



Ministère de l'économie et des finances

Ministère des Affaires sociales et de la Santé

MINISTÈRE
DES AFFAIRES SOCIALES
ET DE LA SANTÉ

Ministère du Travail, de l'Emploi,

de la Formation Professionnelle et du Dialogue Social

Seminar on international trends in hospital payment systems

„Situation in Germany“

Concrete examples of contracting locally between payers and hospital

June 3rd, Paris



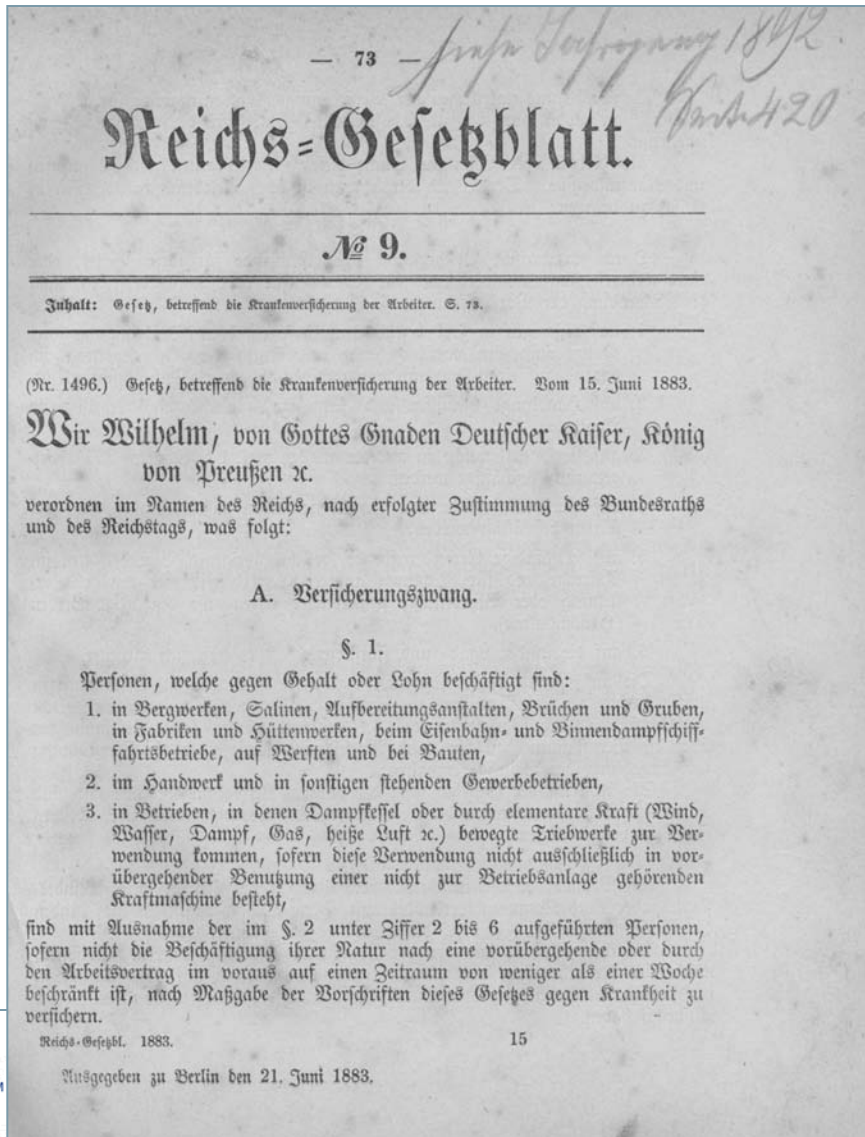
