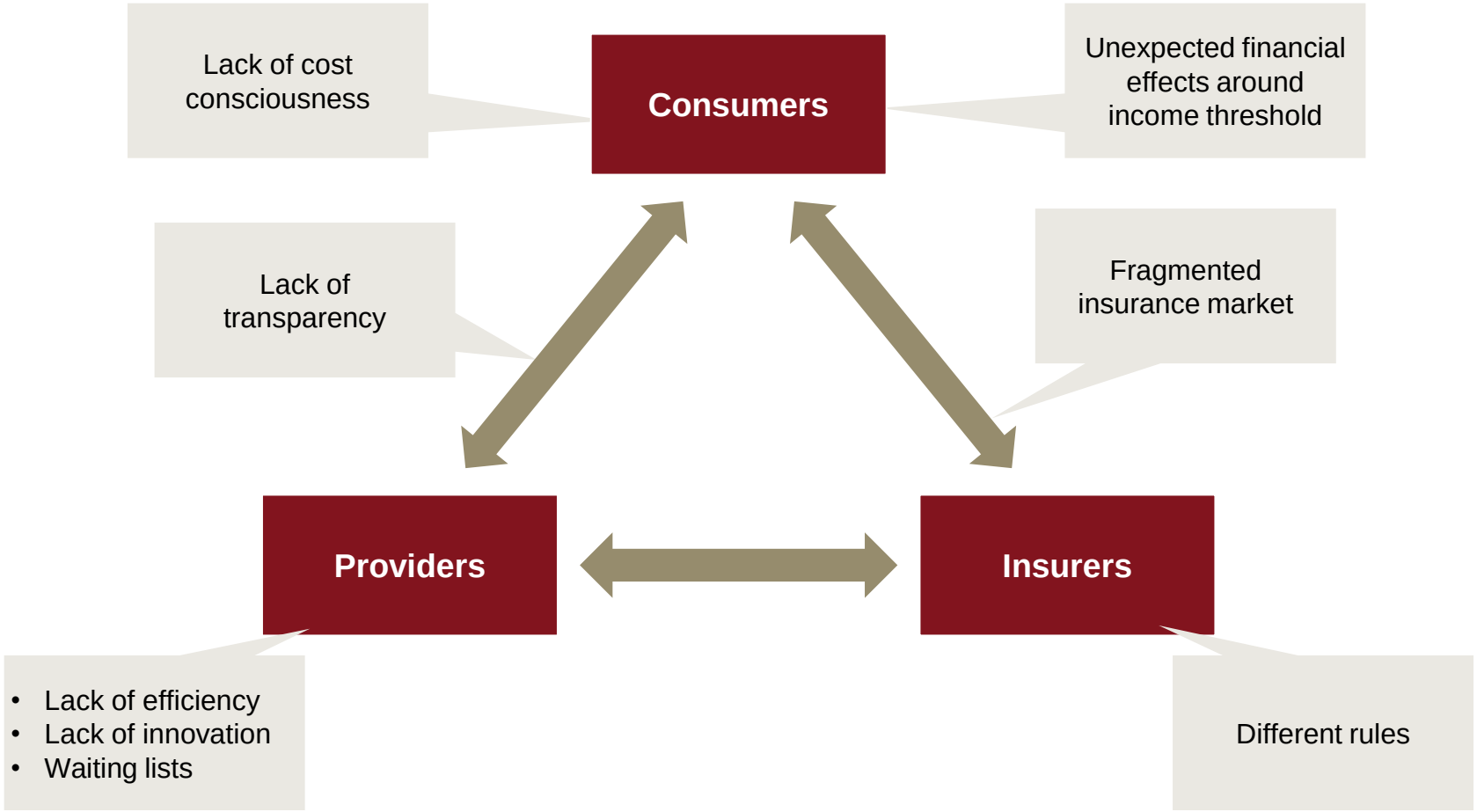
Saving lives and costs: a contribution to the sustainability of health care

Driving Change in Health Care – A quality agenda

Curative care: Our starting point (pre 2006)

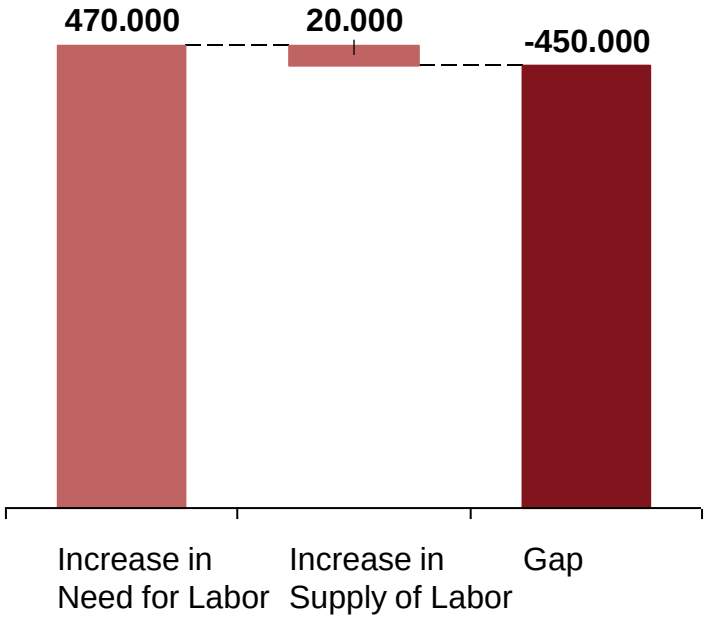
- Tradition of private initiative
  - Hospitals, nursery homes privately owned
  - Medical specialists and general practitioners mostly private entrepreneurs
- Mixed public/private insurance
  - 60% social insurance (below average income level)
  - 30% private insurance (no government interference)
  - 10% civil servants, elderly, etc.
- Growing government interference (from ± 1980 onwards)
  - Main objective: Cost containment
  - Detailed price regulation, budgeting
  - National, and regional planning, and licensing

System-related problems stressed the need for reform



The question of productivity became increasingly urgent given the tight labor market

Labor scarcity in *future* may put additional pressure on cost
(Labor deficit health care 2010–2025)



Salary explosion from the past are illustrative of this may increase health care costs

Sources: CPB Netherlands Bureau for Economic Policy Analysis; ZIP innovatie; Strategy& analysis

The 2005–2006 reform intended to boost productivity in an inefficient health care system

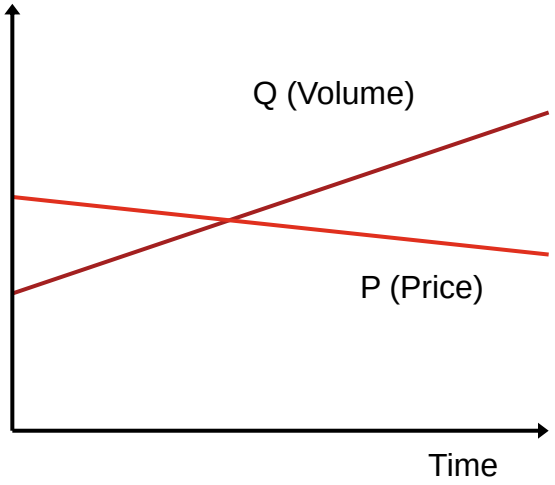
System pre-2006: macro effective but micro inefficient

- Effective macro instrument
  - Cost containment on macro (national) level
  - Policy implementation through intervening in the system
- But problematic on the micro level
  - Micro inefficiency
  - Lack of spirit of enterprise and innovative climate
  - Rationing → waiting lists

Growing pressure on the system to change

- Social problems: waiting lists
- More costs
- Political strains
- Law suits

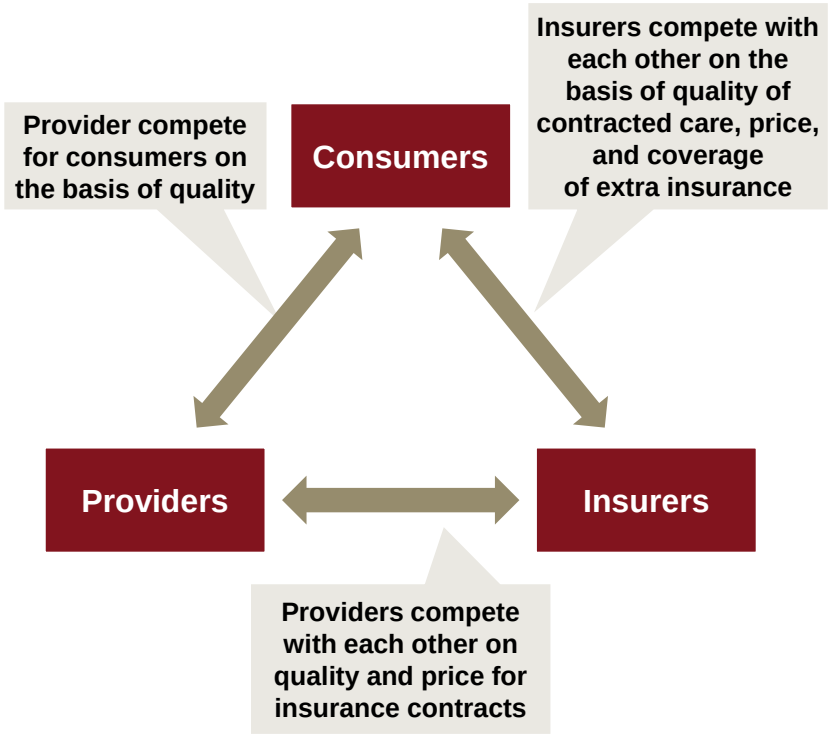
The 2005-06 reform: More efficiency to accommodate volume



- Volume growth is a fact of life: Ageing, innovation
- More efficiency is needed to deal with volume growth
- Competition will lead to more efficiency and lower prices

We envisioned competitive dynamics contributing to cost control and quality of care

The competition model



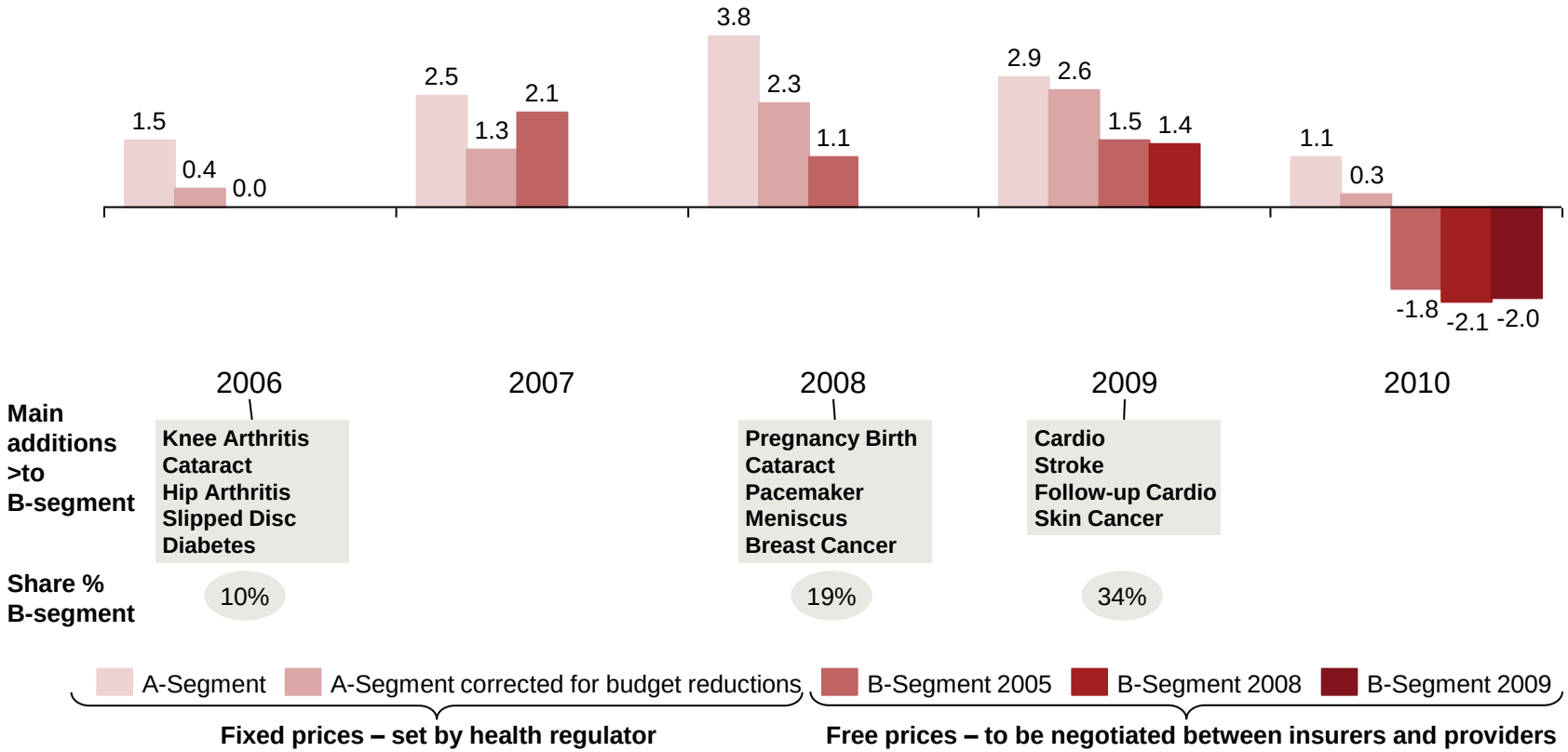
- **Room to move**
  - Freedom of nominal premium setting
  - Freedom to offer supplementary deductibles, group discounts, and extra insurance
  - Freedom of contracting (insurer ↔ health care provider)
  - Freedom of price negotiations
  - Freedom of capital investments (capital costs in DRG's)
- **Changed incentives and responsibilities**
  - From budgeting to output pricing/p4p
  - Insurers and providers have to compete for clients
  - Quality indicators for hospital and outpatient care
  - Increase amount of risk of insurers and providers
  - Duty of care for health insurers
- **Clear government safeguards**
  - Compulsory acceptance for basic insurance
  - Compulsory health insurance and income related subsidy
  - Legally defined coverage of basis insurance
  - No premium differentiation between insured
  - Health Care Authority (market development, price regulation)
  - Health Insurance Board (package of entitlements, risk equalization)

The health care reform has been successful

- Waiting lists have been virtually eliminated
- Substantial increase in transparency as a result of DRGs
  - Better view on real costs of treatment
  - Better registrations
  - Better view on practice variation
- Prices have decreased
- And … we are increasingly capable of controlling volume growth

