



**23-25 JAN.**  
**2018**  
—  
**The EGG**  
**BRUSSELS**

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**Why every Medtech  
company needs a value-  
based strategy**



A MedTech Europe event

**The MedTech Forum**

bringing HealthTech stakeholders together

# countries

4-36x variation in outcome, depending on procedure and country

4x variation in bypass surgery mortality in the UK



5x variation in reoperations due to complications after knee replacement in Germany



6x variation in emergency readmissions after hip surgery in the UK



9x variation in complication rates from radical prostatectomies in the Netherlands



18x



36x

variation in reoperation rates after hip surgery in Germany



variation in capsule complications after cataract surgery in Sweden

Source: National Institute for Cardiovascular Outcomes research (annual report 2016-2020), The Swedish National Coronary Registry (SCKR), NIS and SID 2011 data; AHRQ IQI SAS Module; Dimick et al. (2009). Composite measures for surgical mortality in the hospital. Health Affairs, 28(4), 1189-98 Health at a Glance 2013, OECD Indicators; Statistisches Bundesamt (DRG\_OPSvier, Stat\_Bev\_1A), eigene Berechnung und Darstellung (IGES 2014) <https://faktencheck-gesundheit.de/die-faktenchecks/interaktive-karten-zu-regionalen-unterschieden/kniegelenk-erstimplantationen>; BCG analysis



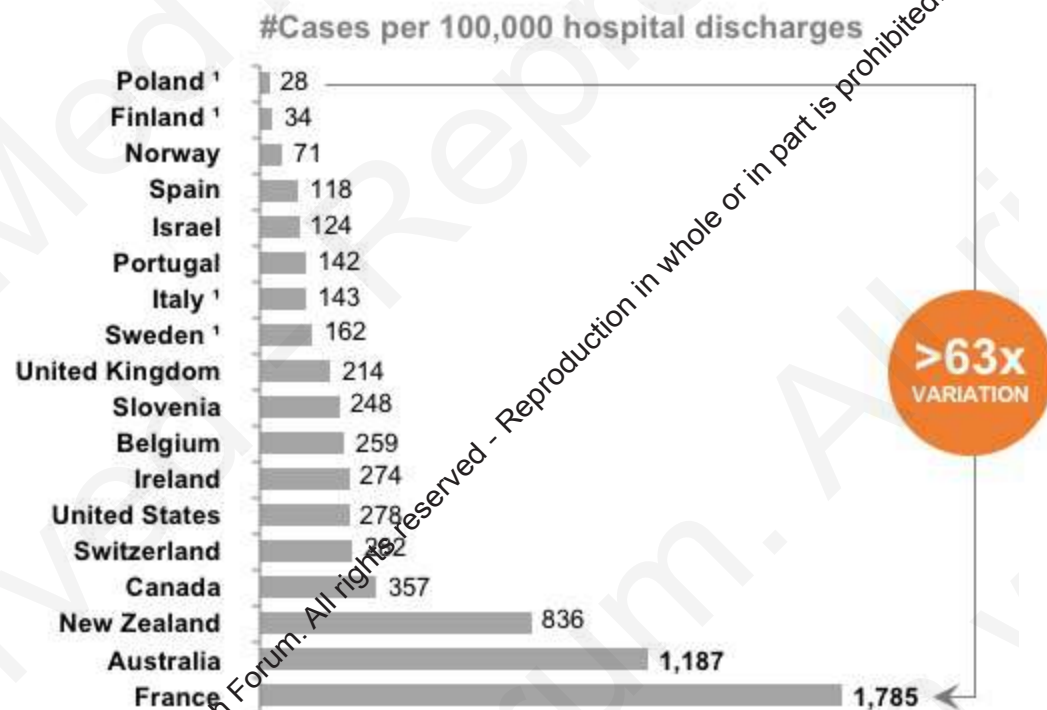
# Outcome variations between countries

Example: Complications after hip replacement surgery

## Deep Vein Thrombosis (DVT)



## Postoperative Pulmonary Embolism (PE)



1. Average number of secondary diagnoses <1.5 for all surgeries which may result in an underestimation of the numbers. Notes: Numbers are not risk-adjusted. Numbers obtained by all episode method. Surgical episode method used for Poland, Belgium, UK, Switzerland, Ireland, USA, Slovenia, Australia, France.