Unternehmen Leben

Dr. Christian Elsner | Dr. Jan Helfrich

1. History and Mechanisms

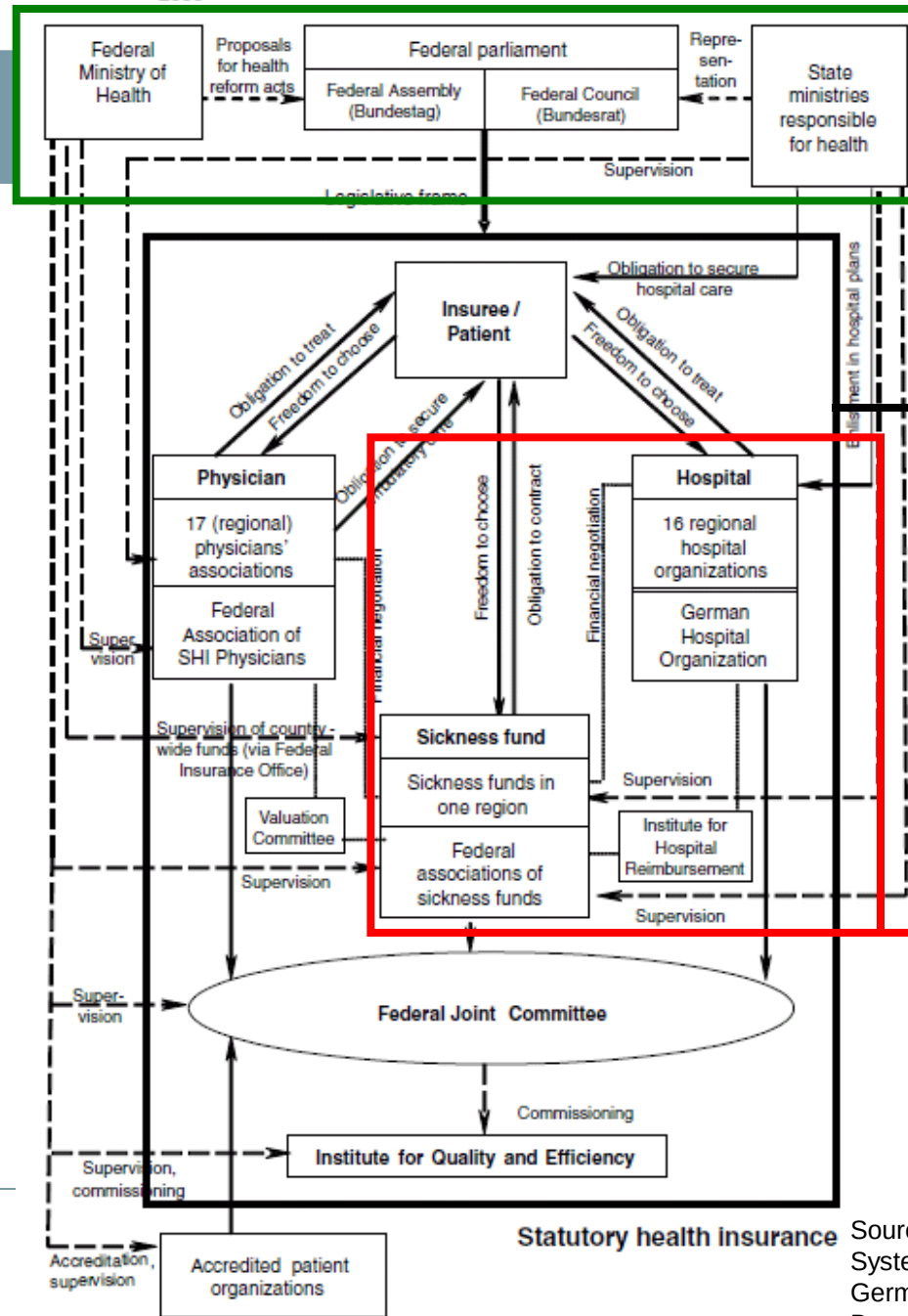
Statutory health insurance by law

- Freedom of choice for the insuree/Patient
- Accredited by Governmental authorities
- Not contracted by insurers



Otto von Bismarck-Schönhausen
1815-1898

Fig. 3. The organizational relationships of the key actors in the health care system, 2005