Negotiations for the free DRG segment resulted in lower prices

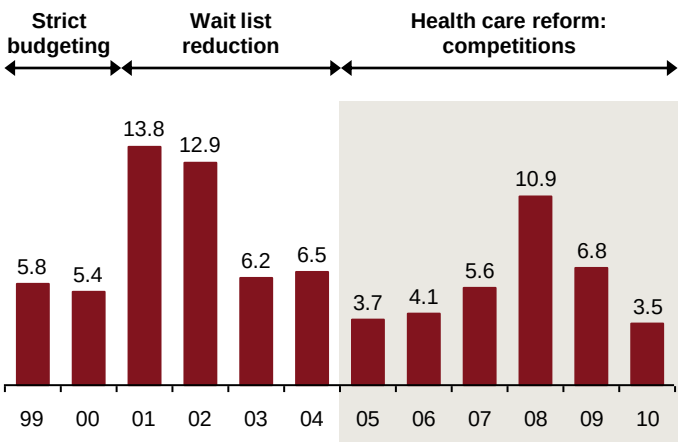
Price development hospital DBCs 2006-2010 (%, nominal)



Sources: *Marktscan Medisch Specialistische Zorg 2011; Nza. Onderhandelen over ziekenhuiszorg; Vektis 2009*

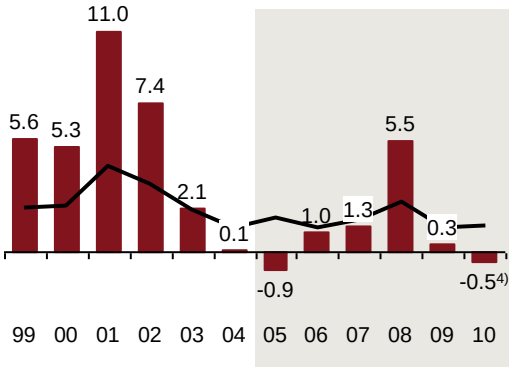
Health care reform succeeded in lowering prices, but it did not curb volume growth

Total growth in hospital expenditures (%)[1)]



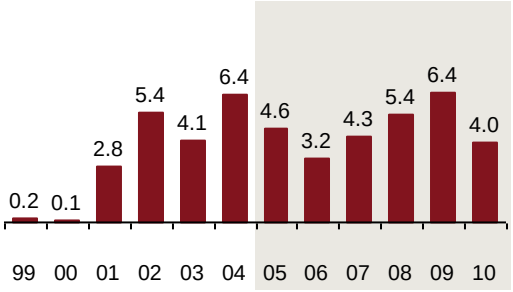
Generic Inflation[2)]

Price increase (%)



- Health care reform (competition) has indeed led to lower prices (driven by B-segment)

Volume growth (%)



- But since the health care reform volume growth accelerated
- **Today's challenge:** volume growth reduction without the waiting lists of the nineties

The 2005-2006 Reform Paradigm

- Volume growth is a fact of life: ageing, innovation
- More efficiency is needed to deal with volume growth
- Competition will lead to more efficiency and lower prices

1) Hospital expenditure include day and/or night cost and include specialist health care (4) Estimate based on "Marktscan Medisch specialistische zorg 2011"
2) Consumer Price Index CBS
Sources: CBS Statline (Zorgrekeningen; expenditures at current and constant cost); RIVM Performance Of Dutch Health Care 2010; Stijging Zorgkosten ontrafeld; VGE; Marktscan Medisch specialistische zorg 2011; BoStrategy& analysis

The US experience also suggests controlling prices may focus on the wrong part of the equation

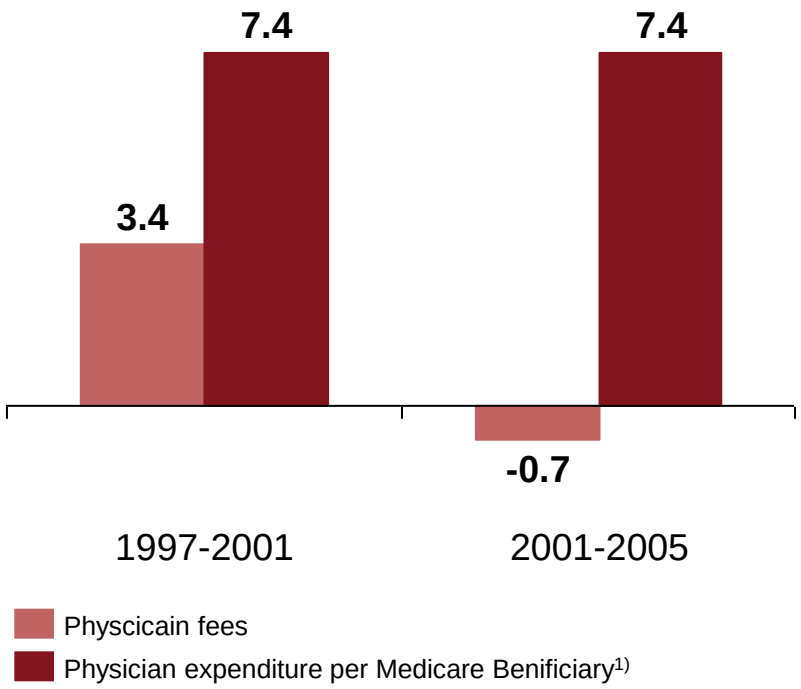
Example US Medicare

- Medicare has committed significant effort to figuring out the "ideal" price paid per unit of service to curb spending, when **use rate** is actually the more important variable

Total Cost =
Price × Use Rate

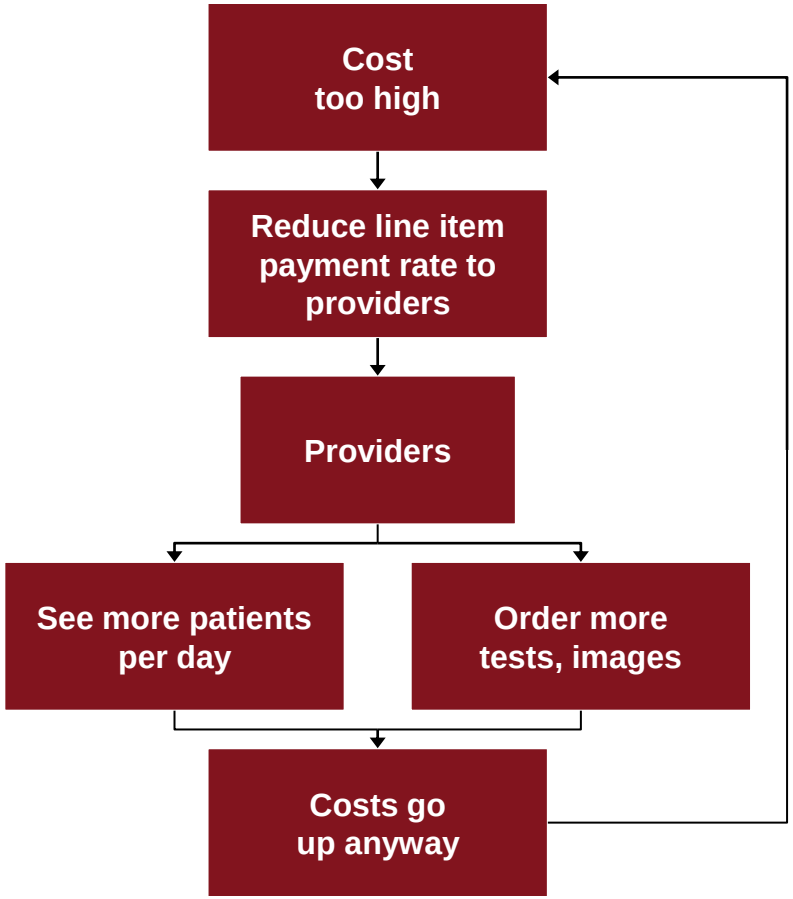
- The use rate is a direct function of the medical practice style in the delivery system

Growth (%) in physician fees compared with growth in total expenditures



Sources: Mayo Clinic - Robert Smoldt

The Medicare price control cycle: cutting prices drives volume up

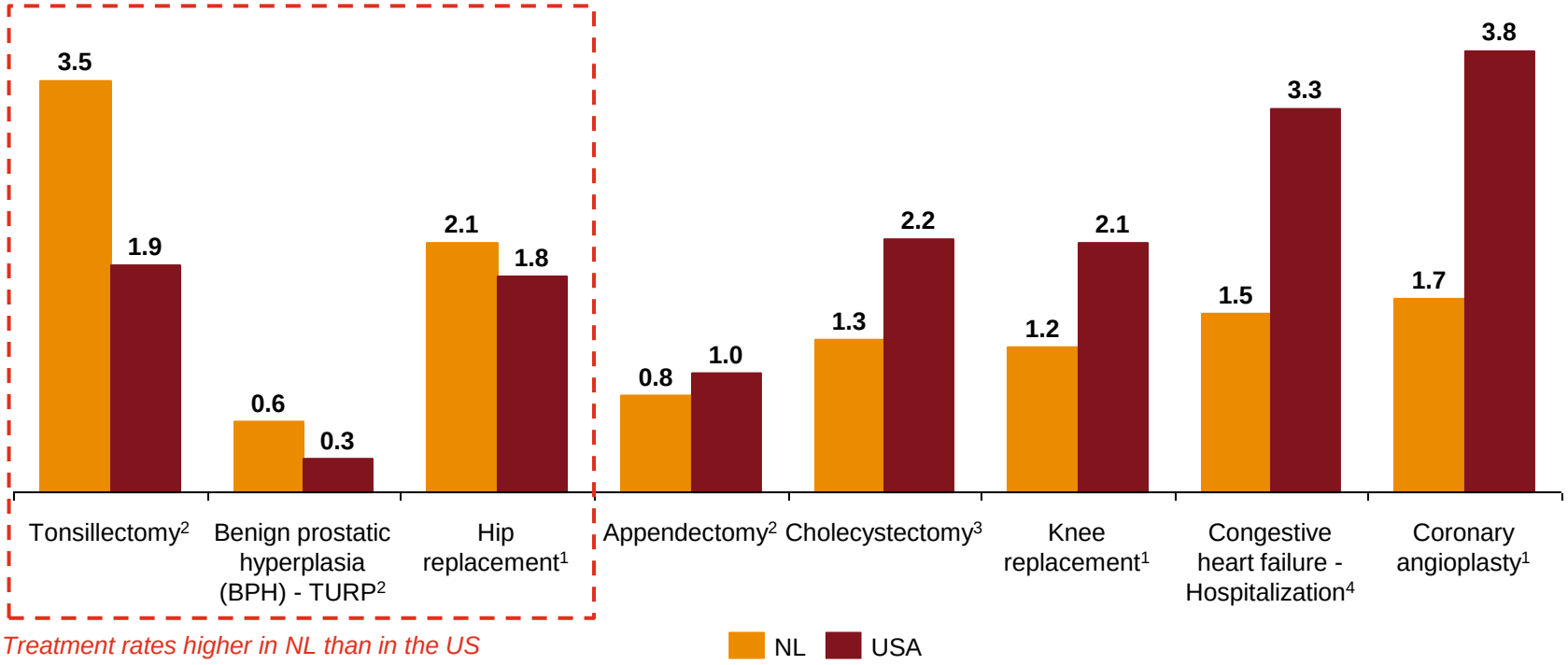


Sources: Mayo Clinic - Robert Smoldt

Usage is not a US problem: Higher rates in NL for hip replacements, TURPs and tonsillectomies

Incidence rates in the Netherlands and the USA

Number of treatments per 1000 population

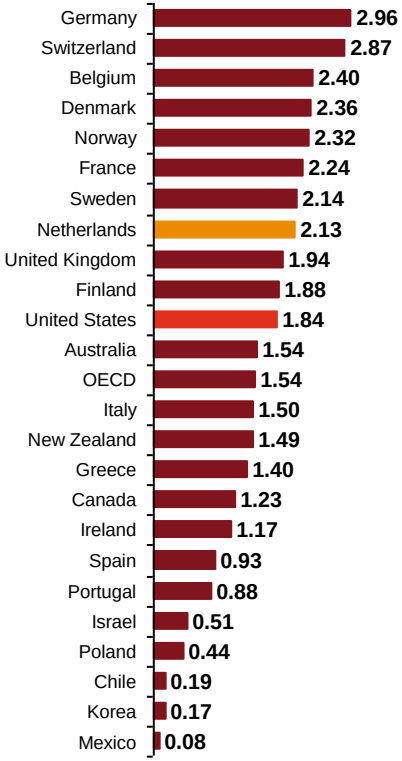


Treatment rates higher in NL than in the US

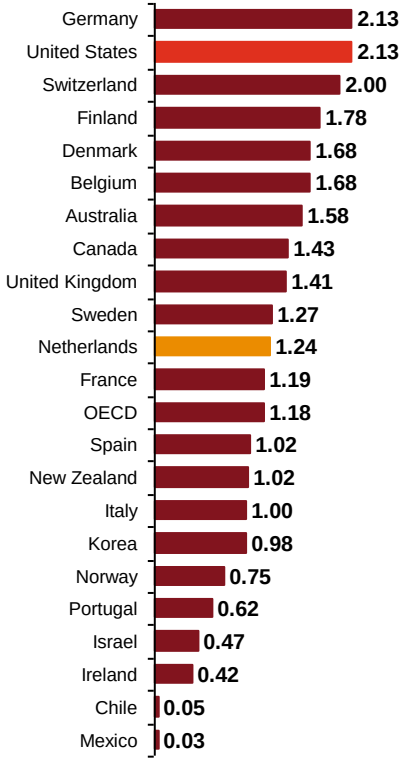
Sources: 1) OECD 2009, 2) NL: DIS 2006-2007; USA: HCUP 2006, 3) Laparoscopic versus small-incision cholecystectomy, F.Keus , 2008, 4) NL: DIS 2006-2007; USA: CDC 2010

The US is not an outlier in health usage – Budget based German health care ranks high

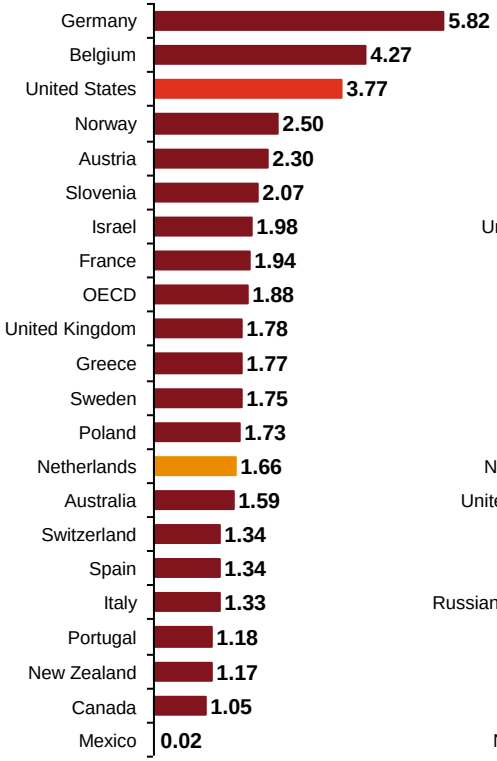
Hip replacement surgery, per 1000 population, 2009[1)]



