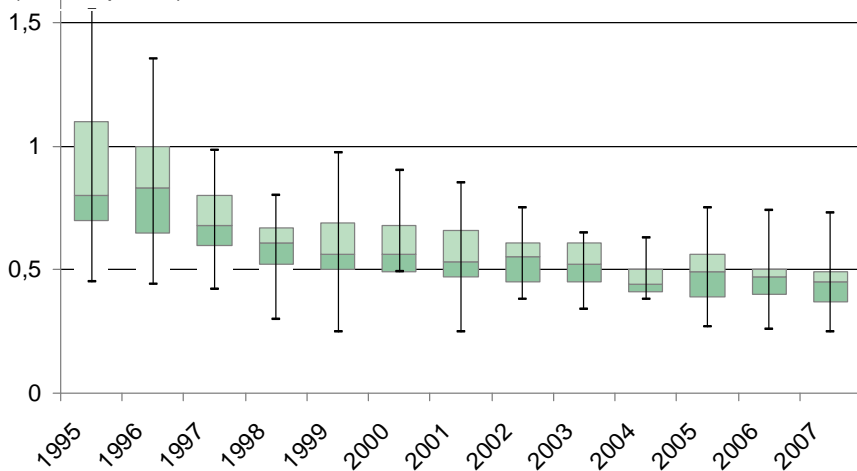


1. # of publications for 10 short listed quality registries in 2007 2. Average number of publications per short-listed registry 2007 multiplied by number of registries (59)
 3. Adding 31 new quality registries to capture a larger share of total HC-cost
 Note: Total number of publications in clinical medicine: 4,000 / year; Total number of dissertations in medicine: 900 / year
 Source: Högskoleverket & SCB 2008, KLiniks forskning – ett lyft för sjukvården 2009; registry annual reports, registry grant applications to SKL; BCG analysis

Treatment convergence facilitates testing of new therapies

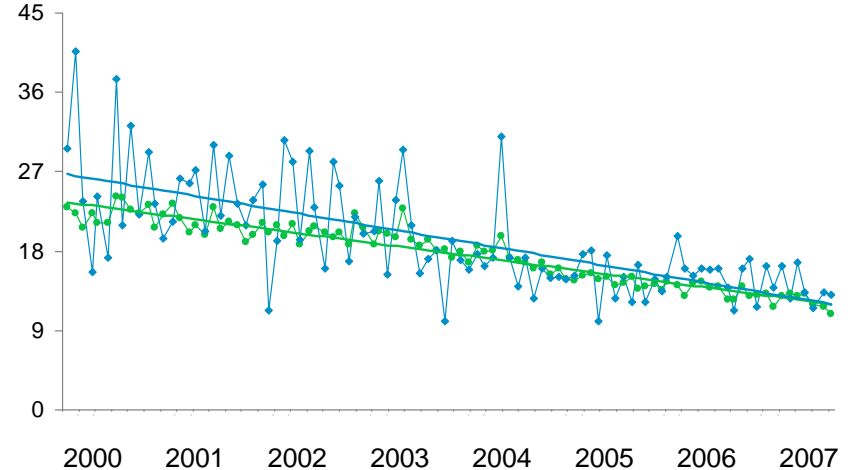
Less side-effects (astigmatism) in laser eye surgery over time and lower variance

Induced astigmatism through laser eye surgery, average and variance (# of diopres¹)



Significantly lower inflammation levels for rheumatoid arthritis patients and lower variance in outcomes

Average RA CRP value (%)