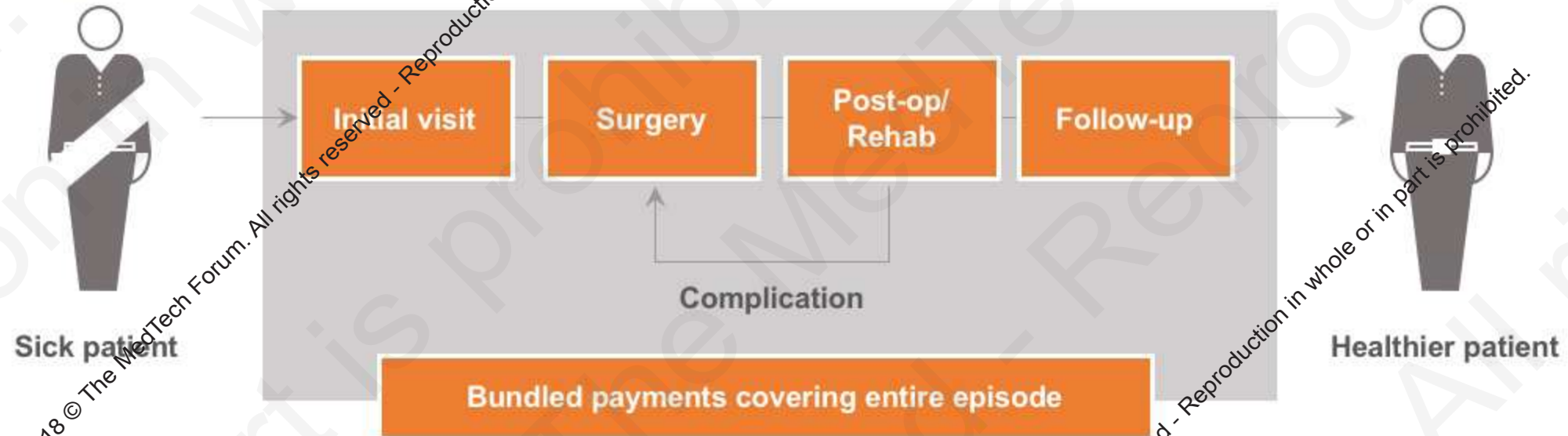
Source: OECD Health Statistics 2015

**Outcome and cost variation is  
all over the place in  
healthcare**

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# Bundle payment pays fixed price per patient



- **Fixed reimbursement per patient**—Not by activity
- **Reimbursement covering full care episode**—Not a single service
- **Complication warranty**—Provider responsible for complications, strong outcomes and low costs
- **Outcome based reimbursement**—Part of payment based on patient outcomes
- **Informed patient choice of provider**—Transparent outcomes/rankings



# Bundles drive better outcomes at lower cost



## Model design

### Bundled payment for hip- and knee surgery

- Payment of €6,300 to cover full cycle of care, including diagnostics, surgery with post-operative care, implant and follow-ups

### Complication guarantee

- Provider financially responsible for non-acute complications related to the primary surgery up to 2 years post-operation

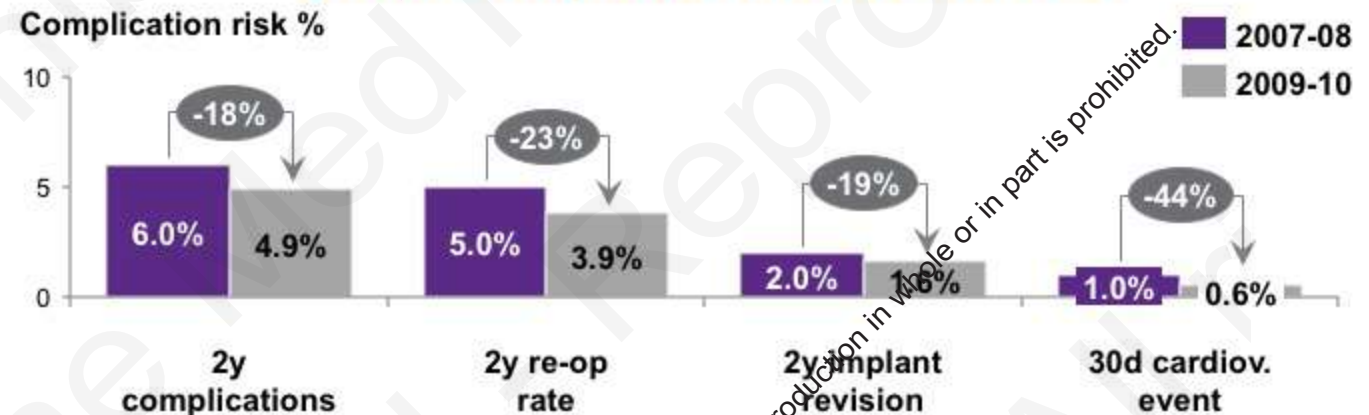
### Result dependent payment

- 3.2% of the reimbursement was retained and paid out if the provider achieved defined goals

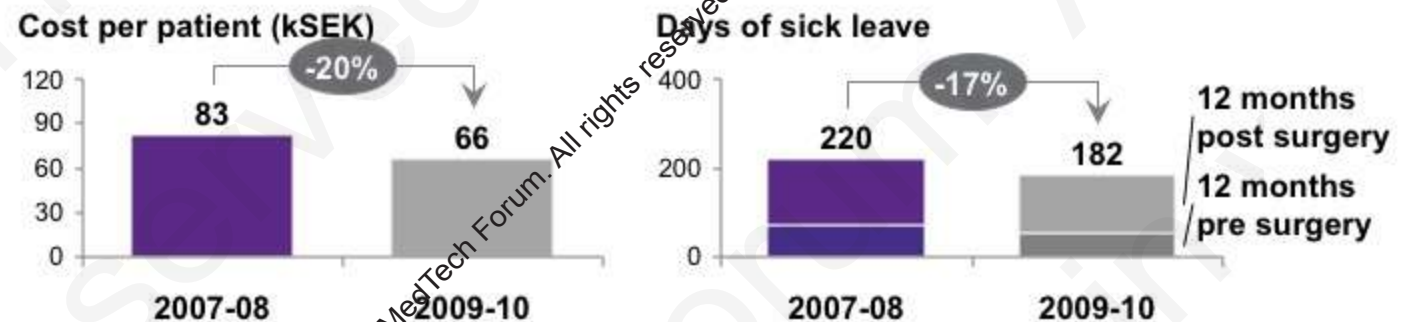
Outcomes

Costs

Outcomes improved with more than 18%



Costs and sick leave decreased with ~20%



Note: 2007-08 and 2009-10 were the 2 years before and after the new model was introduced.