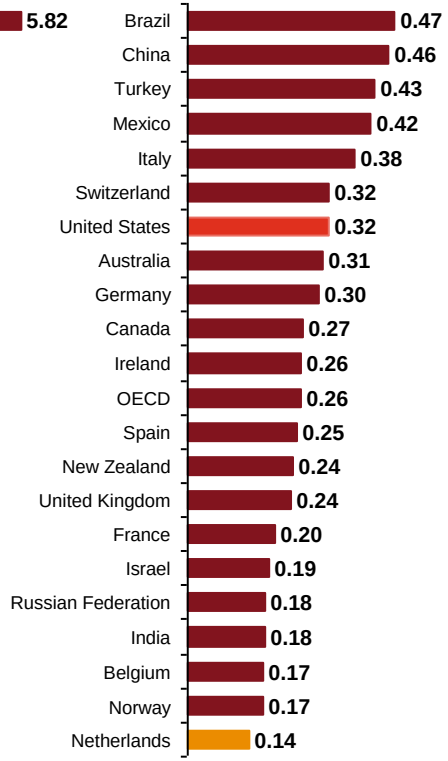
Knee replacement surgery, per 1000 population, 2008[1)]



Coronary angioplasty (PCI), per 1000 population, 2009[1)]

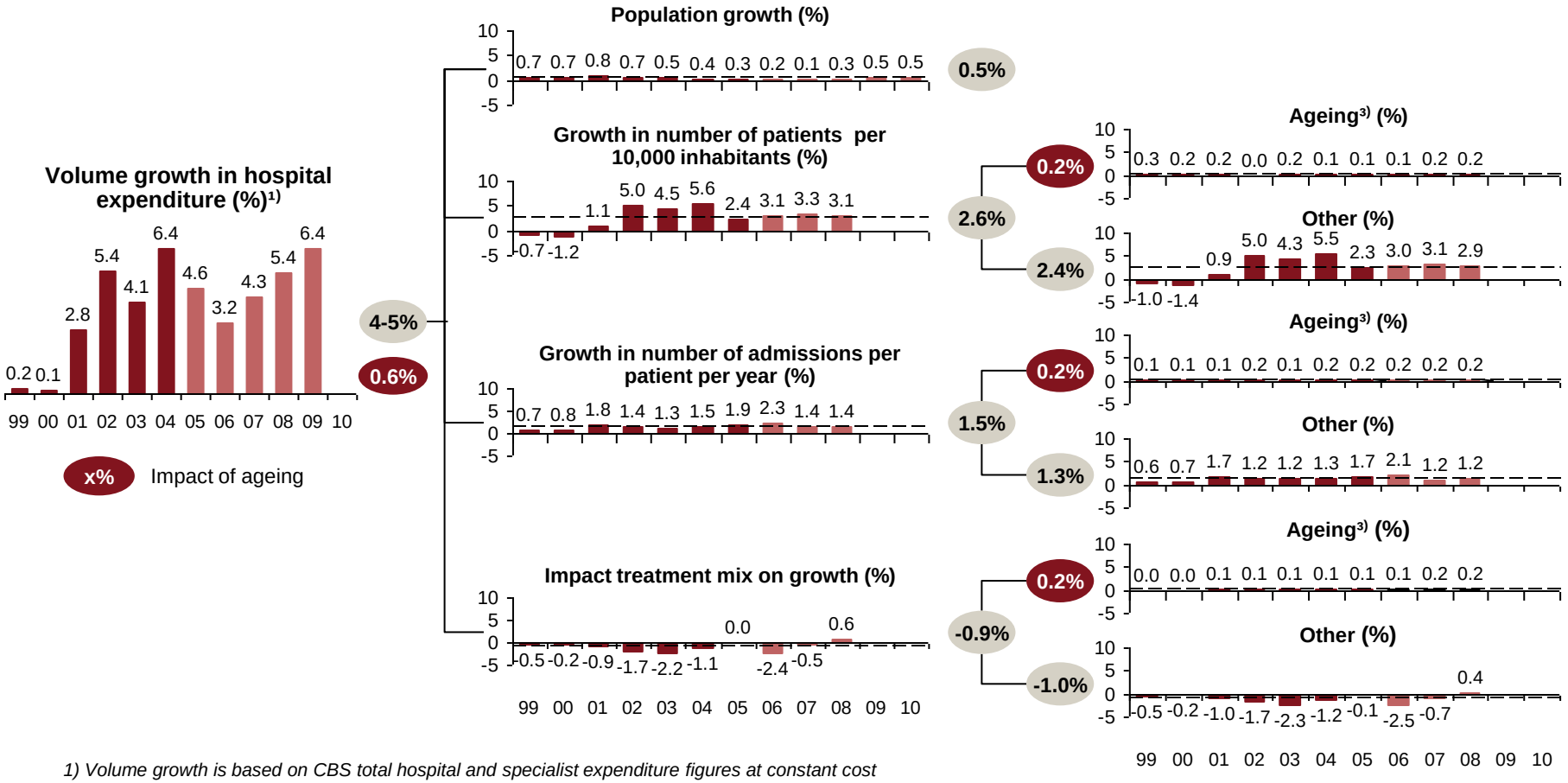


Caesarean sections per 100 live births, 2009[1)]



1) Or nearest year *Source: OECD, Strategy& analysis*

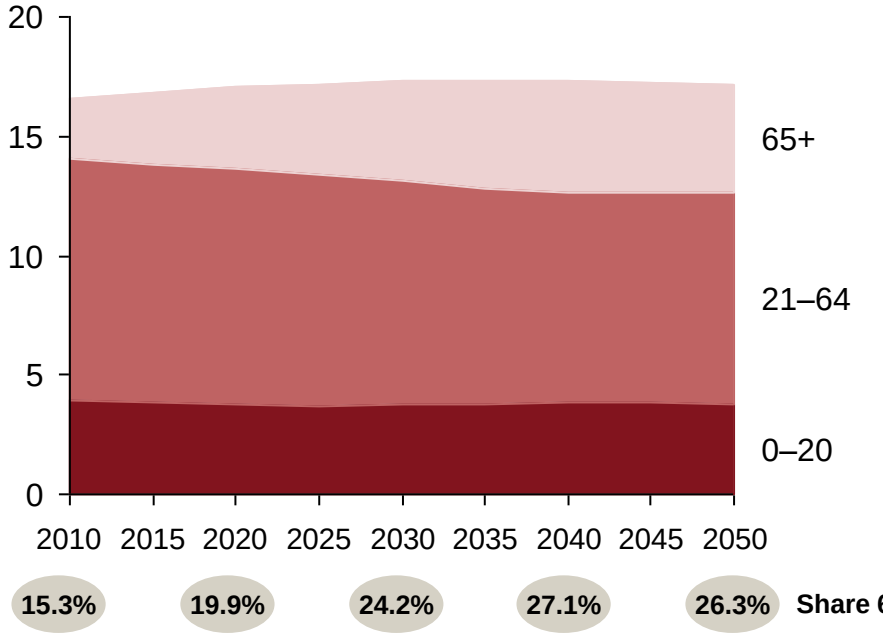
Ageing is often blamed for volume growth. Wrong!



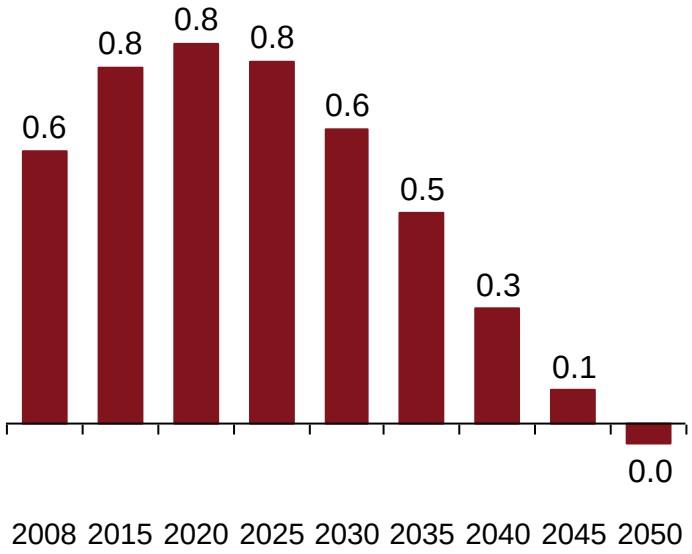
1) Volume growth is based on CBS total hospital and specialist expenditure figures at constant cost
2) Defined as total hospital and specialist expenditure figures at constant cost divided by the total number of admissions
3) Isolated effect of population ageing on driver
Sources: CBS Statline (Gezondheid en Welzijn); RIVM Performance of Dutch Health Care 2010; Kosten van Ziekten 2005; Strategy& analysis

Over the next 15 years, ageing will continue to drive volume, but yearly impact does not exceed 1%

Forecasted population ageing and growth
(In Mn people)



Estimated impact of ageing on yearly volume growth (%)



15.3% **19.9%** **24.2%** **27.1%** **26.3%** **Share 65+ in total population**

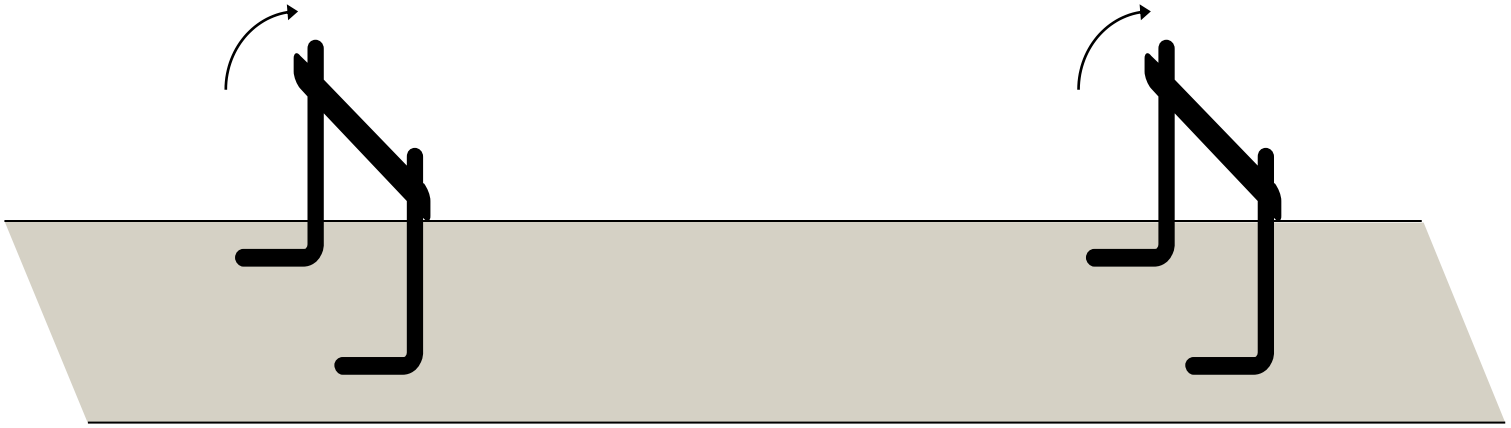
- Hence, a strong need to reduce any volume growth on top of ageing

Sources: United Nations; Department of Economic and Social Affairs; Strategy& analysis

The challenges to overcome for the payors

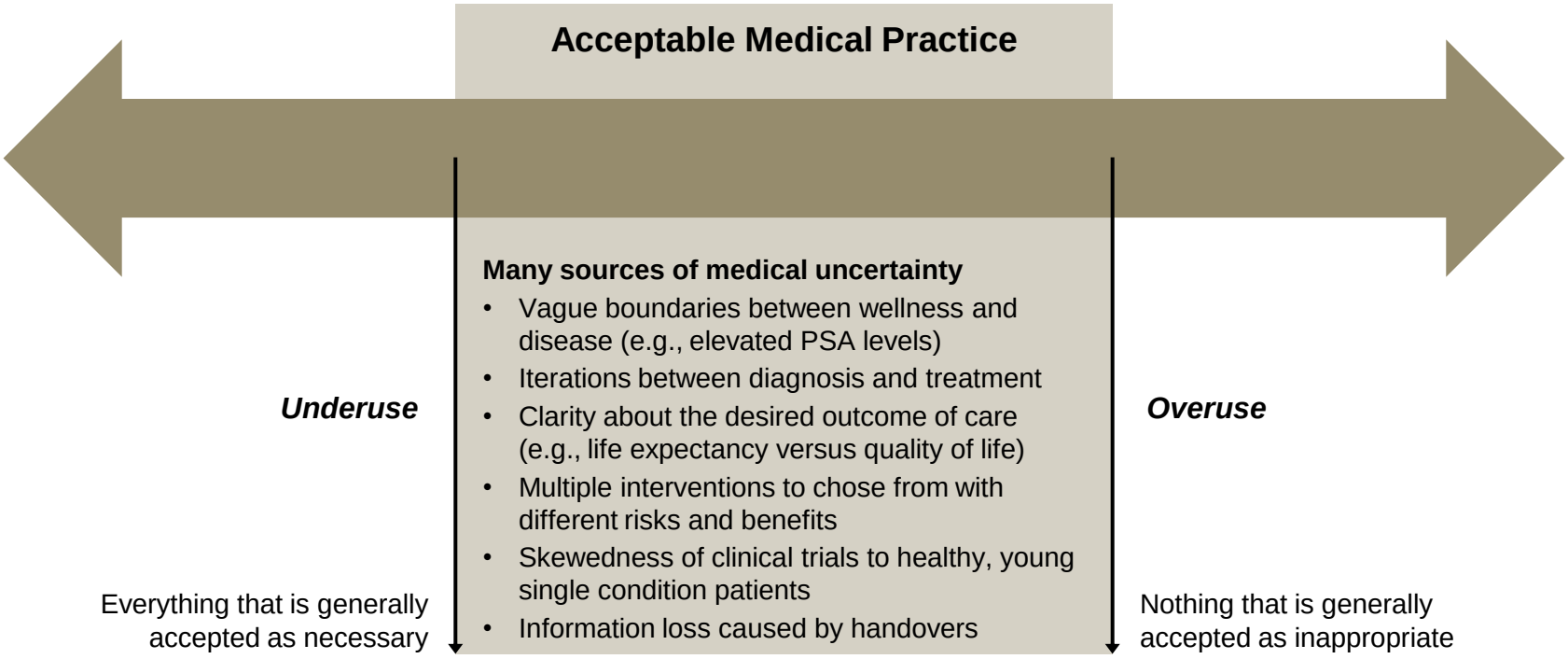
We pay volume instead of quality

We pay in a fragmented way



Source: Strategy&

Acceptable medical practice is an enormous grey area – offering lots of room to respond to price and volume incentives and to counter disruptive innovations