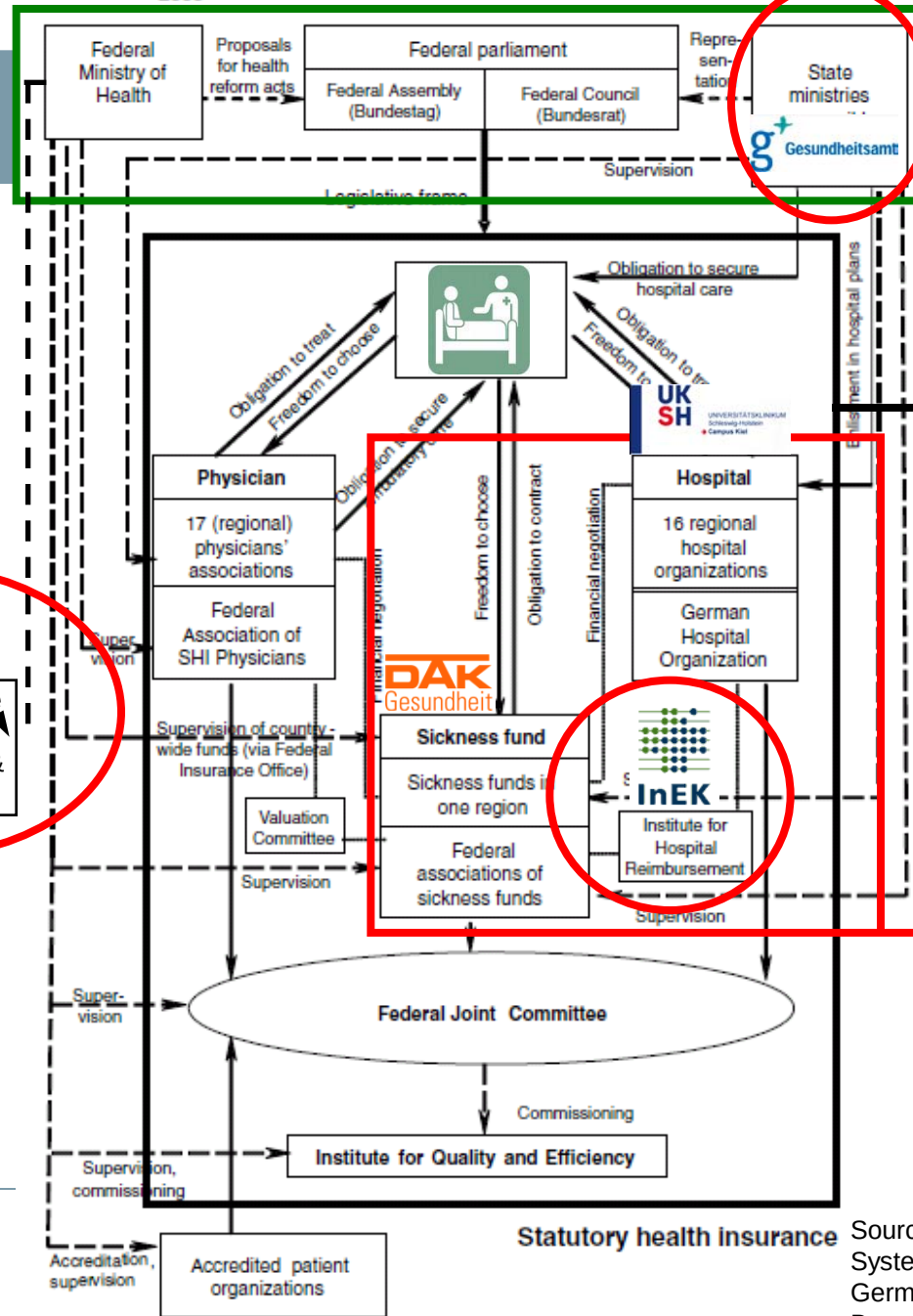
German Health care System at a glance

Fig. 3. The organizational relationships of the key actors in the health care system, 2005

German Health care System at a glance



German Institute for medical documentation & information



Government
&
Authorities



Self
Administration



Hospital budget
negotiation

Statutory health insurance

Source: Health Care Systems in Transition, Germany 2004, Reinhard Busse, Anette Riesberg



Unternehmen Leben

prerequisites in respect to a new DRG-System every year

– from diagnosis/procedure to drg



ICD-10-GM 2013 Systematisches Verzeichnis

Internationale statistische
Klassifikation der Krankheiten und
verwandter Gesundheitsprobleme
10. Revision – German Modification

Version 2013

Herausgegeben vom Deutschen Institut für
Medizinische Dokumentation und Information (DIMDI)
Im Auftrag des Bundesministeriums für Gesundheit
unter Beteiligung der Arbeitsgruppe ICD
des Kuratoriums für Fragen der Klassifikation im
Gesundheitswesen (KKG)

Bearbeitet von Dr. med. Bernd Grawert



OPS 2010 Systematisches Verzeichnis

Operationen- und Prozedurenschlüssel
– Internationale Klassifikation
der Prozeduren in der Medizin