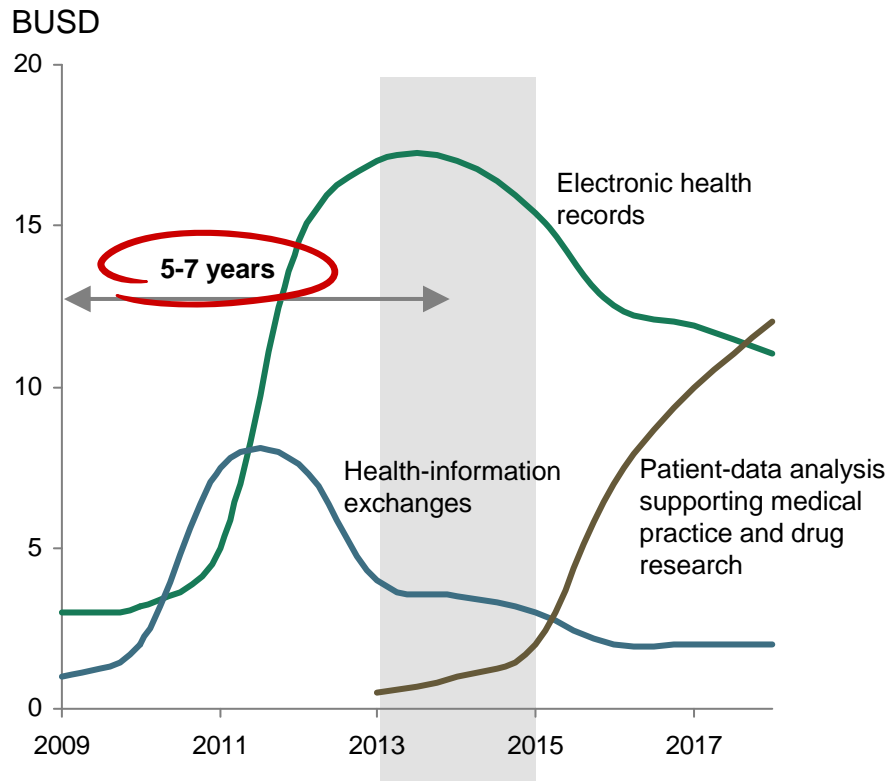


1. Dipotre = measured as average change of dioptre per clinic based on individual patient data 2. CRP-C = reactive protein level in blood indicating level of inflammation. Lower level of CRP indicate lower level of inflammation short-term as well as lower risk for inflammation long-term 3. National coverage 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