The human body is a nearly endless source of revenues" – A medical specialist

We may be inclined to overestimate the effectiveness of medical care

Attitude of an average patient

1. **Ever increasing (early) diagnostic capabilities**
   - It is better to know
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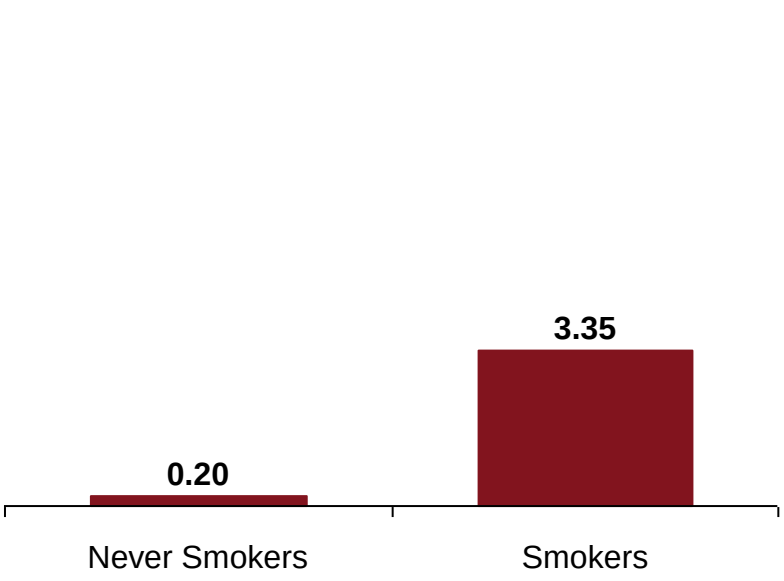
3. **Alignment doctor and patient preferences**
   - The doctor will know what is best for me

Over diagnosis is a real-risk; example lung cancer screening

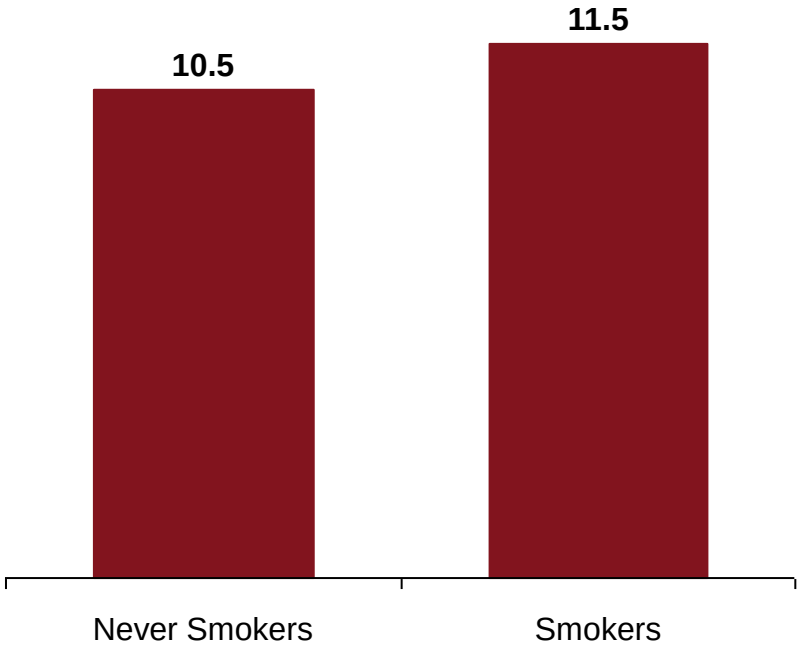
Smokers are at 17 times higher risk of death as a result of lung cancer

Number of deaths per 1,000 over five years



But the number of abnormalities identified spiral CT diagnosis of lung cancer is similar for smokers and non-smokers

Diagnosed cancer per 1,000 scans

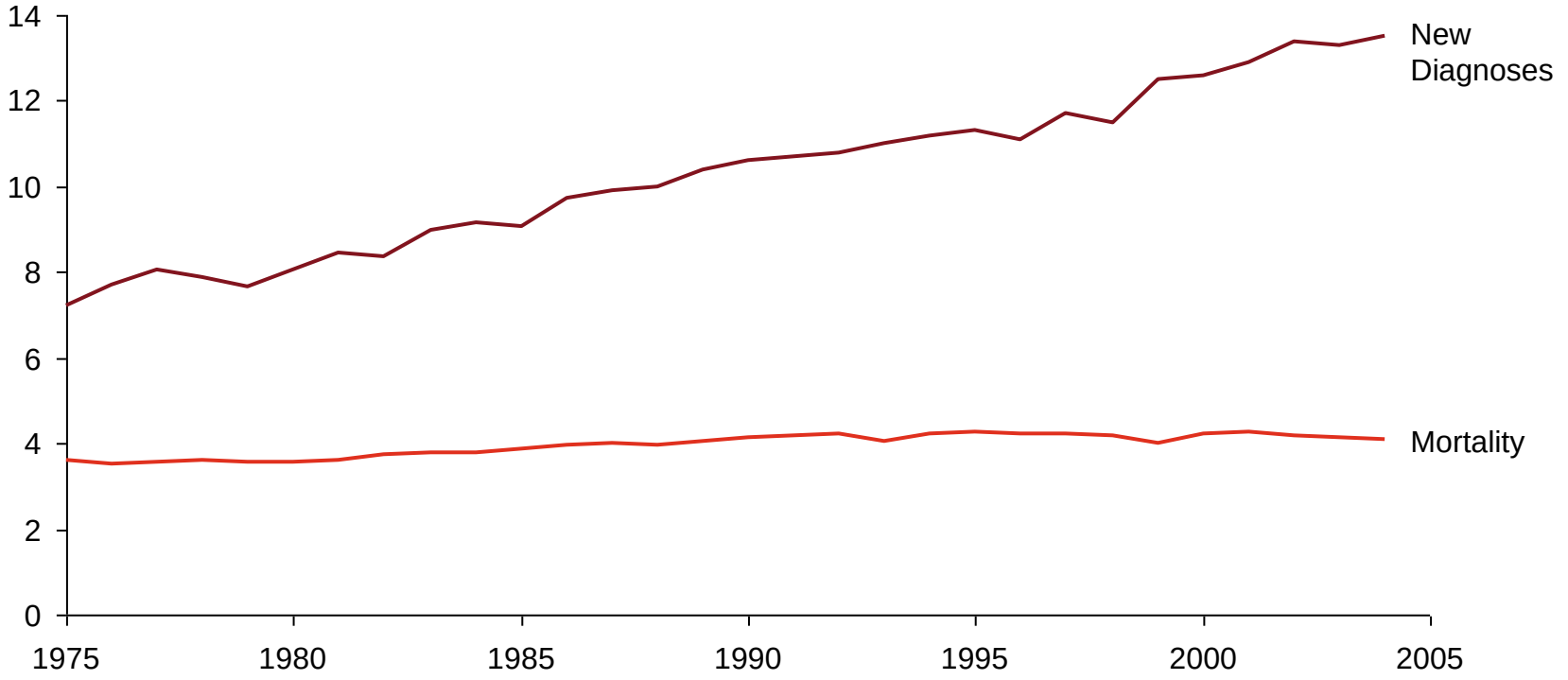


Sources: Over diagnosed (Welch); Strategy& analysis

Over diagnosis for kidney cancer?

New kidney cancer diagnoses and deaths

Per 100,000 people

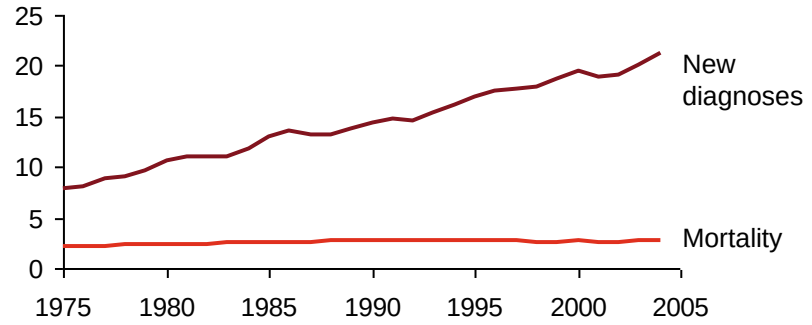


Sources: "Over diagnosed"; Welch; Strategy& analysis

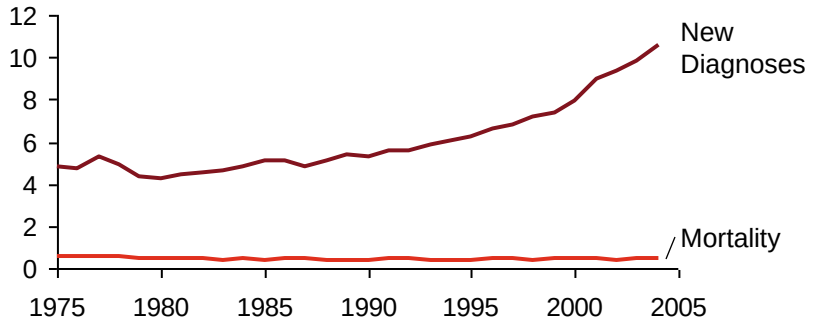
What about other cancers?

Cancer and diagnoses U.S.

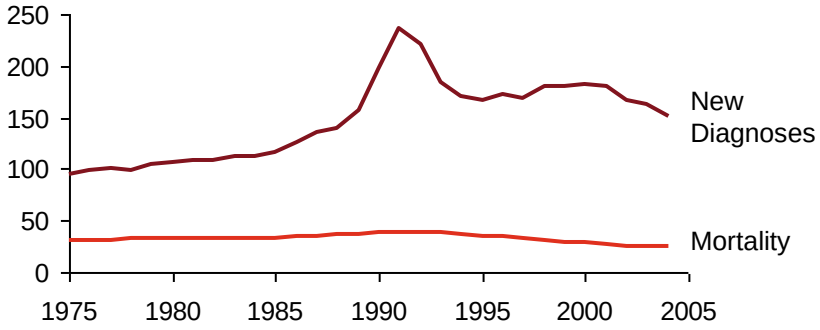
Skin Cancer Per 100,000



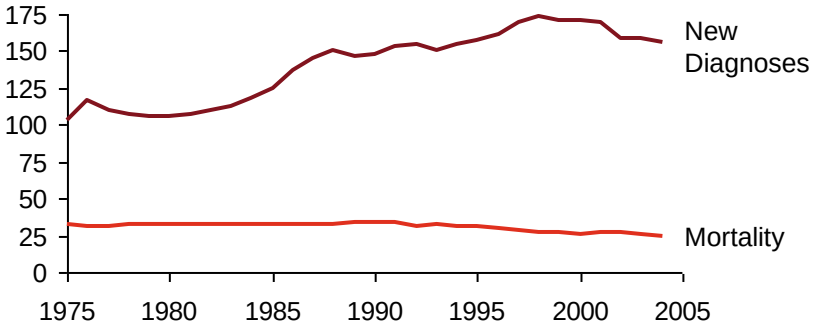
Pancreas cancer Per 100,000



Prostate Cancer Per 100,000



Breast Cancer Per 100,000



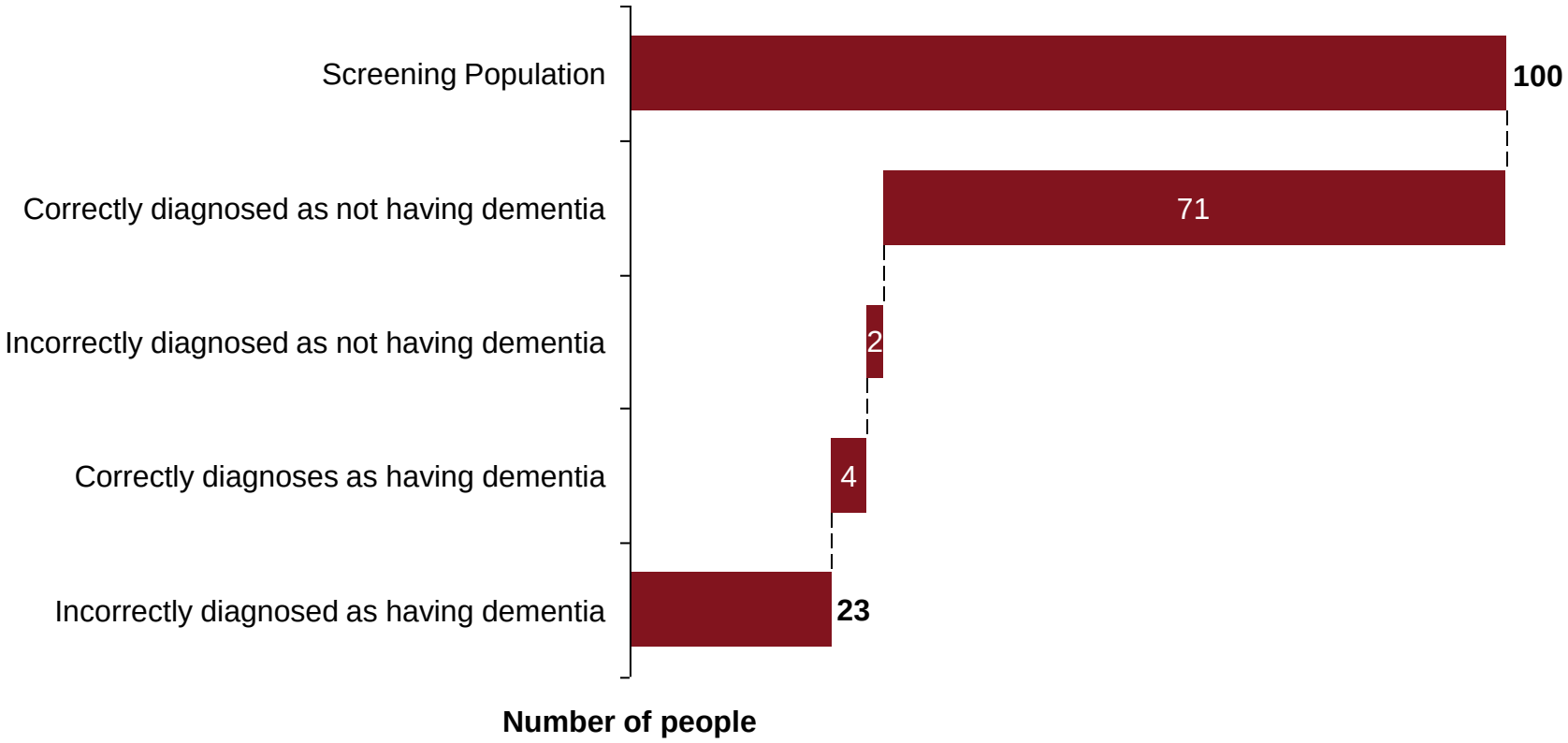
Results from a 25 year randomized clinical trial in Canada suggest that breast cancer screening does not save lives