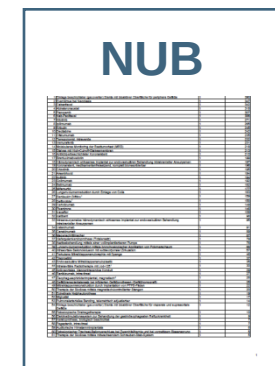
Version 2010 – Stand 26. Oktober 2009

Herausgegeben vom Deutschen Institut für
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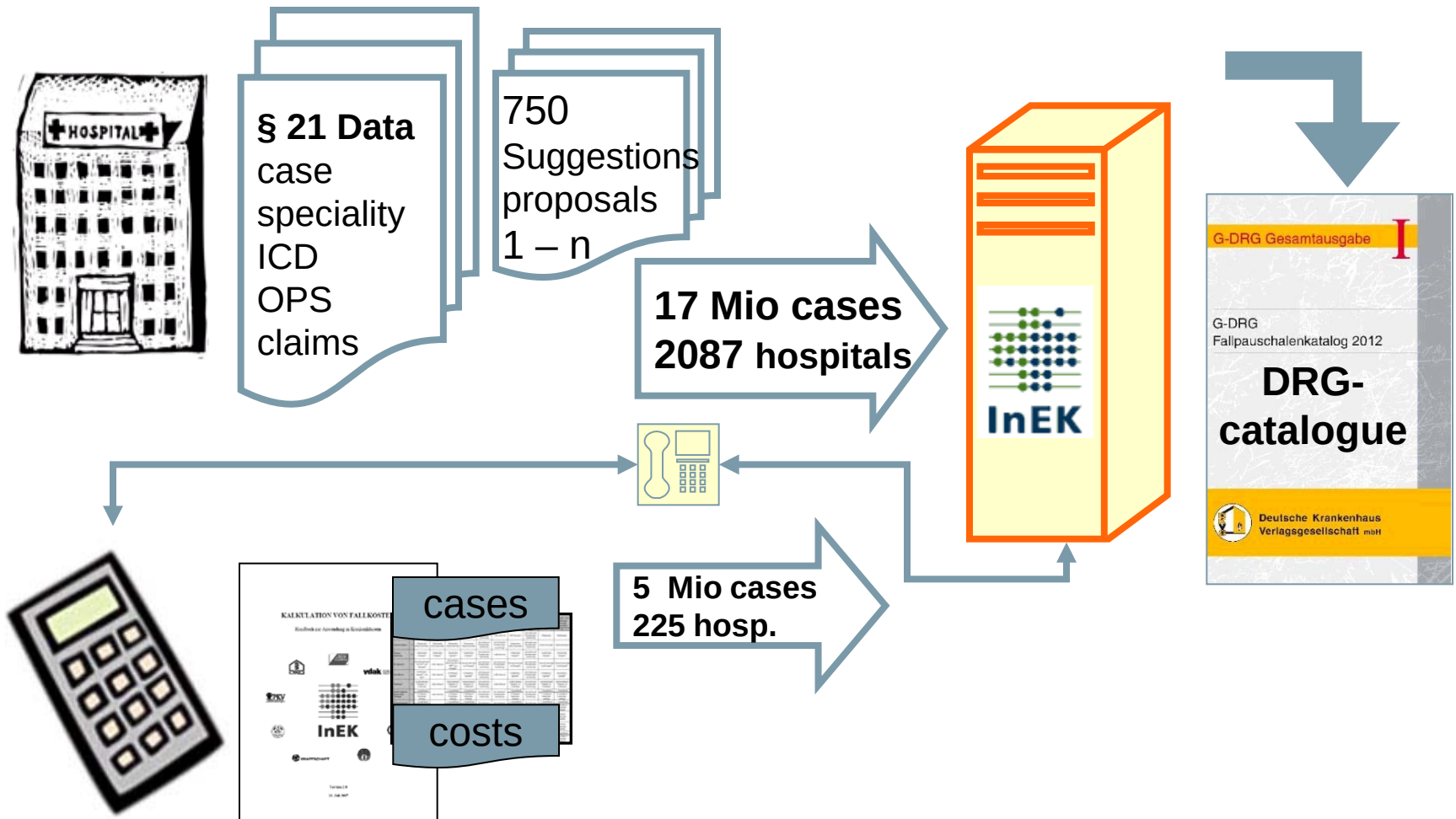
Bearbeitet von Dr. med. Bernd Grawert