Source: New reimbursement model for care choice hip- and knee prosthesis surgery – Follow up report; BCG analysis

**Bundled payments incentivize providers to minimize avoidable, and costly, complications**

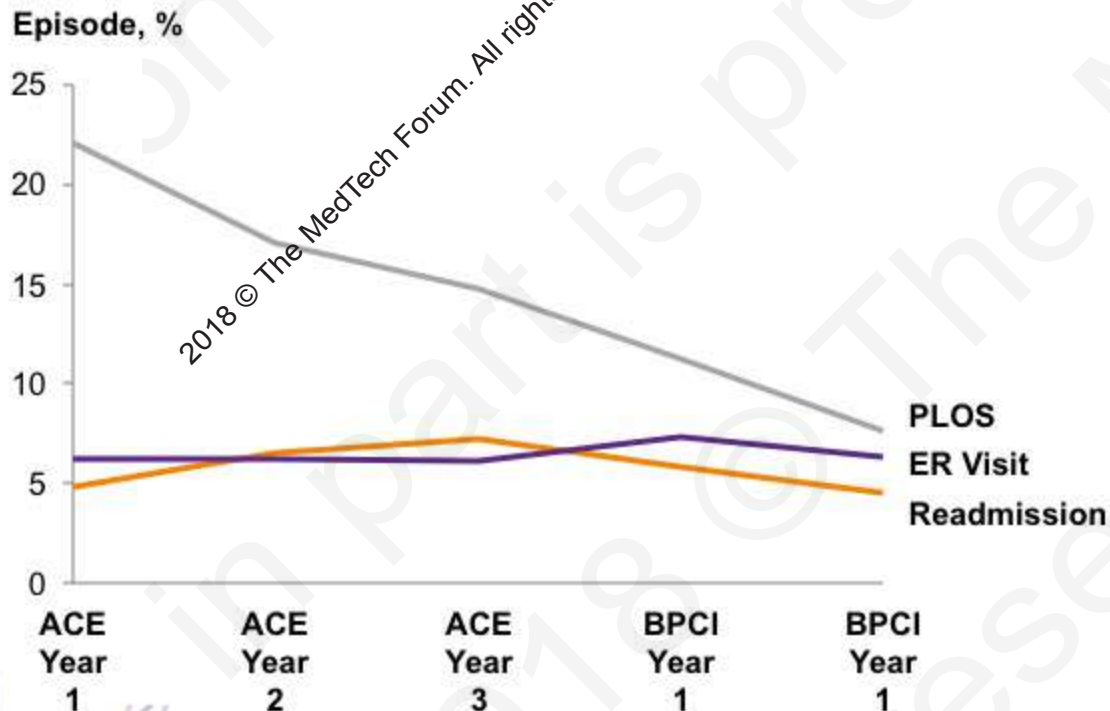


# prices

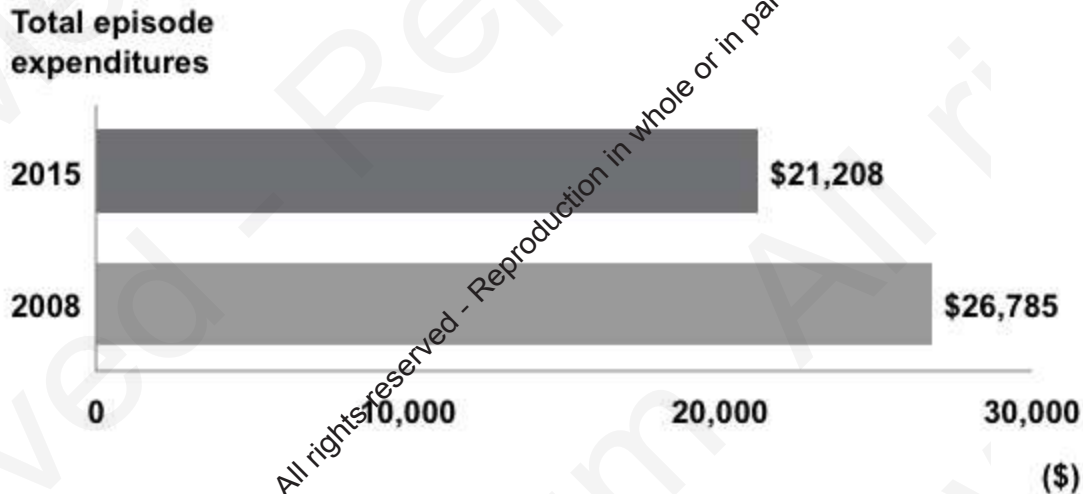
## Example: Baptist Health System 2010-2015



### Quality of care—ER visits, readmissions, and Prolonged Length of Stay (PLOS)



### Cost savings over Acute Care Episodes (ACE) and Bundled Payments for Care Improvement (BPCI)



Total episode expenditures: -20.8% (\$5,577)  
Implant expenditures: -28.9% (\$1,921)  
Supply expenditures: -59.4% (\$728)