	Breast exams	Breast exams and mammography
Population	**44.910 women**	**44.925 women**
Diagnoses with breast cancer	**3.133 women**	**3.250 women**
Died with breast cancer	**500 women**	**505 women**

'And the screening had harms: One in five cancers found with mammography and treated was not a threat to the woman's health and did not need treatment such as chemotherapy, surgery or radiation'

Screening for dementia: are patients aware that they are risking to be overdiagnosed

A BMJ study



We may be inclined to overestimate the effectiveness of medical care

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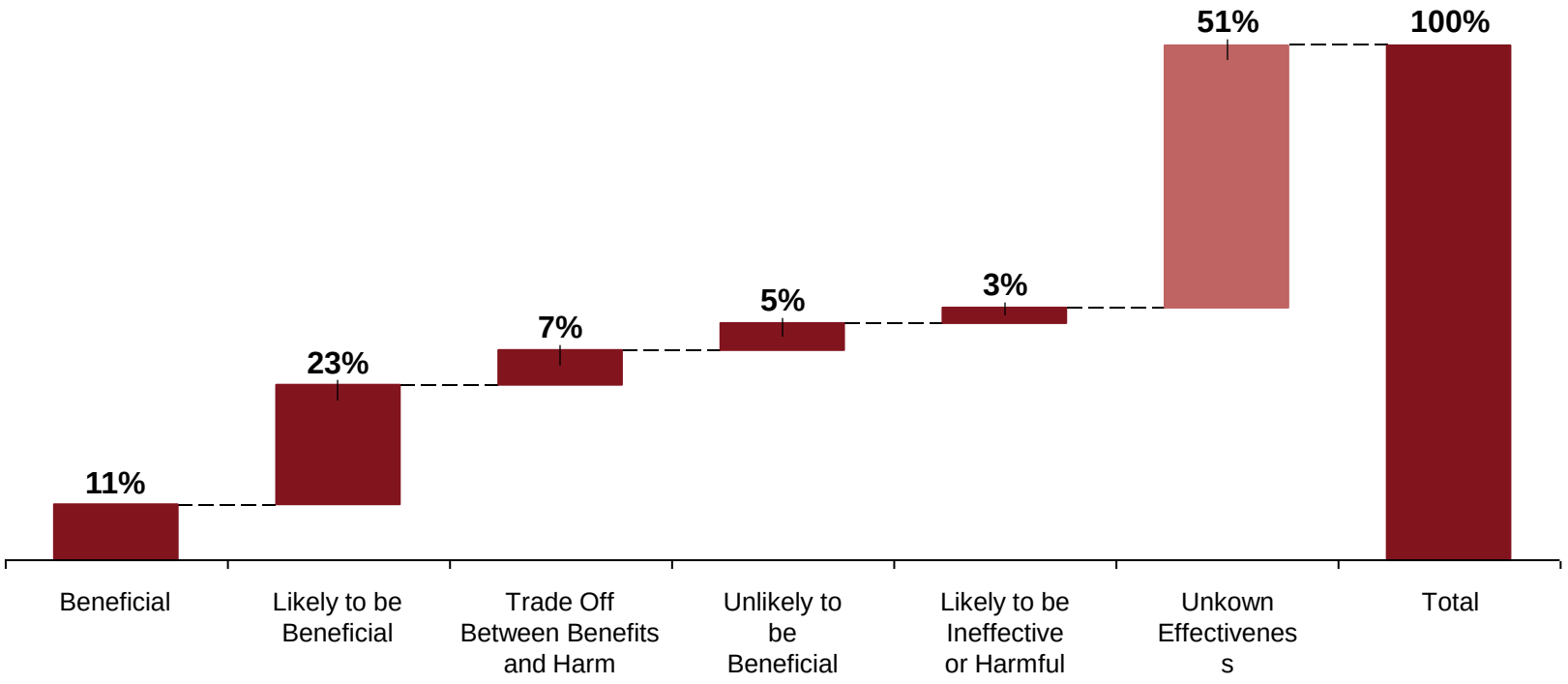
No evidence for more than half of our common medical treatments

51% of ~3,000 commonly used treatments in the U.K. Was of unknown effectiveness

Rating by a team of advisors, peer reviewers, experts, information specialists, and statisticians

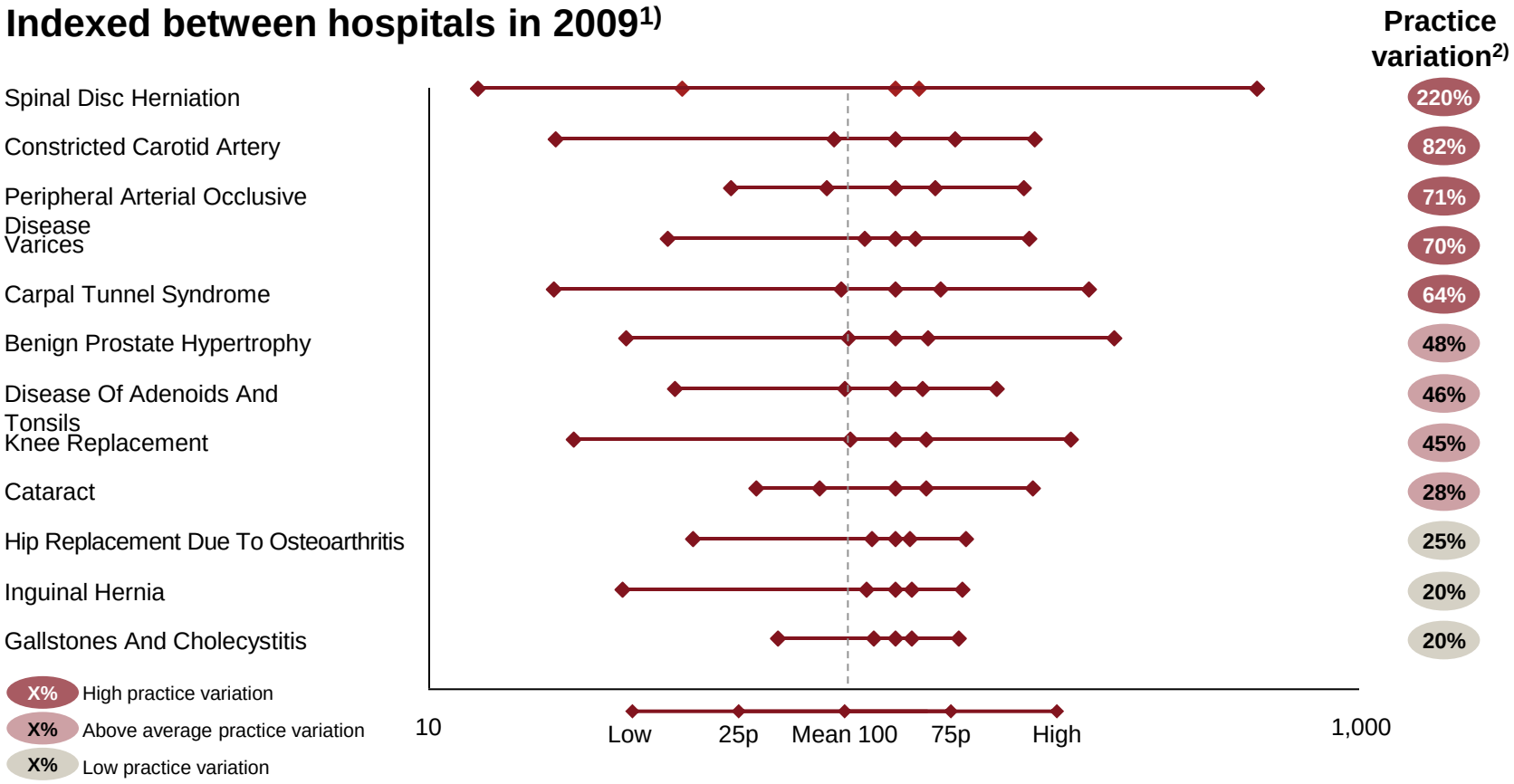


Note: Study based on ~ 3,000 treatments

Sources: Clinical Evidence website 2011; How much of orthodox medicine is evidence based? 2007; Strategy& analysis

Practice variation for common elective surgeries

Indexed between hospitals in 2009[1)]

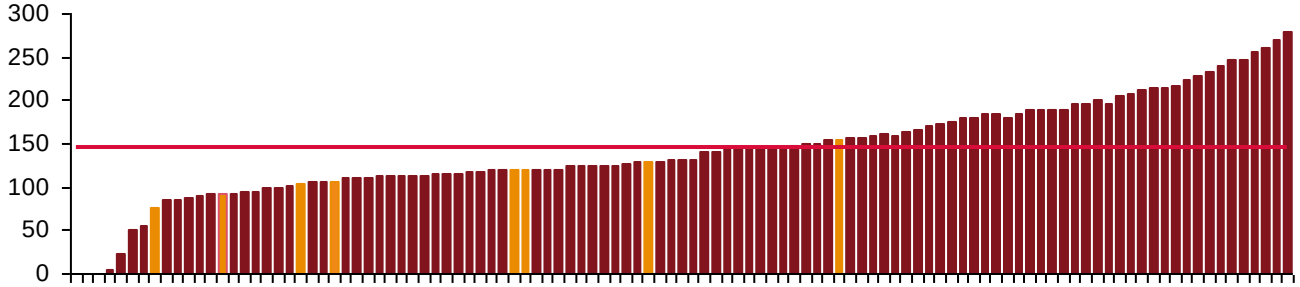


1) Corrected for Sex, Age, and SES 2) Difference between p25 and p75 > 50% are regarded high practice variation, differences > 25% and, < 50% are regarded mediocre variations Note: Hospitals with 10 or less operative DBC's are not taken into account
Sources: Rapport indicator indication setting Plexus; Strategy& analysis

Practice variation is common in health care – Also in The Netherlands

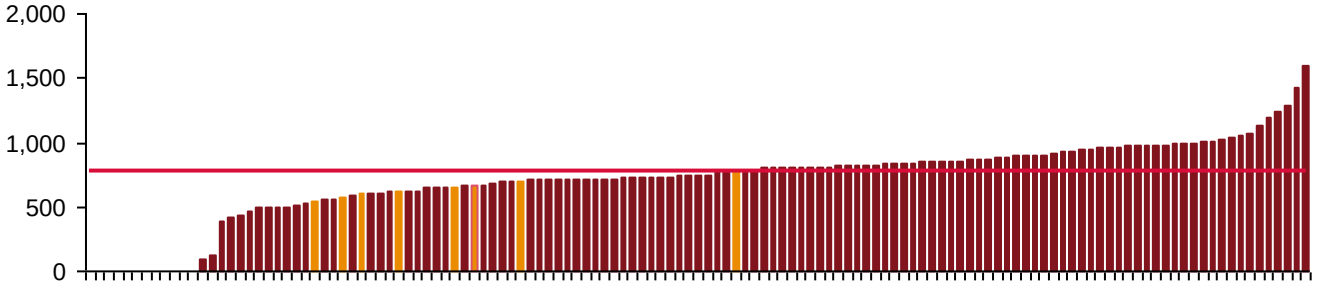
Risk adjusted conversion ratio benign prostatic hyperplasia per hospital

Number of surgeries per 1,000 BPH-patients per year



Risk adjusted conversion ratio cataract surgeries

Number surgeries per 1,000 cataract patients



Academic institutions — Average

Hospitals (in The Netherlands)

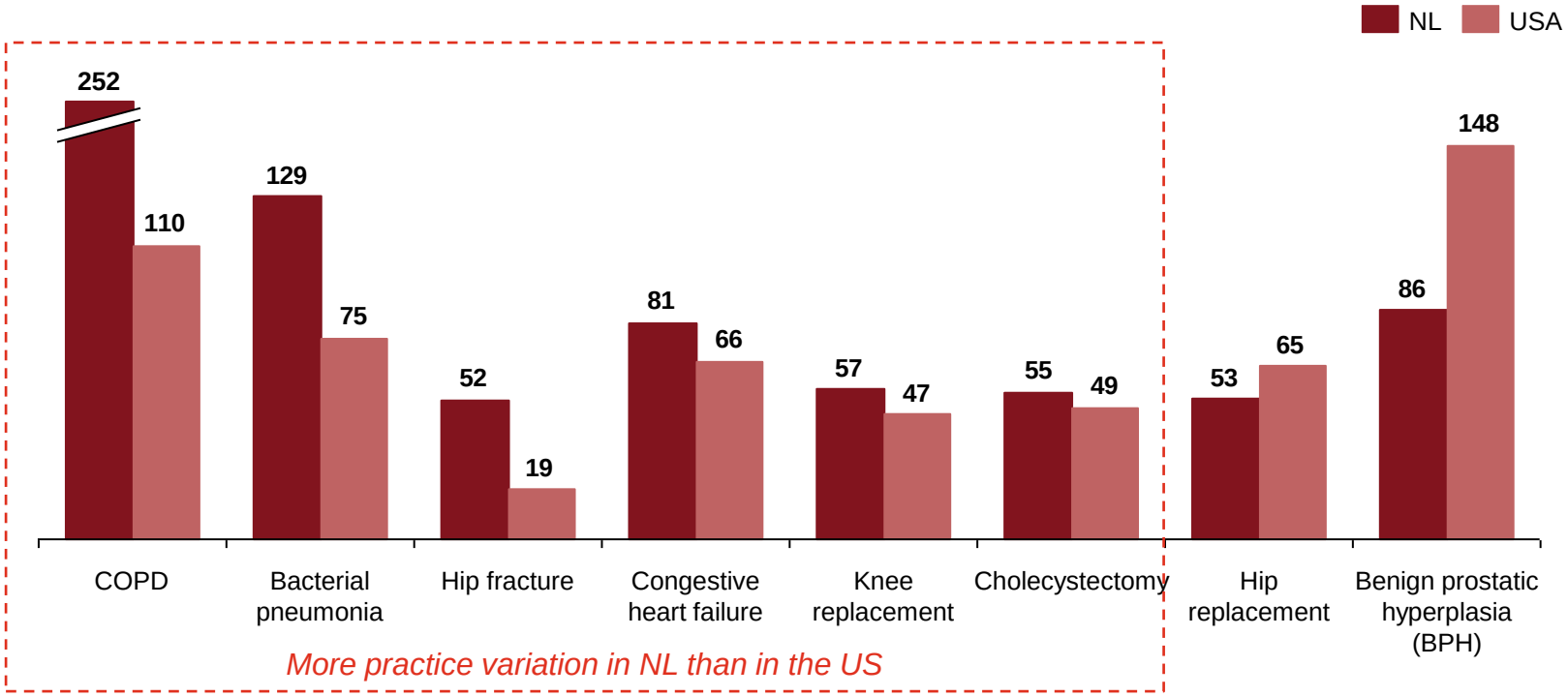
The differences between high and low conversion ratio's are too large to be interpreted as care of the same quality