German Modification annual



Calculating DRGs for Germany

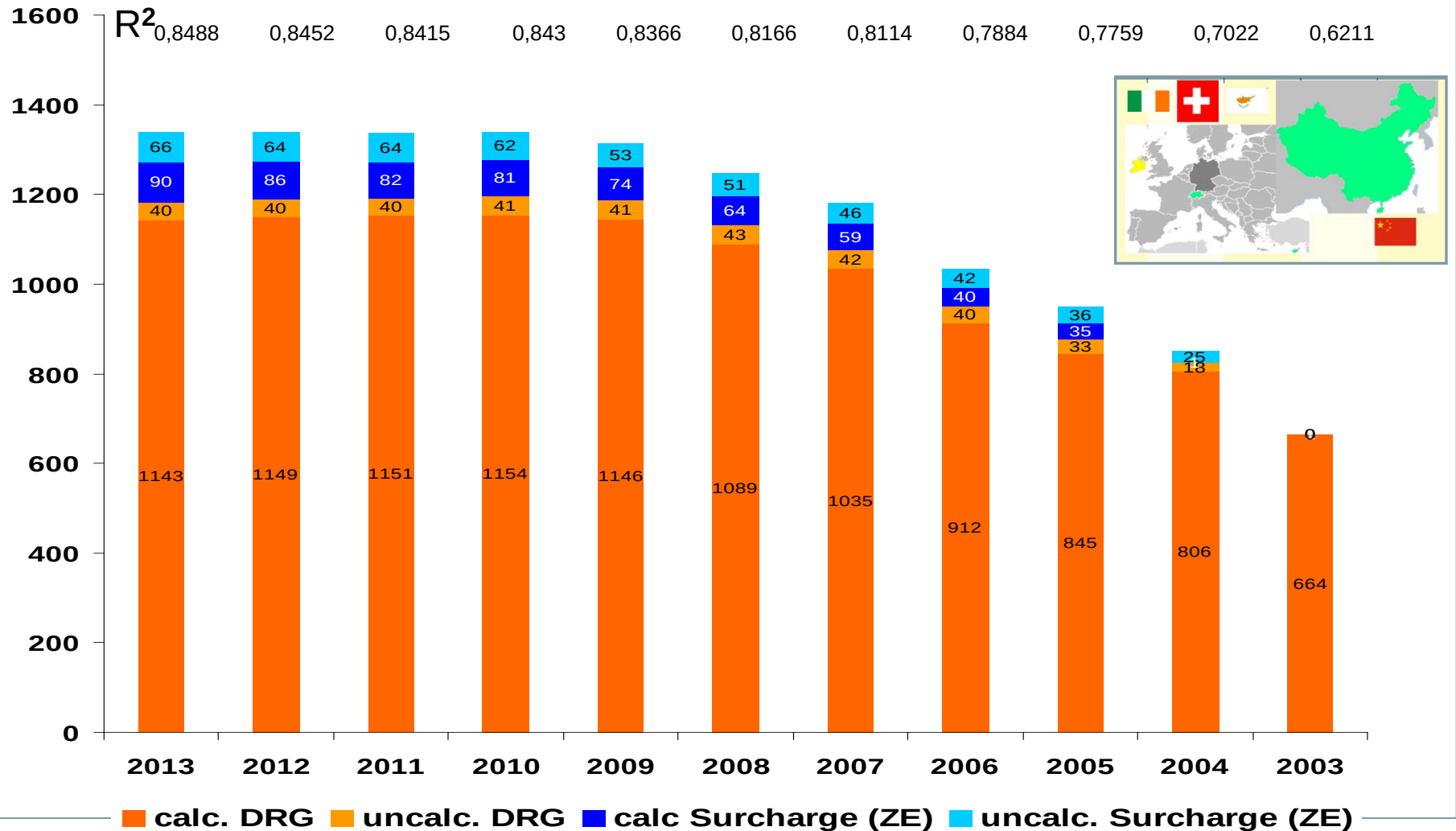


Results of the DRG-Calculation

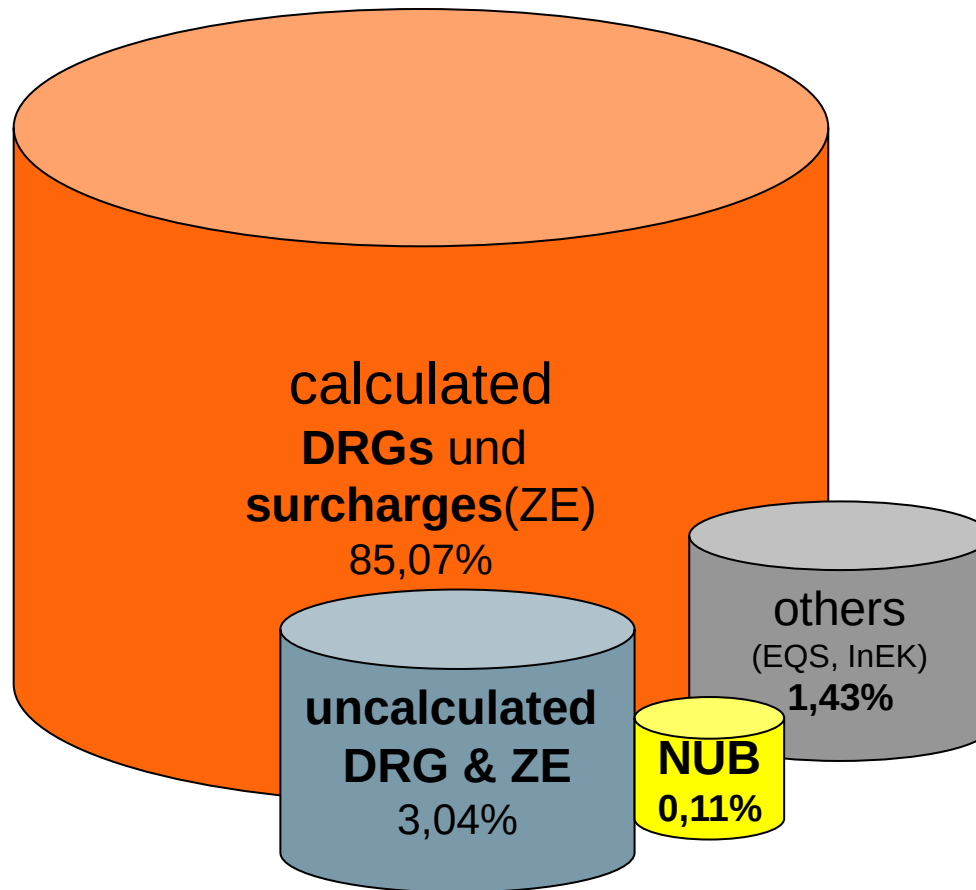


- DRG with case weight
- Unpriced (negotiable) DRG
- Surcharges (ZE) with case weight / Price
- Negotiable surcharges (ZE)
- NUB

Increasing amount of of „unpriced“ items in the DRG-catalogue