Immediate action needed to keep ~5 year advantage

US projected health IT investments



European examples



Sundhedskvalitet



Schön Kliniken

Agenda

Introduction

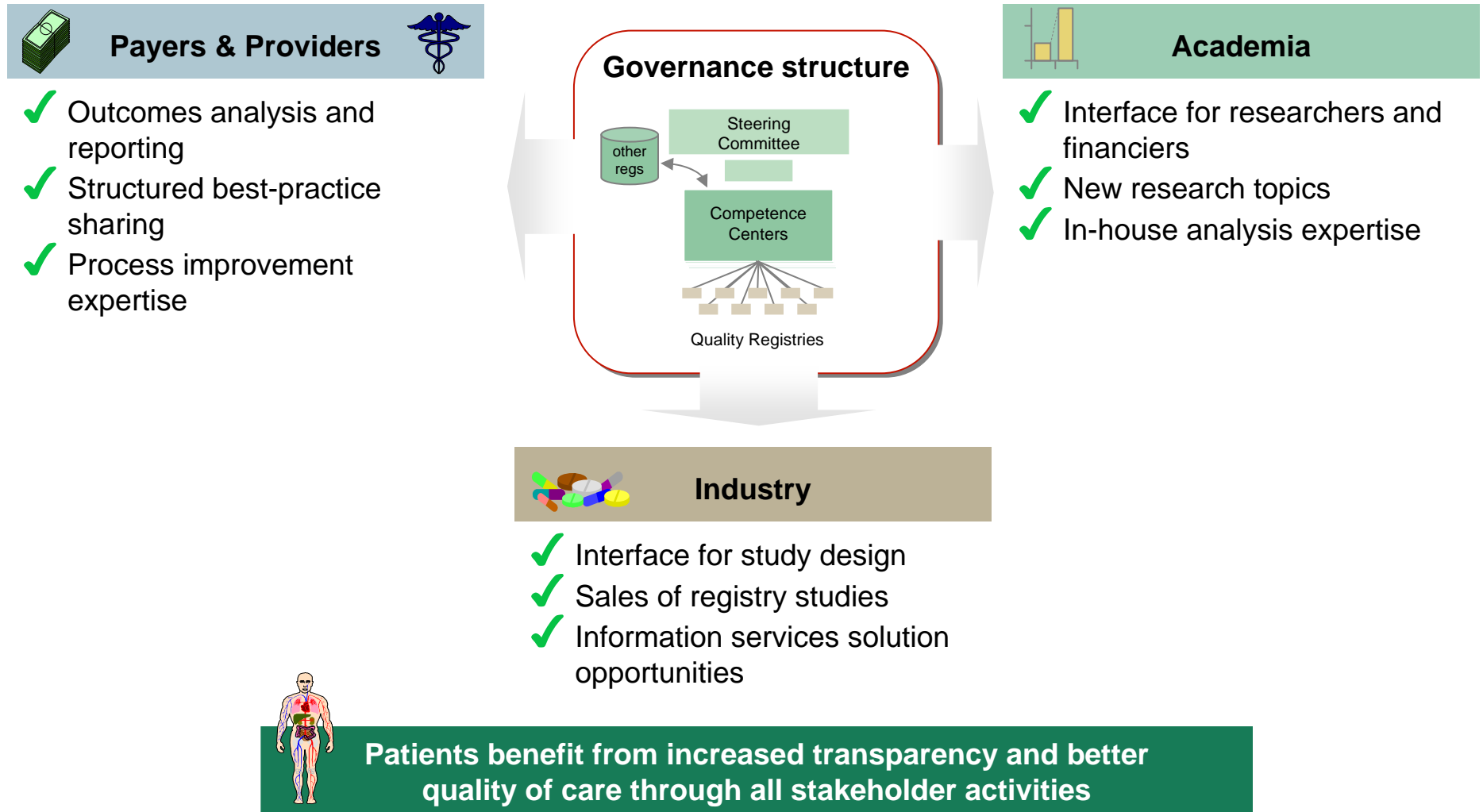
Starting position

Shared vision and value gained

Way forward

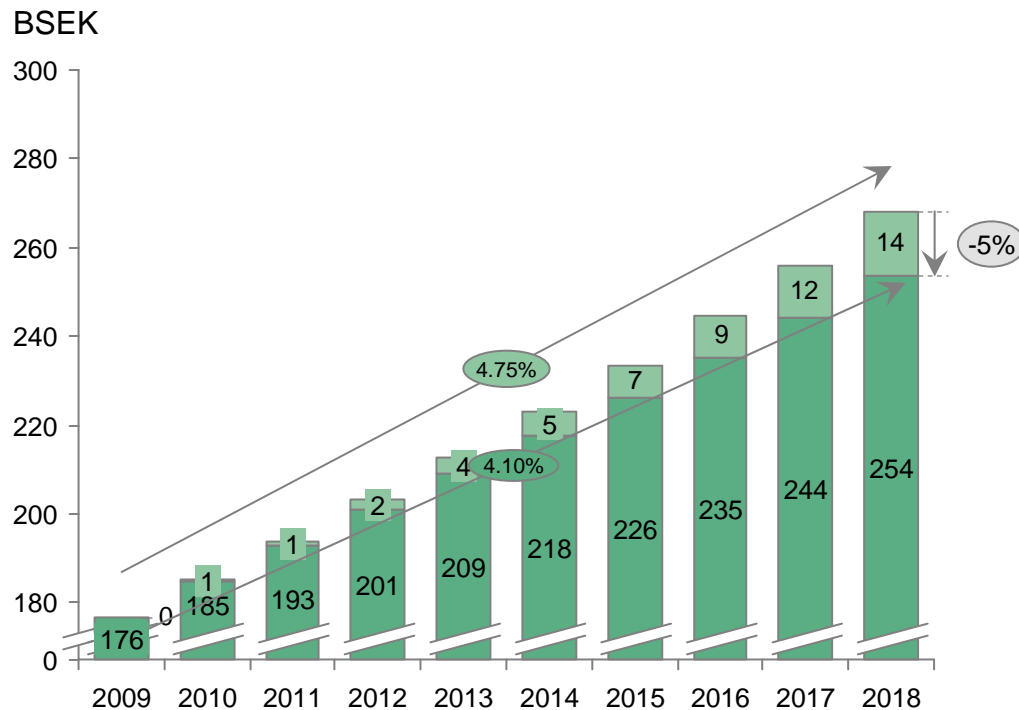
Governance structure engine for value capture