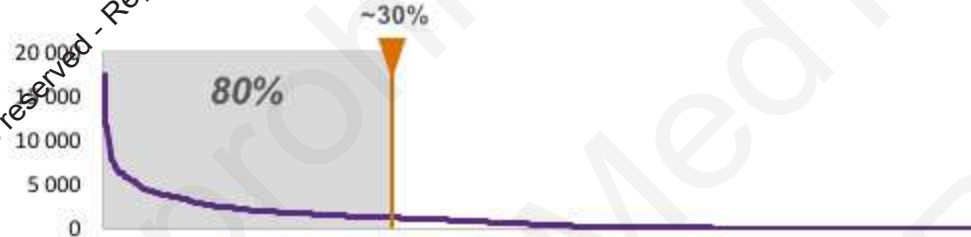
# Volumes for high cost procedures consolidating



## Treatment area

Cardiac catheter procedures<sup>1</sup>

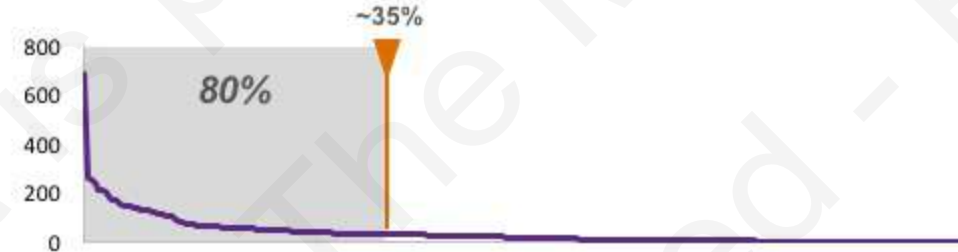
## Procedure volumes by hospital



## Out of 1.956 hospitals...

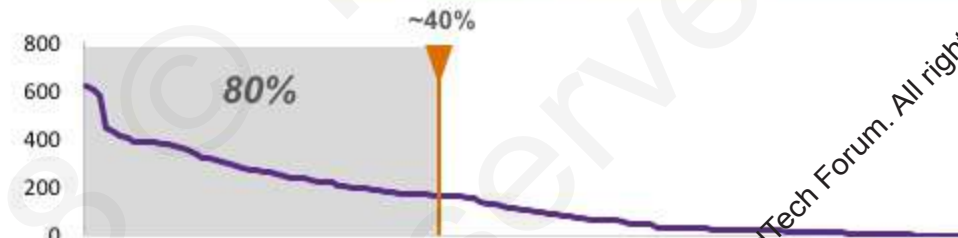
...1'041 perform procedure  
302 hospitals account for 80% of procedure volume

Prostate laser treatment<sup>2</sup>



...256 perform procedure  
87 hospitals account for 80% of procedure volume

TAVI<sup>3</sup>



...132 perform procedure  
52 hospitals account for 80% of procedure volume

1. OPS-Codes included: 1-273, 1-274, 1-275, 1-277, 1-279, 8-839 (Herzkatheter-Untersuchungen) 2. OPS-Codes included: 5-601.4..., 5-601.7... (Transurethrale Exzision und Destruktion von Prostatagewebe mit Laser) 3. Transcatheter aortic valve implantation, OPS-Codes included: 5-35a (Minimalinvasive Operationen an Herzklappen) Source: G-BA Quality Reports; BCG analysis

**Value-based reimbursement models will put pressure on device prices if value proof is lacking**



# replacement

## Example hospitals of a private hospital group



	Pre-operative Care	Pre-surgery Room/anesthesia	Or prep	Operation	Post-operative Care
<b>Hospital A</b>	<ul style="list-style-type: none"><li>• Outpatient knee consultation</li></ul>	<ul style="list-style-type: none"><li>• Spinal anesthesia</li><li>• Femoral artery block</li><li>• Additional oral medications</li></ul>	<ul style="list-style-type: none"><li>• Patient positioned in pre-surgery room by doctor</li><li>• Operating room setup</li></ul>	<ul style="list-style-type: none"><li>• Implant product A</li><li>• With cell saver</li><li>• No hemostasis</li></ul>	<ul style="list-style-type: none"><li>• 24h recovery room</li><li>• No autologous blood</li><li>• No banked blood checked</li></ul>
<b>Hospital B</b>	<ul style="list-style-type: none"><li>• Consultation by appointment</li><li>• Ward</li></ul>	<ul style="list-style-type: none"><li>• Spinal anesthesia + minimal sedation</li><li>• Femoral artery + sciatic nerve block catheter</li></ul>	<ul style="list-style-type: none"><li>• Patient positioned in operating room by assistant</li><li>• Operating room setup</li></ul>	<ul style="list-style-type: none"><li>• Implant product B</li><li>• With navigation</li><li>• No cell saver</li></ul>	<ul style="list-style-type: none"><li>• ~3h recovery room</li><li>• No autologous blood</li><li>• Two banked bloods checked</li></ul>

Evidence-Based Medicine

# Ample opportunity to improve care practice

## Population factors & co-morbidities account for ~20% of variation

% of variation accounted for



**IQI # 17**  
**Acute stroke mortality**  
**(2011)**

Known factors (Population, Co-Morb., System)  
Unknown factors

## Key significant factors

Category	Contributing factor <sup>1</sup>	P Value
Population Factors	Gender (female)	0.01
	CHF	<0.001
Co-Morbidities	Hypertension	<0.001
	Neurological disorders	0.004
	Total inpatient revenue	<0.001
System	Total outpatient revenue	<0.001
	Total discharges	0.003
	Teaching hospital	<0.001
	Discharges per capita	<0.001