Budget share calculated and uncalculated items as percent of annual spendings



2. At the negotiation table

Highly standardized and regulated process of negotiation

Single Hospital



1

Fixed set of
electronic forms



Fixed Timeline

:

All insurers with a
certain case share



n

Analysis of asking using IT-Support

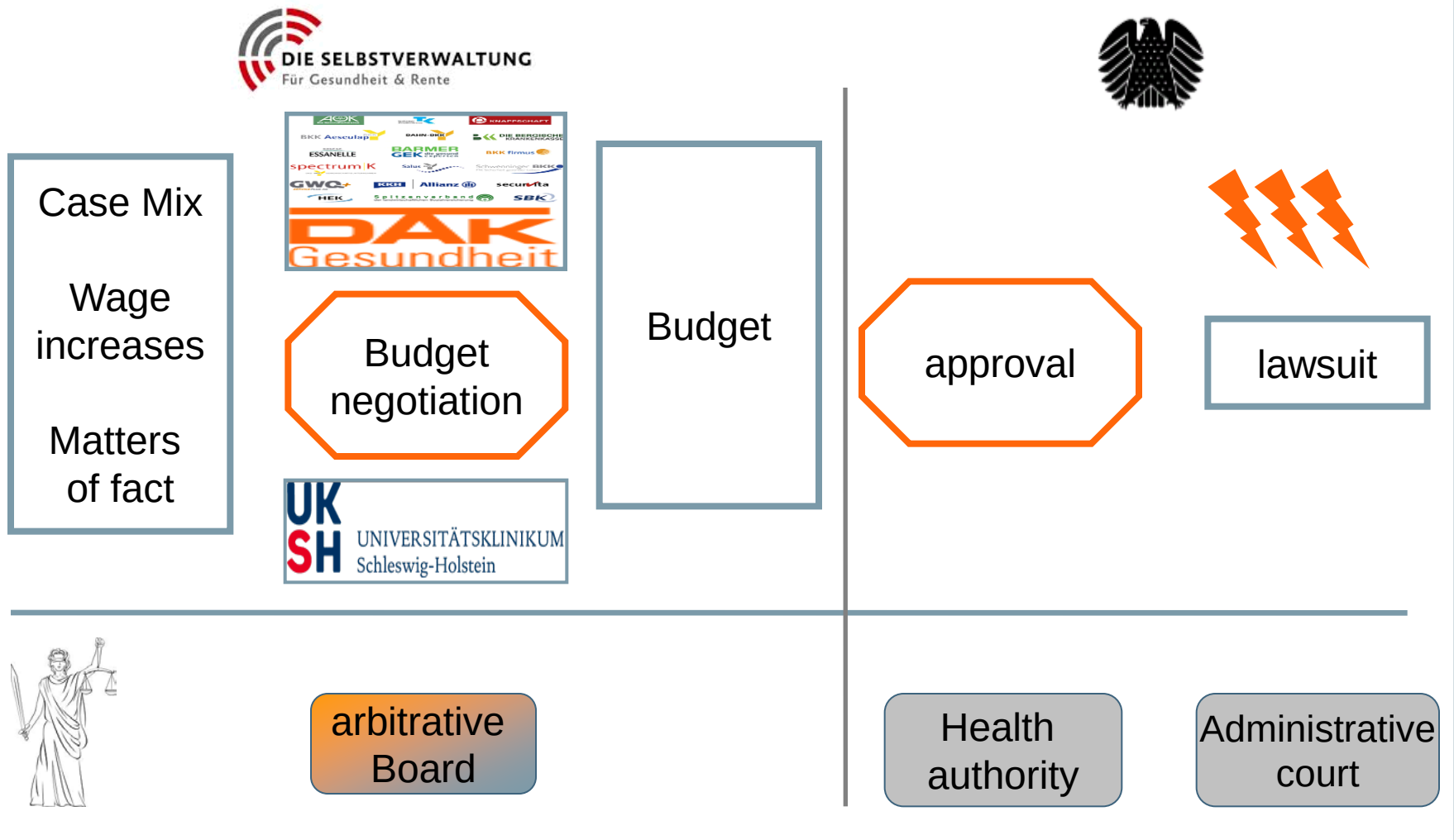
Ebene: DRG
 Abteil. Typ:
 MDC-Filer:
 Rubrik:
 Komplexbeh.:
 Mindestmenge:

Fallzahl absolut				nom. BWR absolut				eff. BWR absolut				nom. CMI				eff. CMI			
Übert. VB 2010 Kat. 2011	IST 2010 Kat. 2011	Forderung 2011	IST 2011 (HR)	Übert. VB 2010 Kat. 2011	IST 2010 Kat. 2011	Forderung 2011	IST 2011 (HR)	Übert. VB 2010 Kat. 2011	IST 2010 Kat. 2011	Forderung 2011	IST 2011 (HR)	Übert. VB 2010 Kat. 2011	IST 2010 Kat. 2011	Forderung 2011	IST 2011 (HR)	Übert. VB 2010 Kat. 2011	IST 2010 Kat. 2011	Forderung 2011	IST 2011 (HR)
23.710	19.778	23.796	51.558	26.043.085	20.486.066	26.160.588	56.681.274	26.297.381	56.977.659	1.098	1.036	1.099	1.099	1.099	1.099	1.099	1.099	1.099	1.099
23.710	19.778	23.796	51.558	26.043.085	20.486.066	26.160.588	56.681.274	26.297.381	56.977.659	1.098	1.036	1.099	1.099	1.099	1.099	1.099	1.099	1.099	1.099
DRG	Reis	DRG Bezeichnung	nom. BWR																
901A	1	Ausgedehnte OR-Procedure ohne Bezug zur	5.760	1	1	1	2	5.745	5.747	5.760	11.167	4.320	5.760	5.760	5.760	5.760	5.760	5.760	5.760
901B	1	Ausgedehnte OR-Procedure ohne Bezug zur	3.617	3	3	7	15	10.794	10.157	25.319	24.650	25.678	55.630	3.617	3.617	3.617	3.617	3.617	3.617
901C	1	Ausgedehnte OR-Procedure ohne Bezug zur	2.992	1	3	3	7	2.912	8.590	9.078	19.448	10.951	23.727	2.992	2.992	2.992	2.992	2.992	2.992
901D	1	Ausgedehnte OR-Procedure ohne Bezug zur	2.146	23	29	45	97	40.130	59.705	109.105	36.894	109.270	2.146	2.146	2.146	2.146	2.146	2.146	2.146
902Z	1	Nicht ausgedehnte OR-Procedure ohne Bezug	1.942	5	9	39	72	7.714	13.672	50.899	110.253	11.290	111.345	1.942	1.942	1.942	1.942	1.942	1.942
A06A	1	Beatmung > 1799 Stunden mit komplexer OR	65.063	4	1	1	2	260.552	65.063	140.970	65.063	65.063	140.970	65.063	65.063	65.063	65.063	65.063	65.063
A06B	1	Beatmung > 1799 Stunden mit komplexer OR	48.538	1	2	1	2	48.538	97.878	48.538	100.166	88.478	150.538	48.538	48.538	48.538	48.538	48.538	48.538
A07A	1	Beatmung > 999 und < 1000 Stunden mit kom	41.221	1	1	1	2	41.221	41.221	89.312	41.221	41.221	89.312	41.221	41.221	41.221	41.221	41.221	41.221
A07B	1	Beatmung > 999 und < 1000 Stunden mit kom	34.112	1	2	1	2	34.112	67.060	34.112	73.000	34.112	73.000	34.112	34.112	34.112	34.112	34.112	34.112
A07C	1	Beatmung > 999 und < 1000 Stunden mit kom	29.251	5	2	1	2	146.089	58.435	29.251	63.377	29.251	63.377	29.251	29.251	29.251	29.251	29.251	29.251
A07D	1	Beatmung > 999 und < 1000 Stunden ohne kt	24.241	0	0	0	0	0,121	0,242	22.684	49.149	21.523	46.833	24.241	24.241	22.684	22.684	21.523	21.523
A07E	1	Beatmung > 999 und < 1000 Stunden ohne kt	22.684	1	1	1	2	22.684	22.684	49.149	49.149	21.523	46.833	22.684	22.684	22.684	22.684	21.523	21.523
A08A	1	Beatmung > 499 und < 1000 Stunden mit kom	27.508	1	1	1	2	27.508	58.801	27.508	77.508	27.508	58.801	27.508	27.508	27.508	27.508	27.508	27.508
A09D	1	Beatmung > 499 und < 1000 Stunden mit kom	23.397	1	5	5	11	23.919	116.035	116.805	253.460	124.297	269.310	23.397	23.397	23.397	23.397	23.397	23.397