Source: Plexus

Practice variation is as much a Dutch problem as a US problem

Practice variation

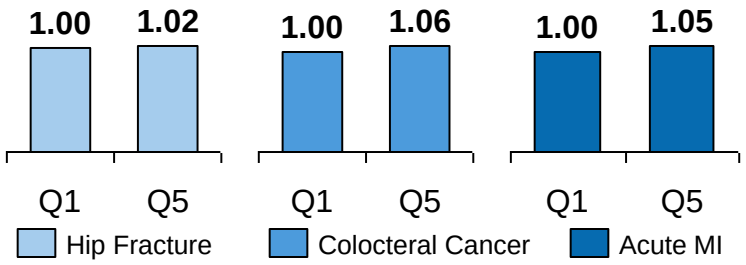
Systemic Component of Variation (SCV) – 2006-2007



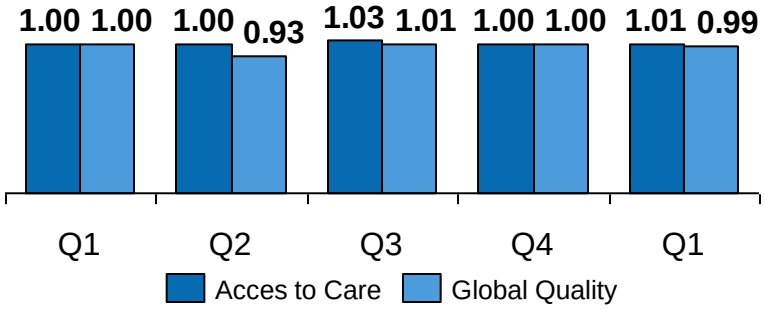
Note: NL variation determined over about 450 municipalities. Population corrected for age and income differences; USA variation determined over average treatment rates per Hospital Referral Region (200). Population corrected for age, sex and race differences
Source: Plexus 'Voorstudie naar praktijkvariatie in Nederland', Dartmouth Atlas of Healthcare, Strategy& analysis

Supply induced demand, and investing in health care does not necessarily buy quality

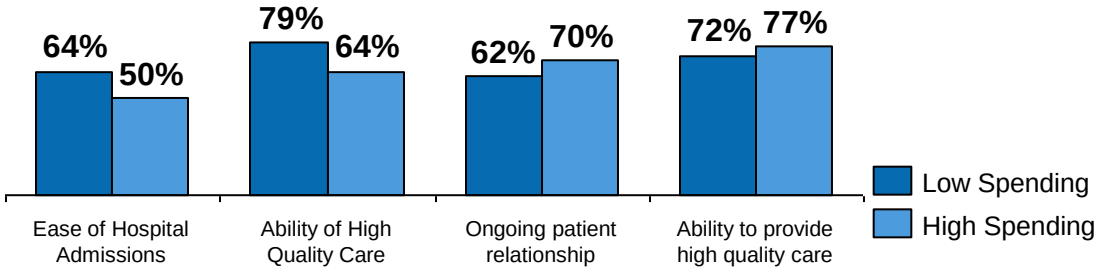
Mortality rates are higher for higher healthcare spending regions
Adjusted relative risk for death during follow up for every 10% spending increase



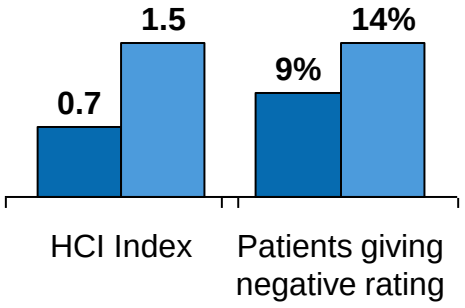
Patient-reported quality is lower for higher healthcare spending regions
Change in satisfaction relative to quintile 1 in percentage points



Physicians perception of quality is lower for higher healthcare spending regions % of 10.000 interviewed physicians



HCI index is higher for higher spending regions. However more patient rate their health care negatively



Note: HCI index measured by inpatient care intensity. Calculated as the simple average of the ratios to the national average of time spent in the hospital and the number of inpatient physician visits
Source: The Dartmouth Institute for Health Policy and Clinical Practice - Health Care Spending, Quality and Outcomes; Booz & Company analysis

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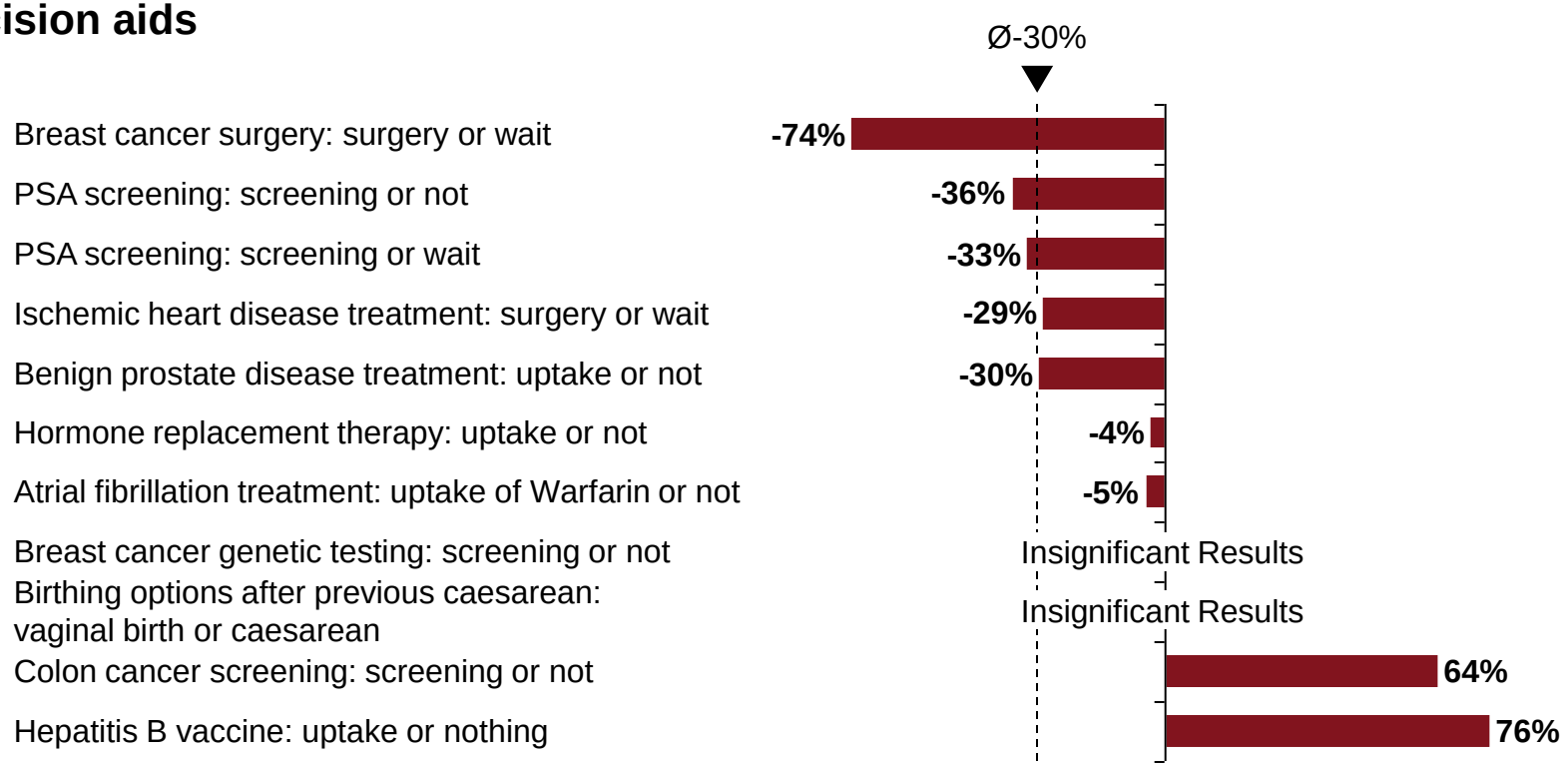
Patients usually chose differently (and more conservatively) than their doctors

Change in number of treatments after shared decision making with simple decision aids



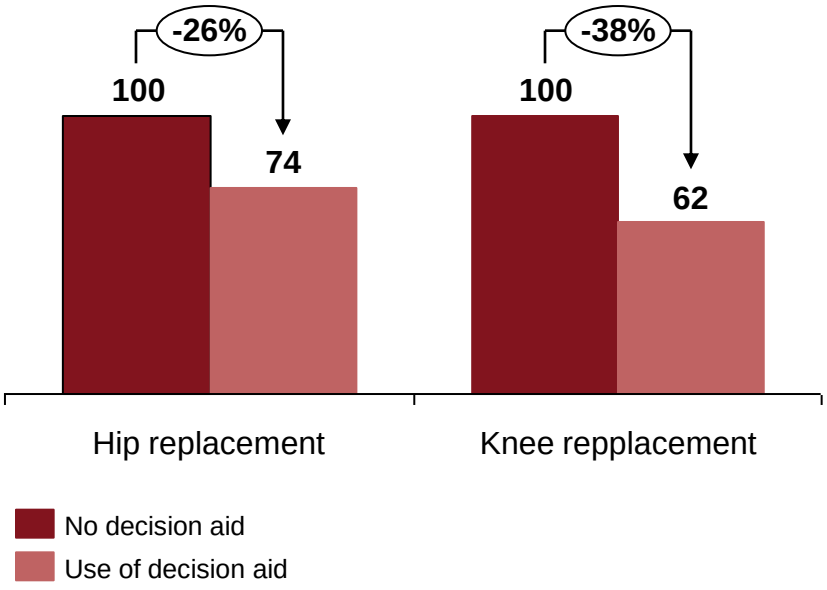
Source: The Cochrane Collaboration (Wolf; 1996; Volk; 1999; Man-Son-Hing; 1999; Morgan; 2000; Dodin; 2001; Auvinen; 2002; Frosch; 2003; Whelan; 2004); Strategy& analysis

Saving lives and costs

Enhancing the quality and appropriateness of care has the potential to lower costs and increase the sustainability of health care

Decision aid also have substantial impact in practice

Informed patients choose more conservatively (~9500 patients in Washington State)



12-22% lower costs

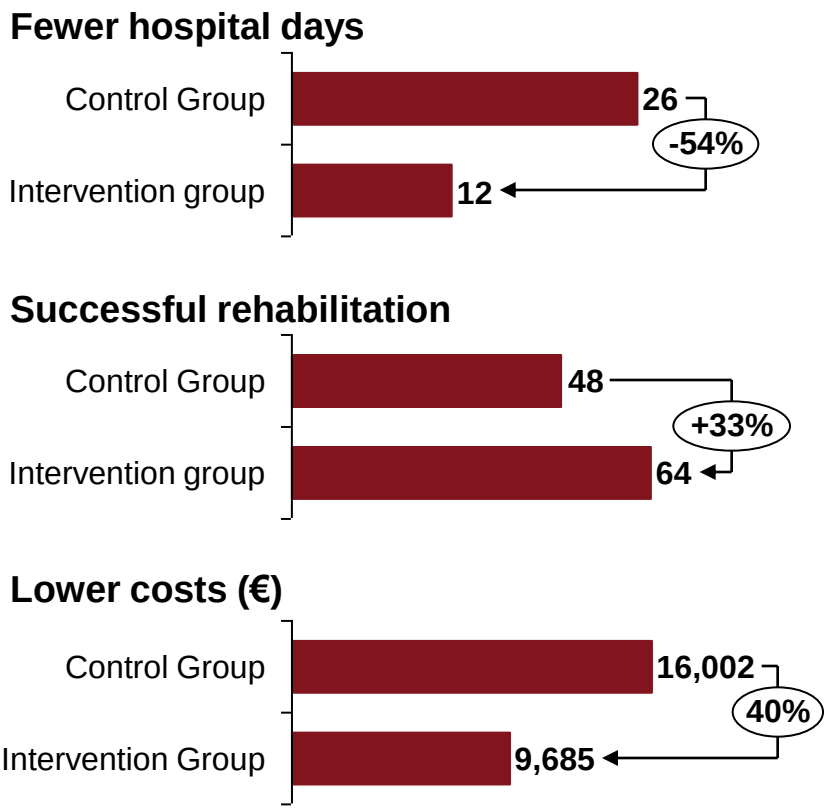
Nijmegen: IVF Patiënten kiezen vaker voor de doelmatige optie

- Keuze tussen dubbele embryo transfer (hogere zwangerschap kans, ook hogere kans op medische complicaties van meerling) en single embryo transfer
- Cyclus 1: 43% van de patiënten voor een single transfer versus 32% in de controlegroep
- Cyclus 2: 26% van de patiënten voor een single transfer versus 16% in de controlegroep

Person centered care increase quality and lowers costs: Example hip fractures Sweden