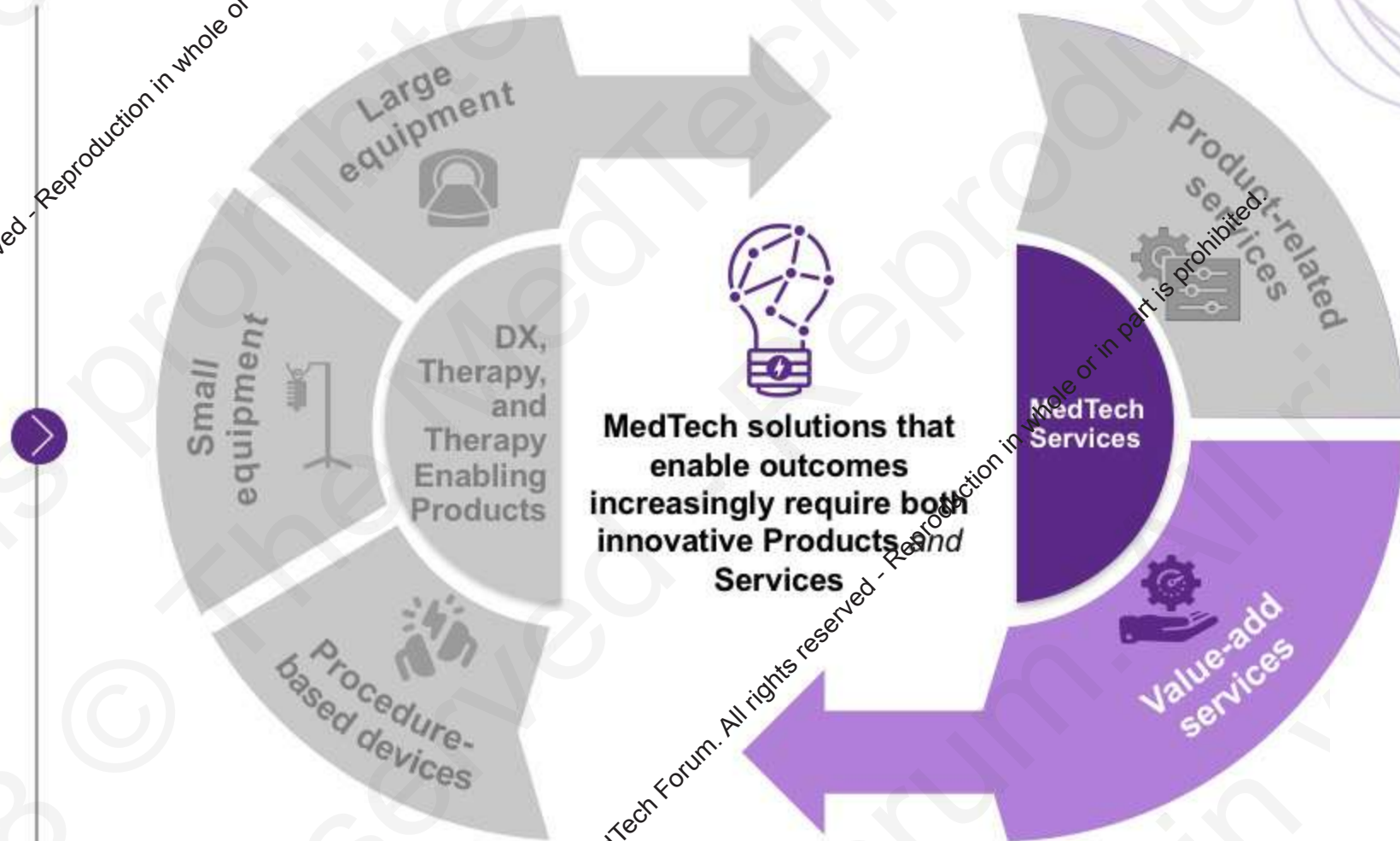
**>80% of variability driven by factors *inside* the hospital and are unobserved by this study**

1. Only includes contributing factors with P<0.01 Source: XXXXX ; BCG



## Value-add services

Opportunities to pull the cost and/or outcomes levers of the value equation



**The edge for Medtech firms:  
> 80 % of outcome variation  
driven by care practice**

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# Value-add services based on pathway analysis

## VBHC Implementation Toolkit

Outcomes transparency (ICHOM)  
Cost transparency (TDABC)

Outcome drivers  
Patient cohorts

- Outcomes and cost measurement to understand value drivers
- Outcome driver tree based on key structure and process elements
- Patient cohorts to understand risk profiles and care differences

## Patient pathway analysis

Outpat. sector  
& rehab.