Infrastructure and expertise for evidence-based methodology and processes



Business case example: proposed investments with >10x payback in medical cost only next 10 years

Value based model driving annual savings of ~1.5% in medical costs...



...equaling >10x direct medical cost payback

~56 BSEK in total savings over 10yrs, while delivering higher quality of care

Total required investment of ~5 BSEK over same period

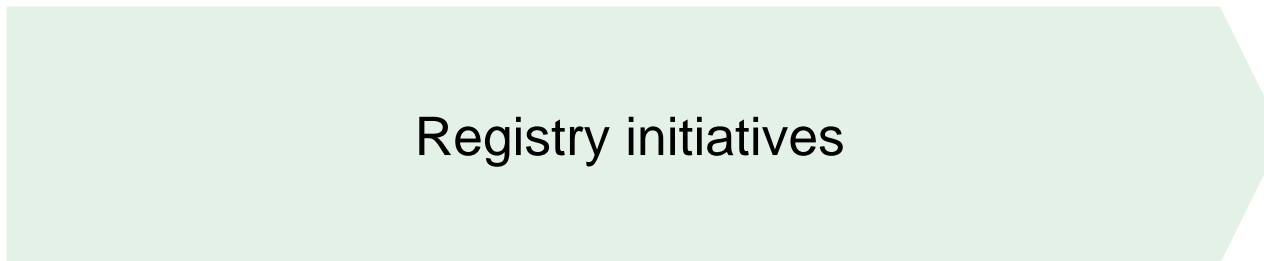
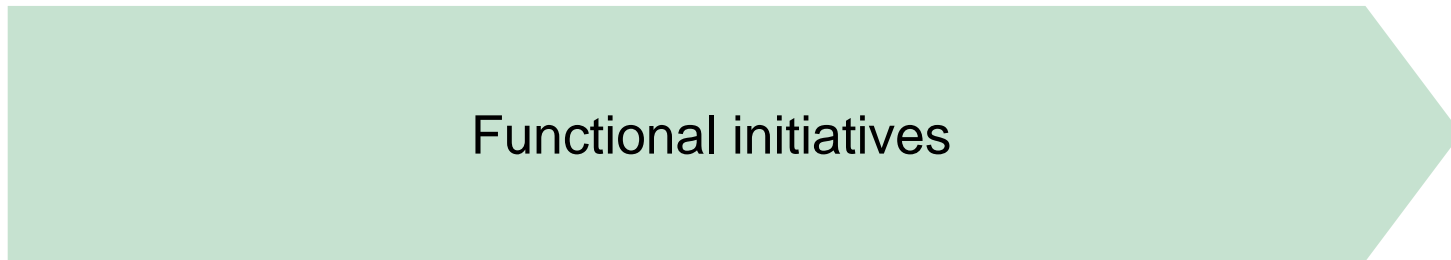
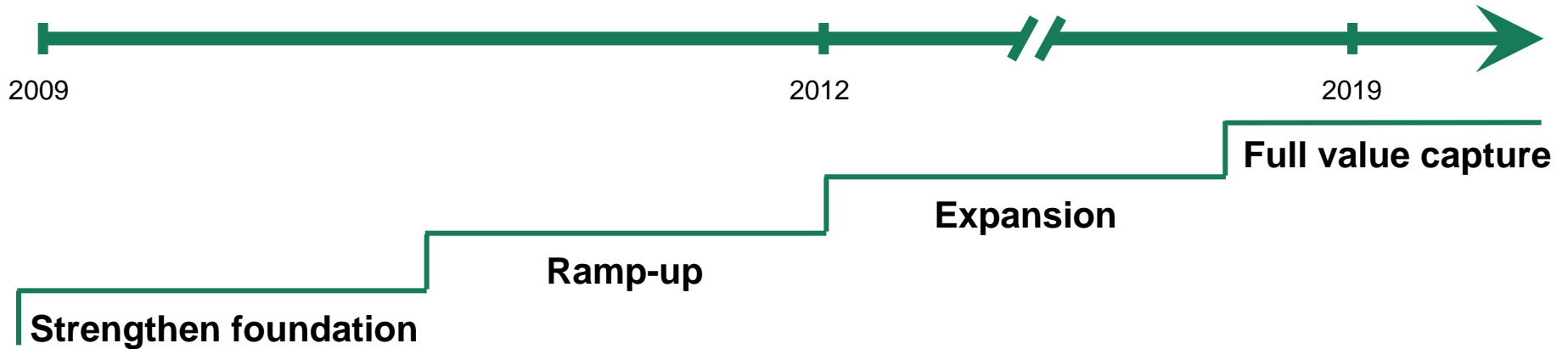
- Registry funding, building competence, IT, etc.