Patient centred care for Hip fractures

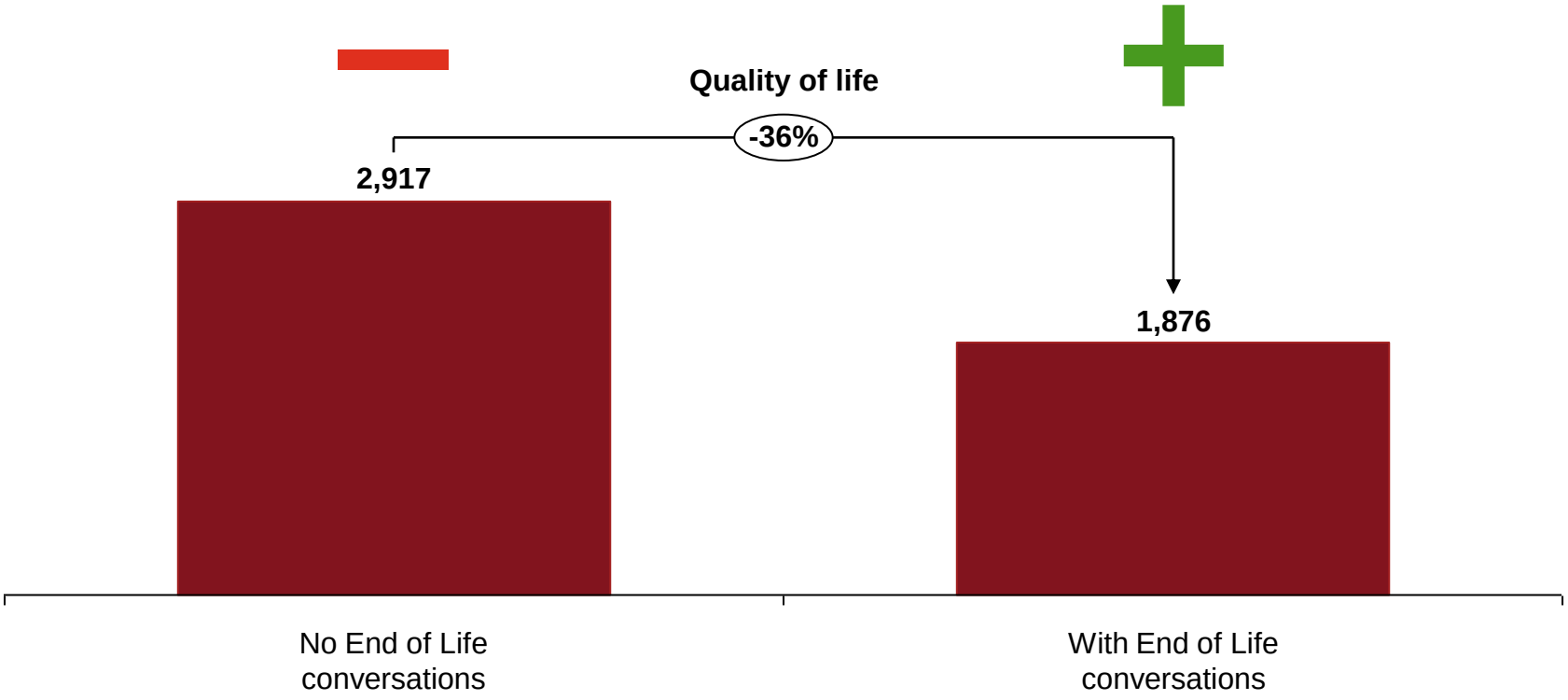
- **Care pathway tailored to the individual's needs**
- **Starting point: Tailored to the patient's needs?**
  - What was the patient capable of before the fracture?
  - What is the social network of the patient?
  - What are her objective in life?
  - Which steps to independence are mostly valued (e.g., taking care of personal hygiene)
- **Differentiated care for different personality types, e.g.,**
  - Autonomous patients
  - Modest patients
  - Detached people



Source: Patients with acute hip fractures, motivation, effectiveness, and costs in two different care systems

Patient centeredness is especially important in end of life settings

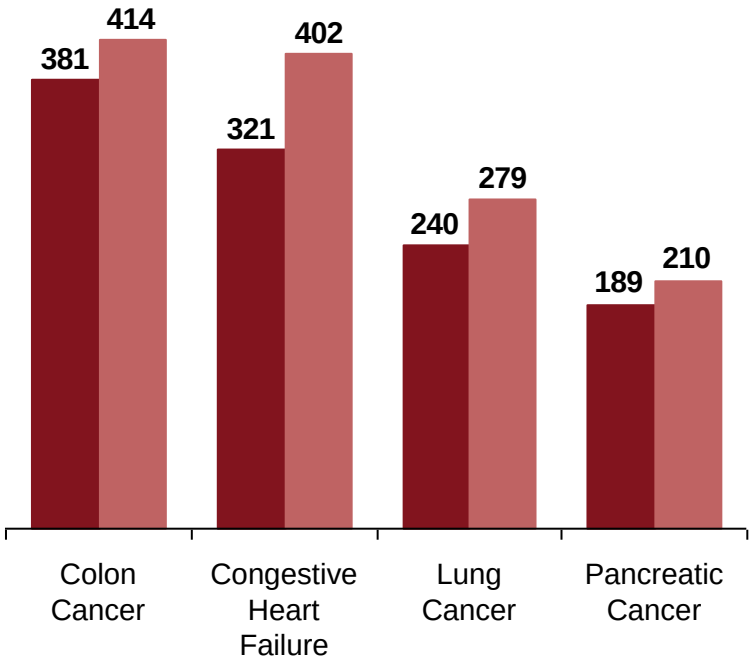
Quality of live and health care costs last week of life (2008, US$)



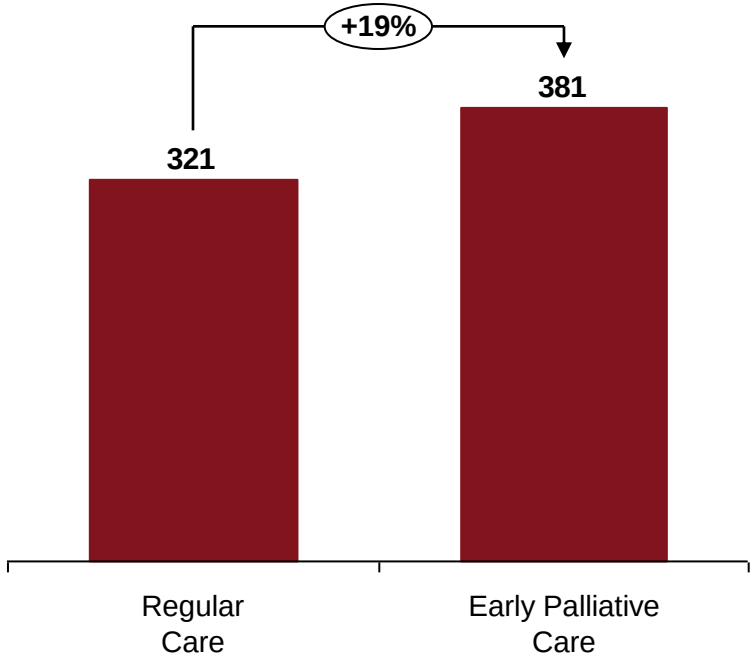
Source: Health Care Costs in the Last Week of Life, 2009; Strategy& analysis

End of life care can actually increase life

Hospice care increases survival time [1] …
Average number of survival days after diagnosis



… as does early palliative care [2]
Average number of survival days after diagnosis



Non-hospice care Hospice care

1) n = 4493
2) n = 151
Source: Comparing hospice and non-hospice patient survival among patients who die within a three-year window; Journal of pain and symptom management; March 2007; Early palliative care for patients with metastatic non-small-cell lung cancer; The new England journal of medicine; 2010; Strategy& analysis

The 2005-2006 reform paradigm: Lower prices via competition to pay for inevitable volume growth

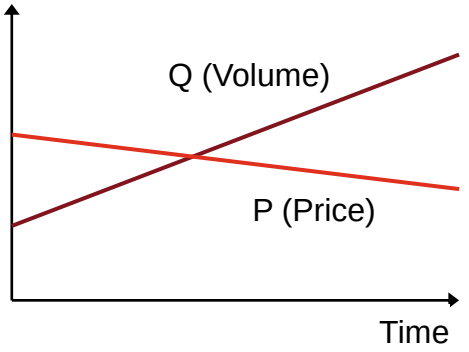
System pre-2006: Macro effective but micro inefficient

- Effective macro instrument
  - Cost containment on macro (national) level
  - Policy implementation through intervening in the system
- But problematic on the micro level
  - Micro inefficiency
  - Lack of spirit of enterprise & innovative climate
  - Rationing → waiting lists

Growing pressure on the system to change

- Cost growth
- Demographics (ageing and labour market)
- Technology developments
- Law suits

The 2005-06 reform: More efficiency to accommodate volume

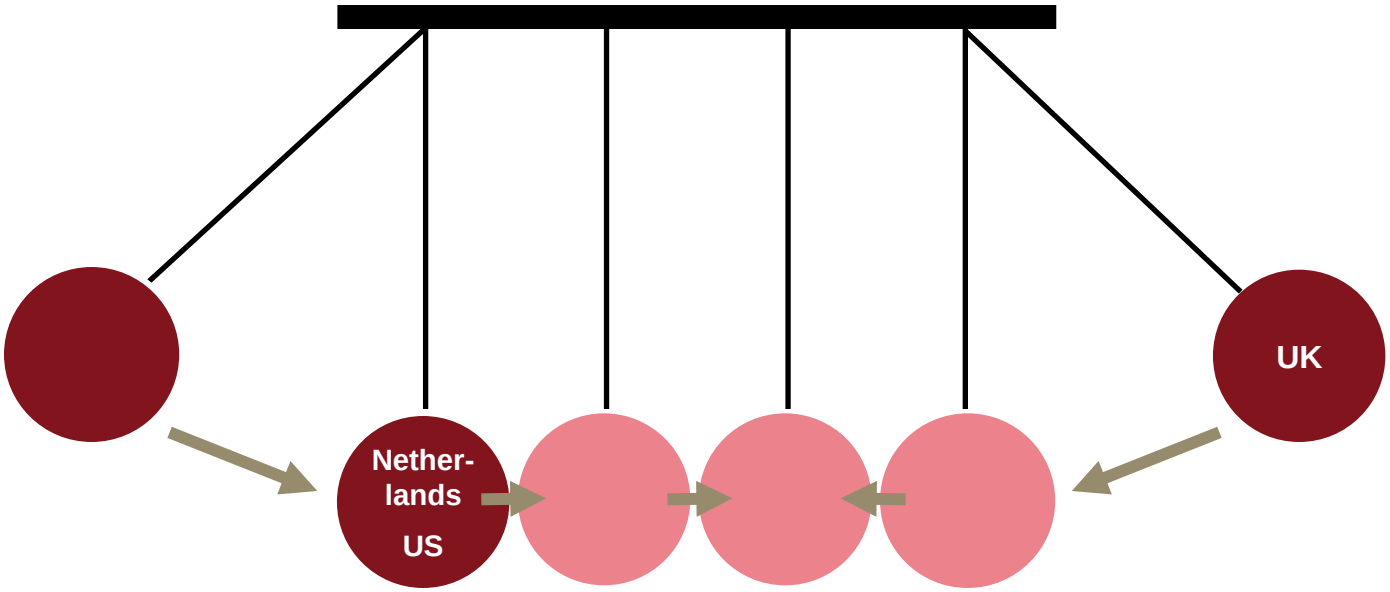


- Volume growth is a fact of life: ageing, innovation
- More efficiency is needed to deal with volume growth
- Competition will lead to more efficiency and lower prices

We see health care systems move continuously in between forms of budgeting and fee for service