Client VBHC  
Laboratory

Benchmarking  
Partner

- Detailed client patient pathway mapping
- Benchmarking with best-in-class stroke centers
- Understanding interface with rehab and outpatient sectors

## Pain points and care variation with impact on

Outcomes

Costs

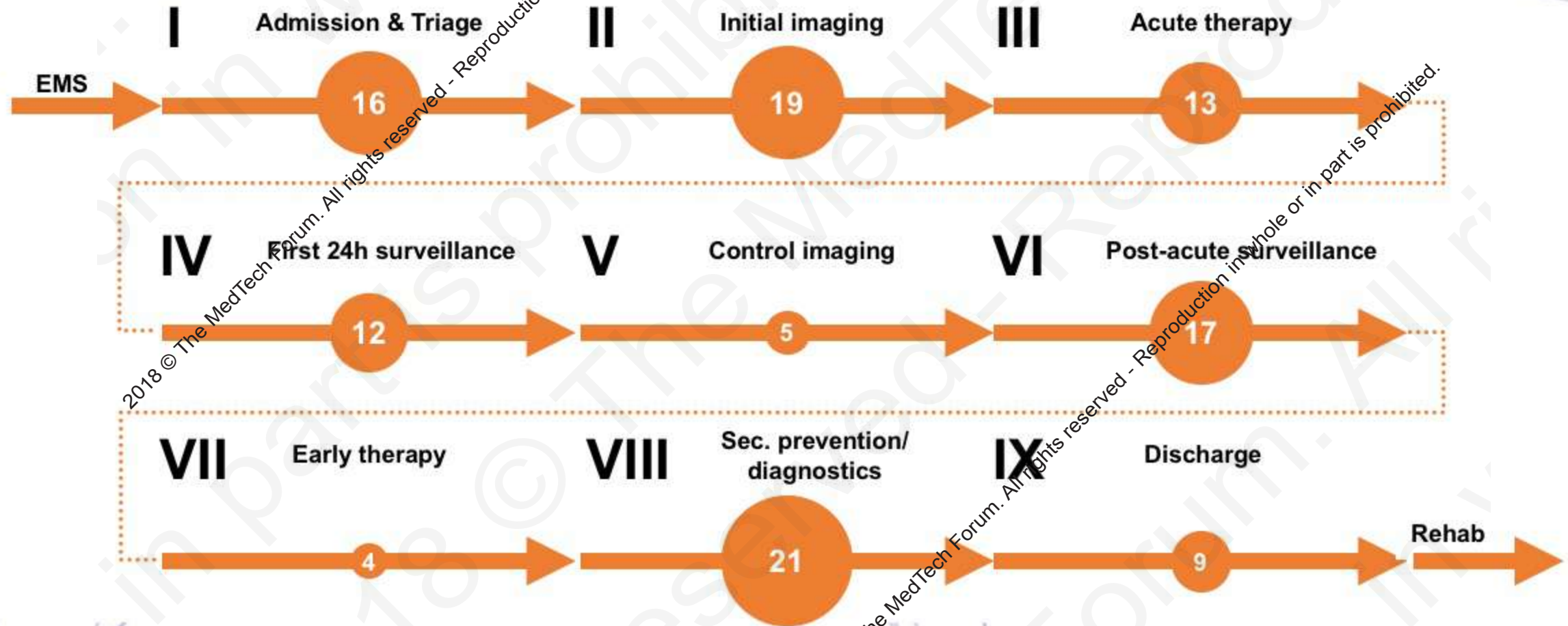
- Jointly develop long list of pain points that cause care variation
- Identify corresponding care solutions that address pain points

## VBHC Solutions Framework



- Value-add services to reduce care variation and improve outcomes/reduce costs
- Value-add services prioritization along dimensions match with client capabilities, monetarization potential and market scalability