10.8x multiple of money coming 10 years

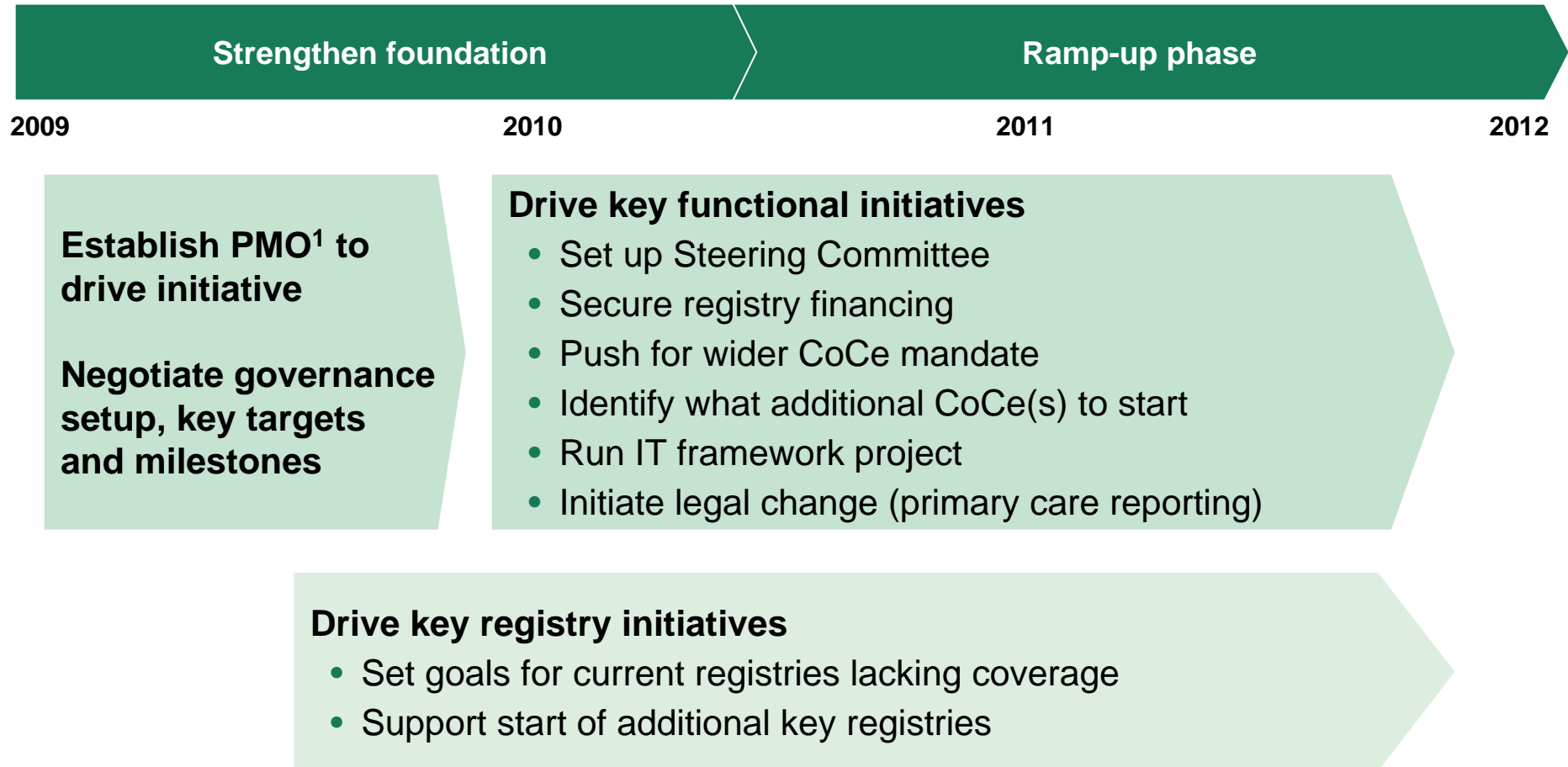
Estimates of societal value at least ~3-5x higher than direct medical cost savings¹