Pay for services

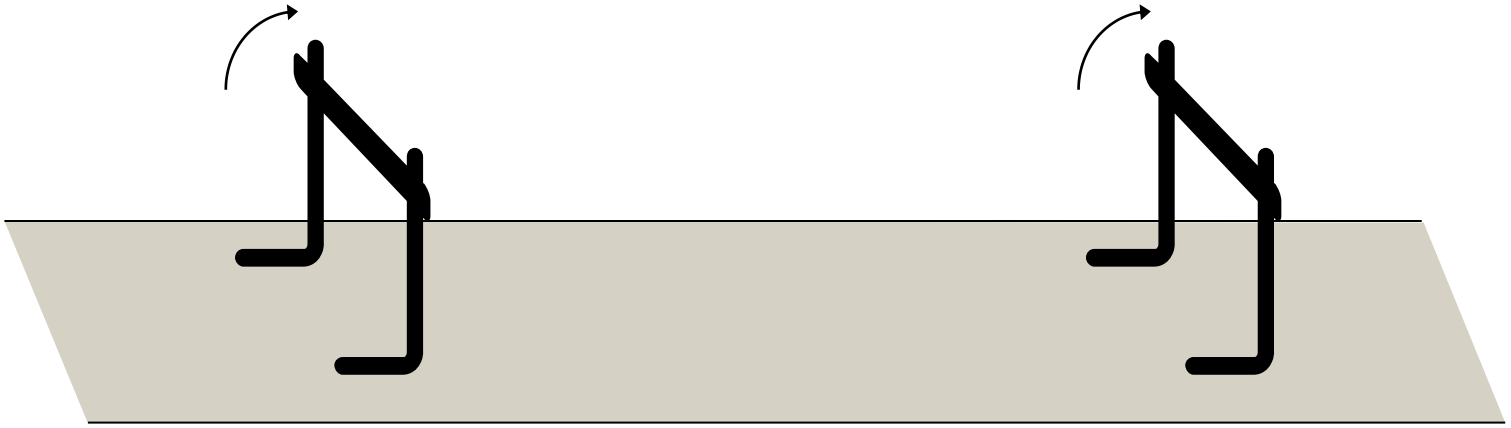
Budgeting



The challenges to overcome for the payors

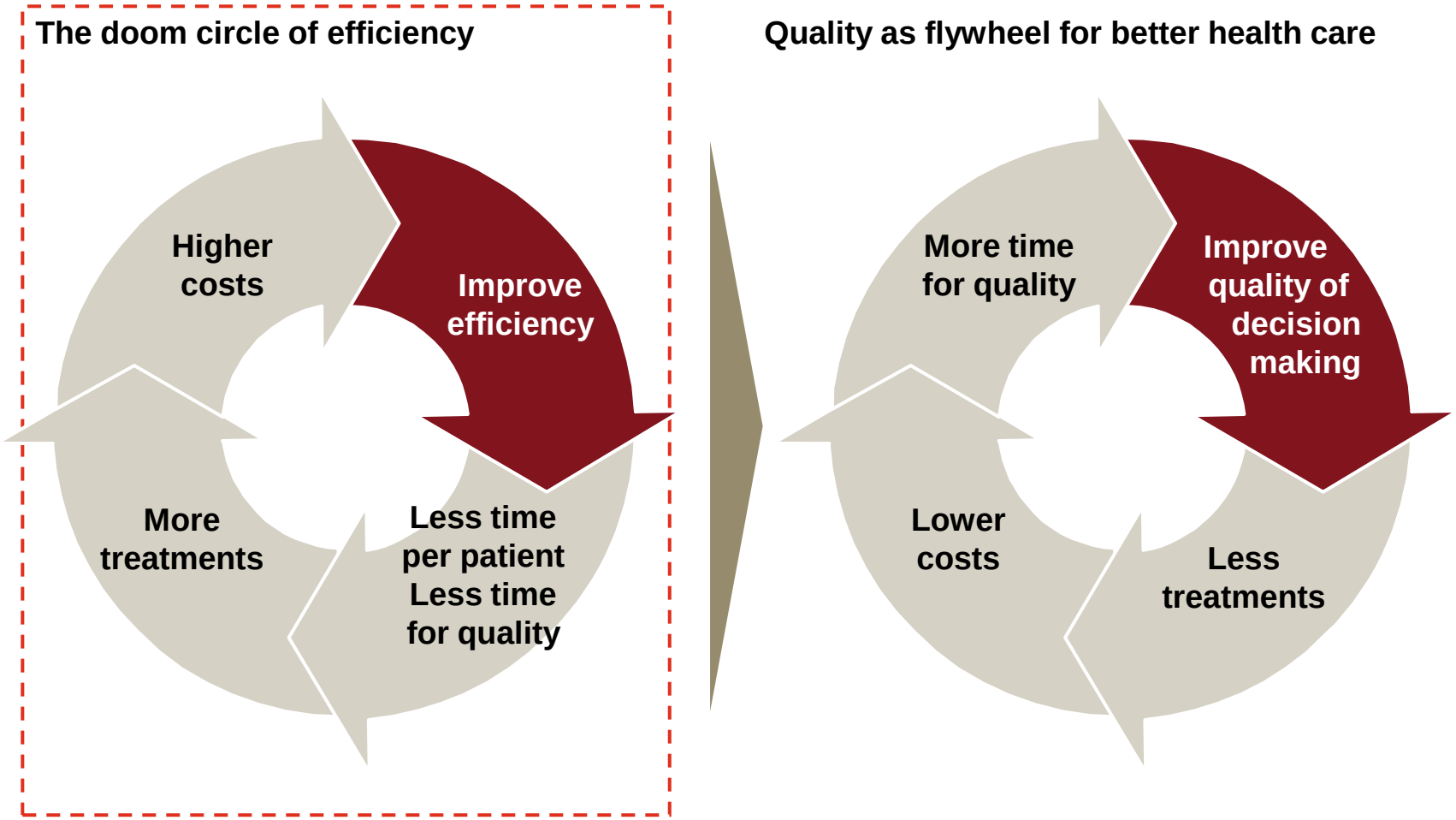
We pay volume instead of quality

We pay in a fragmented way



Bron: Strategy&

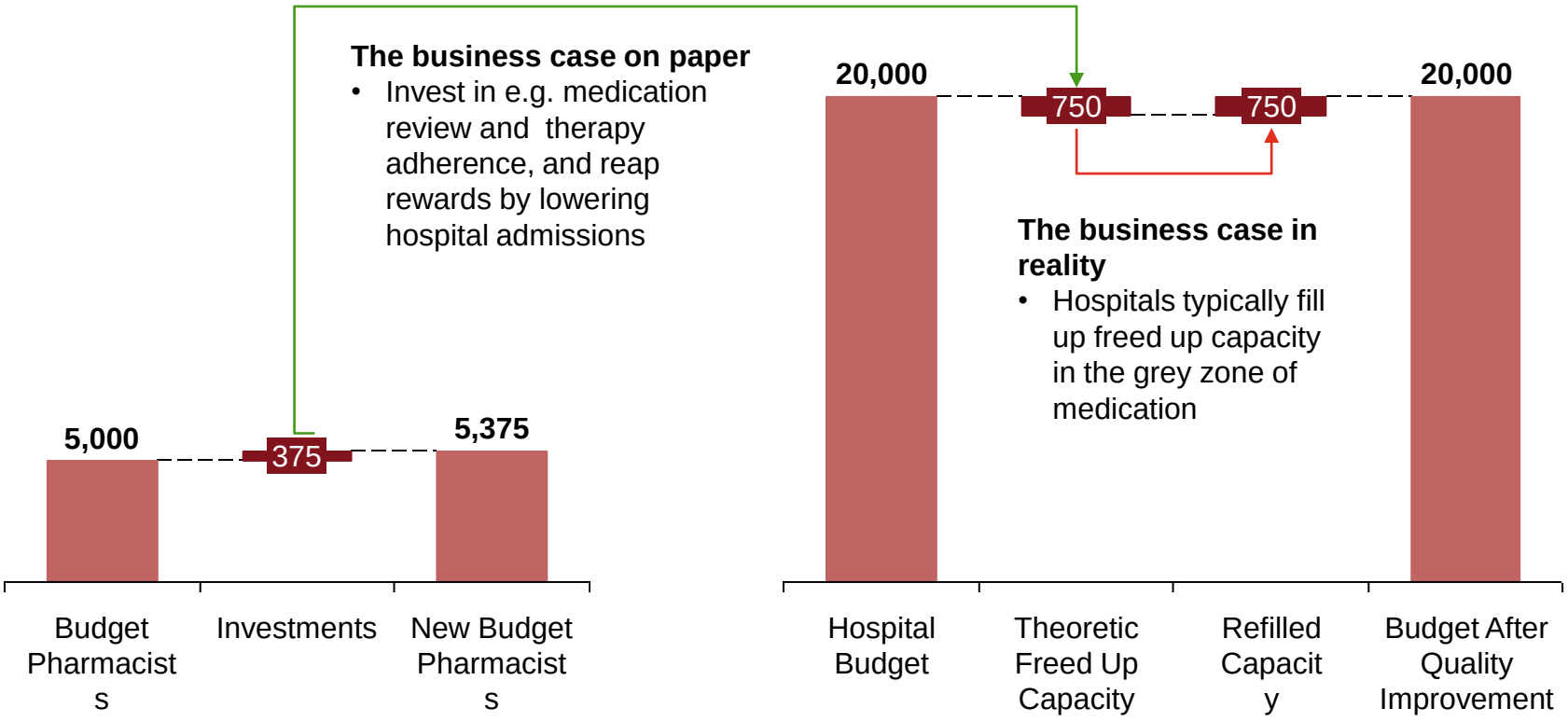
The challenge is to use contracting and reimbursement to create a flywheel from quality



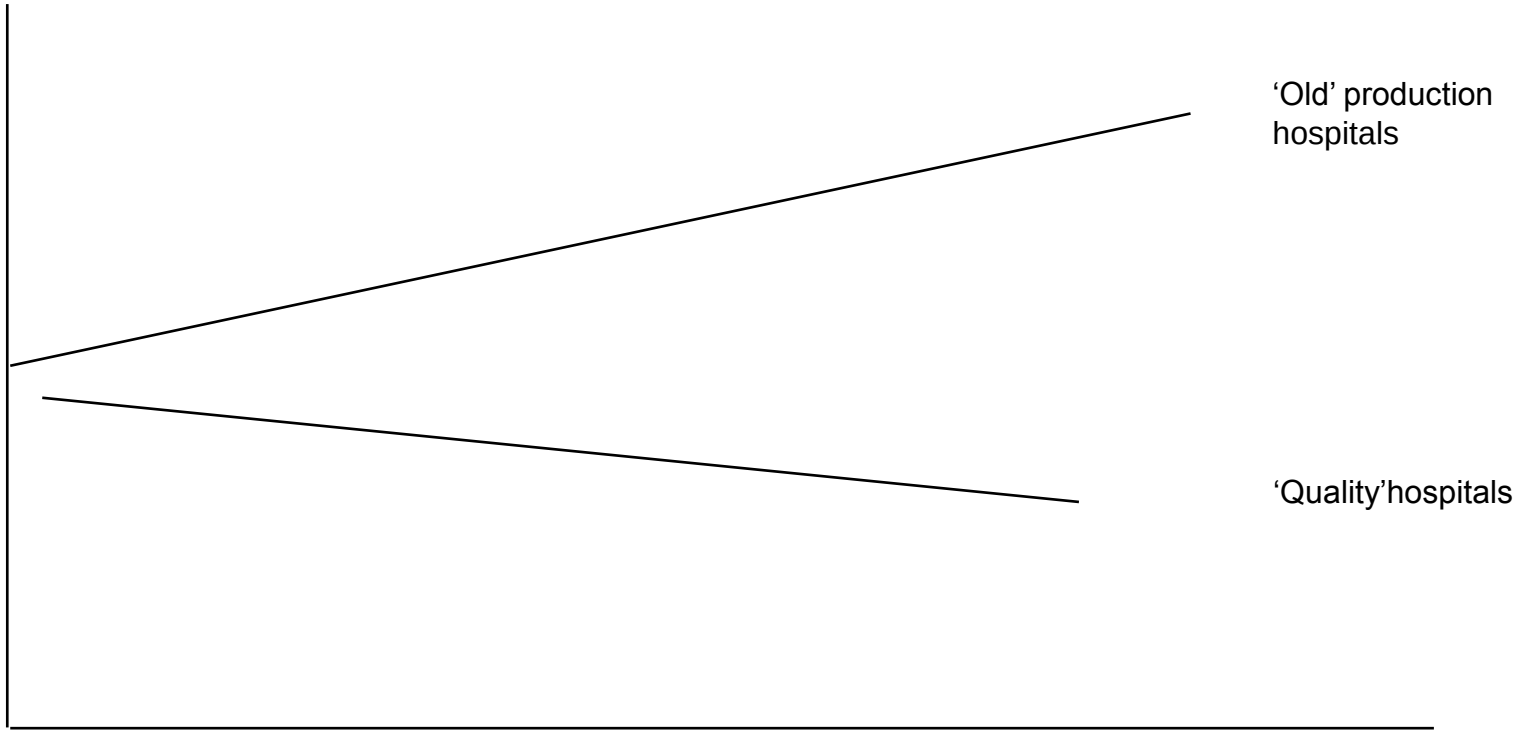
Fragmentation needs to be solved in order to capture the benefits of investing in quality

The theoretical business case versus the fragmented business case

Illustrative money flows

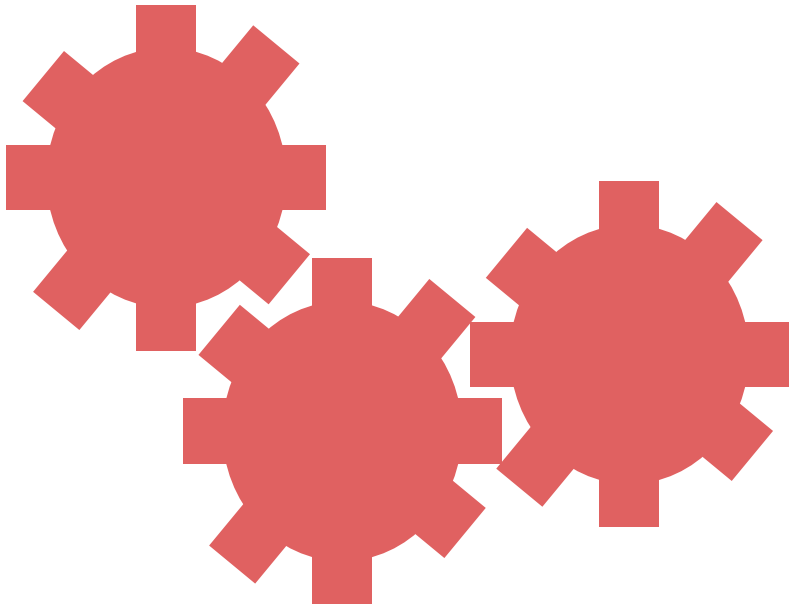


But hospitals investing quality will see a revenue reduction



Three levers for reimbursement and contracting

New product definitions
- E.g. shared decision making consultations, therapy adherence



Reimburse differently
- Shared savings
- Transition paths

Contract selectively and in a differentiated way
- Steer patients to Quality
- Provides

Example of redefining product definitions in order to encompass quality instead of volume

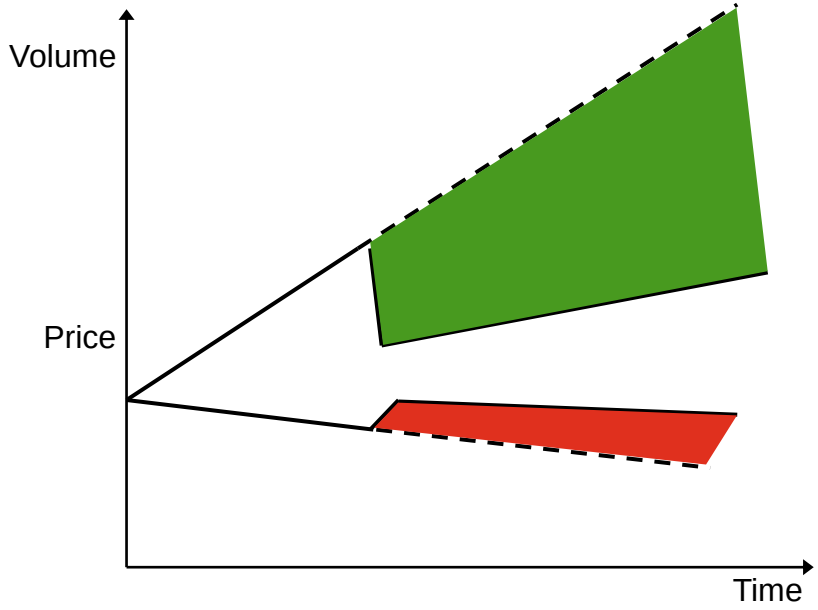
Performance definitions

1. **Medication dispensing (Receptregel)**
   - Distribute prescription medication in standard/weekly form
   - Check correctness/safety of prescription
2. **Medication instructions**
   - Provide usage instructions in case of first time issuance or non-compliance with user instructions
3. **Medication review**
   - Periodically review individual (elderly) medication therapy of patients with chronic medication use
4. **Continuity of care hospitali-zation**
   - Conduct one-on-one interview with patient
   - Ensure correct transition of medication details to other providers of care
5. **Continuity of care discharge**
   - Conduct one-on-one interview with patient
   - Provide clear guidance on medication therapy, including changes due to hospitalization
6. **Self management education**
   - Provide education in group format on self-management to optimize medication utilization (medication adherence/ utilization)
7. **Self management counseling**
   - Provide counseling per individual patient's request on potential drug-drug interactions in medication therapy (e.g., combination prescription/OTC)
8. **Medication related travel counseling**
   - Provide counseling per individual patient's request on medication utilization and storage during travelling
9. **Disease prevention travel counseling**
   - Provide information per individual patient's request on risk of diseases for certain travel destinations
10. **Mutual services**
    - Support other healthcare providers in execution of activities as defined under performance definitions

Paying for quality instead of volume can result in higher prices but lower costs: The need for sophisticated "products"

Objective to control volume with quality initiatives

Not care rationing



Incentivized by product definitions

- Need to counter the volume incentive in the system
  - Income compensation
  - Compensation for extra cost (e.g., admin, IT)
- Need for hard – inescapable – volume agreements
  - To eliminate leak-away effects at the level of the participating and non-participating hospitals
- Benefits can be used by the hospital for more quality improvement investments
- Every 1% decline in hospital volume frees up €200Mn

Connecting quality and financing in contracting policies

- Translate quality initiatives into new revenues

- Identify quality initiatives per hospital and per region

- Contract quality hospitals
- Referrals to quality hospitals by GPs
- Cap other hospitals

- Evaluate revenue potential of quality initiatives
- Determine gain sharing mechanism

Source: Strategy& analysis