# > 100 pain points along the stroke care pathway





# Pain points grouped into five root causes



## Information Silos

**Delayed, incomplete and non-prioritized information flows between involved staff**



## Insufficient Enablement

**Lack of required education/training and nominal authority of staff**



## Numerous Decision Options

**Lack of clear protocols in acute care causing critical time delay**



## Capacity Constraints

**Delays and waiting times for diagnostic/therapeutic facilities despite high prioritization protocols**

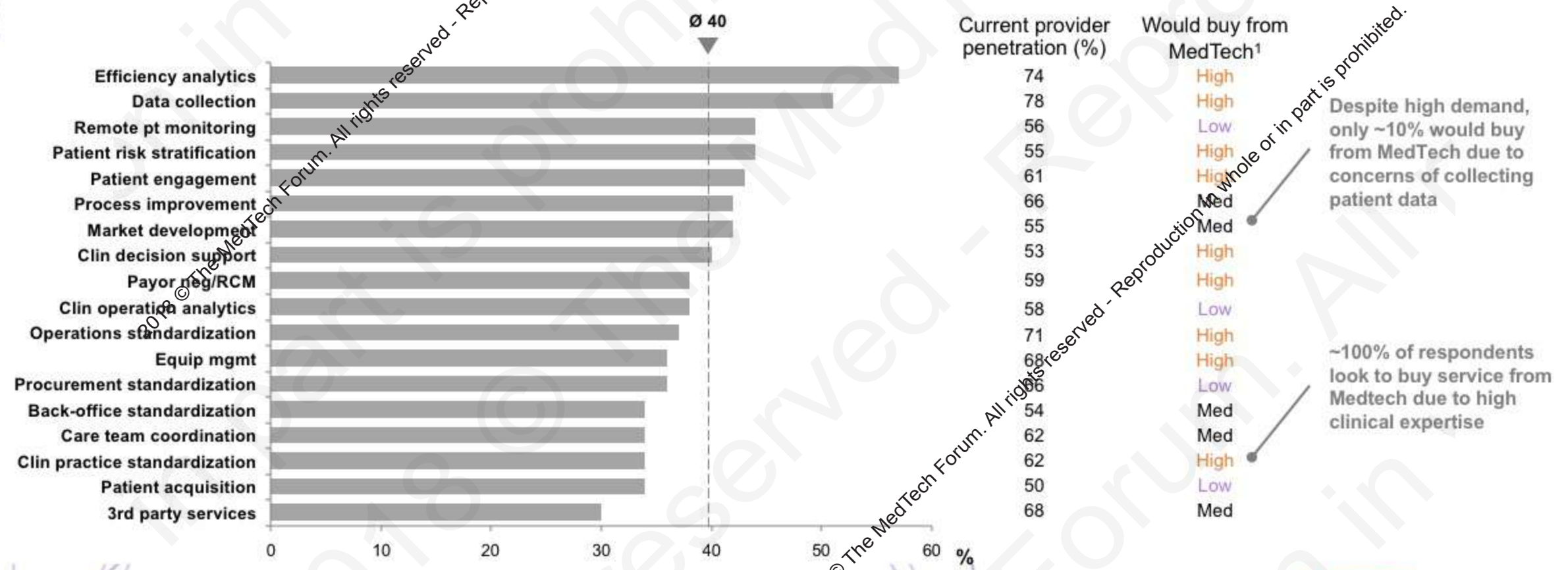


## Lack of follow up and rehab

**No structured data sharing with lacks in prevention programs and compliance controlling**

# Providers willing to adopt value-add services

## Percent of respondents that will buy more of these services in the next 3 years

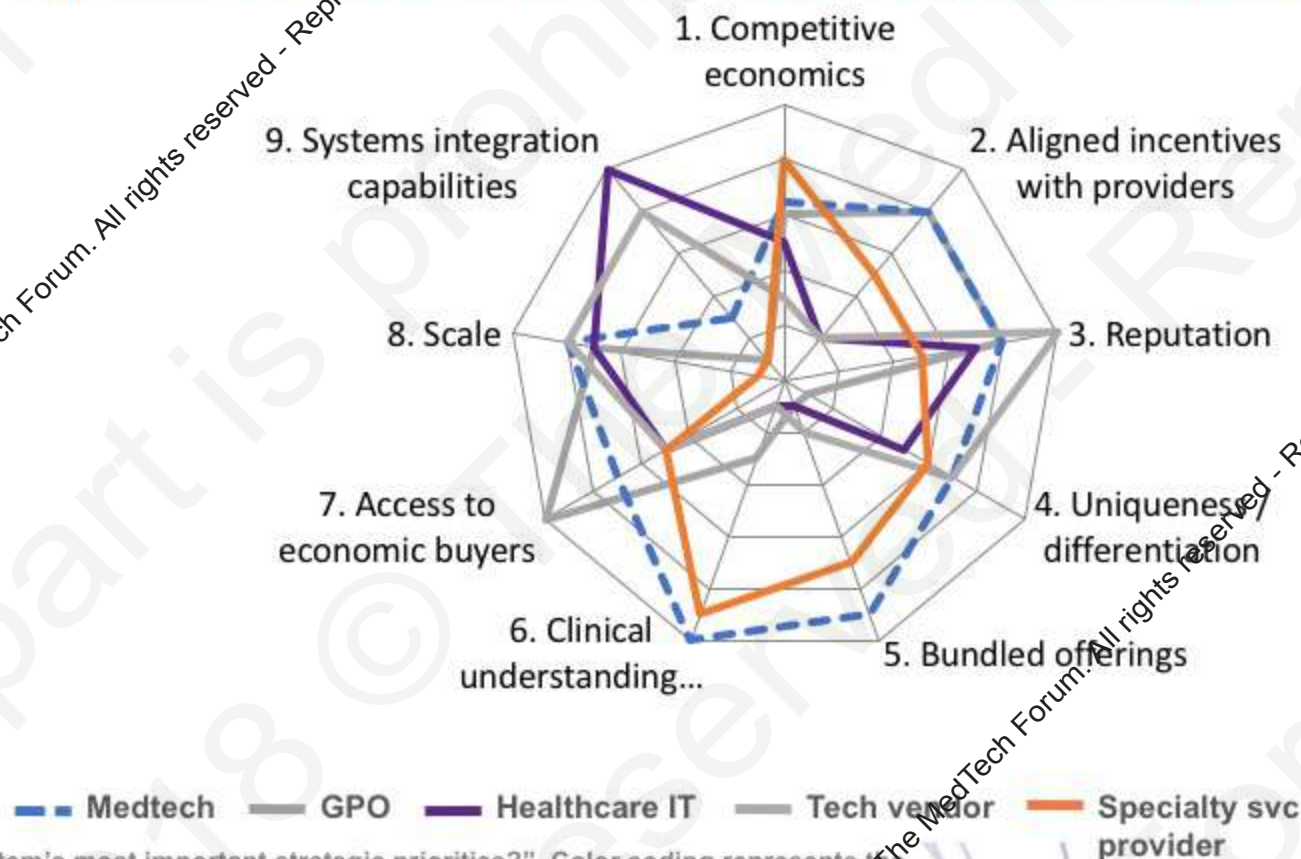


1. Low = <40% of respondents, Med = 40-60%; High = >60% Source: BCG Provider Survey April 2018



# MedTech companies with a clear right to win

Key decision making criteria for hospital providers (in decreasing order of importance)



1. "What are your hospital or system's most important strategic priorities?". Color coding represents the proportion within each provider segment that indicated that answer as their top priority  
Source: BCG Provider Survey April 2017 (n=117)