1. Based on benchmarks
Source: SCB, BCG analysis

Four-step approach to realize vision and capture value



Need for immediate actions to secure momentum in 2-3 yrs



1. Program Management Office
Source: BCG analysis

Sammanfattning

- 1. Den viktigaste utmaningen för den västerländska sjukvården det närmaste decenniet är hur man skall öka dess produktivitet. Ett nytt paradig växer fram för att adressera detta – Resultatstyrd vård. Vårdinsatser utvärderas efter bidraget till patientens hälsa relaterad till vårdens kostnad**
- 2. Med en gemensam vision och en sammanhållen nationell strategi skulle Sverige kunna bygga en världsledande industriell plattform inom resultat-baserad sjukvård under de kommande tio åren.**
 - Effektivare utveckling av sjukvården och bättre kvalitet för våra patienter
 - Ökat efterfrågan på klinisk och translationell forskning;
 - Ökat intresse från industrin för satsningar i Sverige
- 3. Vi har ca 5 års försprång inom resultatstyrd vård tack vare världsledande kvalitets- och patientregister, men flera andra länder investerar stora belopp för att komma ikapp**
- 4. För att fullt utnyttja vårt försprång och skapa mesta möjliga värde för landet föreslås en ny styrmodell, en årlig budget om ca 500 MSEK och handlingsprogram över 10 år med tydliga steg och ansvar**
- 5. En konservativ beräkning visar att föreslagen finansiering skulle ge 10 gångers avkastning, eller 50 miljarder över 10 år, genom långsammare ökning av sjukvårdskostnaderna. Vinsterna för samhället i stort – av bättre livskvalitet för patienterna men även genom till exempel minskade sjukskrivningar, bedöms vara minst tre till fem gånger så stora**

Q&A and discussion

Cohort reflections on report and proposal

- Marie Beckman Suurküla, Uppsala Akademiska Sjukhus
- Göran Sandberg, Umeå Universitet
- Tomas Puusepp, Elekta

Open floor

Concluding remarks