**MedTech  
industry  
well  
positioned  
to provide  
value-add  
services**



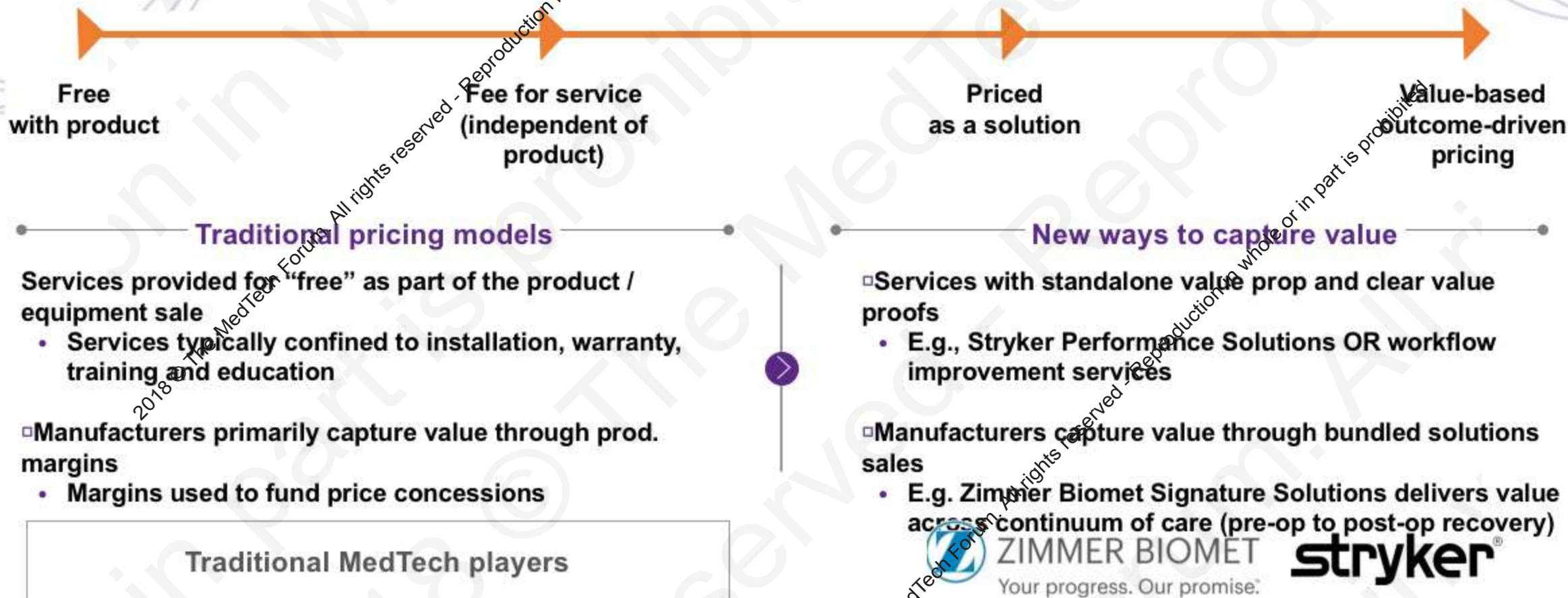
▣ **Providers are  
willing to adopt  
value-add services**



▣ **Providers value  
MedTech  
companies'  
knowledge and  
capabilities**



# Value from services captured in different ways



# Implant makers offering value-based solutions

Care Delivery Cycle								
Implant Makers	Prehospital		Inpatient		Post acute		Value tracking & improvement	
	Patient education	Patient engagement	Surgical preparation	Safety & self care	Facility selection & logistics	Online rehabilitation	Outcomes	Cost
	 <b>DePuy Synthes</b> Advantage	✓	✓	✓	✓	✓	✓	✓
	<b>Medtronic</b> Orthopedic Solutions	✓	✓	✓	✓	✓	✓	✓
	 <b>Smith &amp; Nephew</b> Synchra		✓	✓			✓	✓
	<b>Stryker</b> Performance Solutions	✓	✓	✓	✓	✓	✓	✓
	 <b>Zimmer</b> Signature Solutions	✓	✓	✓	✓	✓	✓	✓

Source: Why Every MedTech Company Needs a Value-Based Strategy, BCG perspectives, based on publicly available data



# Seven determinants of success for value-add services

- 1 Proximity of service offering to a product portfolio
- 2 Product or procedure provides link to patient beyond episode of care
- 3 Deep clinical expertise in disease state where procedure is core to therapy
- 4 Leading market position and scale within and/or across the portfolio
- 5 Care pathway is fragmented across sites of care
- 6 Device represents >20% of the overall cost of the procedure
- 7 Factors "beyond the product" can be impacted to improve the outcome

## New BCG report



### Why Every MedTech Company need a VBHC Strategy

New health care VBHC funding models have transformed MedTech players' offering fundamentally

- E.g. in orthopedics where US bundled payments require industry to rethink their service offering

The paper outlines various VBHC models with examples from the industry according to 3 value-based strategies:

- From stand-alone products to value based solution
- Leveraging value measurement
- Investing in value based case delivery

□ The VBHC funding models are likely to further expand and MedTech companies must hence to respond by adapting their corporate and business strategy according to five VBHC steps:

1. Deciding where to play
2. Size the opportunity
3. Map the care delivery cycle
4. Develop the VBHC solution set
5. Design the VBHC business model

Stay tuned for our upcoming value-based publication:

### Serious About Services

on how to unlock business opportunities in MedTech services