A09C	1	Beatmung > 499 und < 1000 Stunden mit kom	19.883	11	7	9	20	202.278	129.258	160.947	368.210	183.028	398.511	19.883	19.883	19.883	19.883	19.883	19.883
A09D	1	Beatmung > 499 und < 1000 Stunden ohne kt	17.098	4	2	2	4	67.622	33.900	34.172	74.039	34.172	74.039	17.098	17.098	17.098	17.098	17.098	17.098
A09E	1	Beatmung > 499 und < 1000 Stunden ohne kt	14.549	0	2	2	4	6.881	28.854	29.098	63.046	26.445	57.296	14.549	14.549	14.549	14.549	14.549	14.549
A09F	1	Beatmung > 499 und < 1000 Stunden ohne kt	12.228	1	1	1	2	12.228	12.228	12.228	26.494	12.228	26.494	12.228	12.228	12.228	12.228	12.228	12.228
A11A	1	Beatmung > 249 und < 500 Stunden mit hoch	18.507	4	5	11	73.100	87.535	200.493	117.105	253.726	18.507	18.507	18.507	18.507	18.507	18.507	18.507	18.507
A11D	1	Beatmung > 249 und < 500 Stunden mit kom	13.705	3	9	3	7	41.623	123.203	41.355	89.003	48.342	104.741	13.705	13.705	13.705	13.705	13.705	13.705
A11C	1	Beatmung > 249 und < 500 Stunden ohne kt	12.309	5	4	4	9	60.815	48.672	49.238	106.878	71.844	153.920	12.309	12.309	12.309	12.309	12.309	12.309
A11D	1	Beatmung > 249 und < 500 Stunden mit kom	11.836	1	8	7	15	12.057	93.294	89.796	174.990	81.382	176.263	11.836	11.836	11.836	11.836	11.836	11.836
A11E	1	Beatmung > 249 und < 500 Stunden ohne kt	10.955	7	6	11	24	75.541	64.723	120.505	261.094	132.115	286.249	10.955	10.955	10.955	10.955	10.955	10.955
A11F	1	Beatmung > 249 und < 500 Stunden ohne kt	8.699	4	2	3	7	35.257	17.773	26.097	56.544	26.097	56.544	8.699	8.699	8.699	8.699	8.699	8.699
A11G	1	Beatmung > 249 und < 500 Stunden ohne kt	7.741	0	4	1	2	0.063	56.268	7.741	15.888	7.741	15.888	7.741	7.741	7.741	7.741	7.741	7.741
A13A	1	Beatmung > 95 und < 250 Stunden mit hoch	12.790	4	2	4	9	51.020	25.559	51.160	110.847	65.650	142.242	12.790	12.790	12.790	12.790	12.790	12.790

- In accordance to healthcare mandate?
- Changes in case mix / amount of cases feasible?
- Budget increase within legal limits?

- unpriced DRGs
- unpriced Surcharges (ZE)
- NUBs

Aim is an agreement within the „Selbstverwaltung“



To take home – Budget negotiation

- Highly regulated, standardized and sophisticated process
- supported from many agencies / bodies
- Main effort and consumption of negotiation resources in specialized areas and through changes by law / Acts (Hygiene, Nursing staff, increase in wages)

3. Overcoming the problems of „Silo-Thinking“

The Problem: A good Technology bringing value to „single players in the game“: Heart Failure Monitoring as example



Telecardiology Monitoring is a common technology proven in single trials with different target groups.

The technology here is brought to EF (ejection fraction) patient of lower than 45% and performs:

- Daily measures of patients weight
- Daily measure of blood pressure
- Weekly submission of an ECG
- Routine Calls



The Value of the Technology – indicated in number of yearly hospitalisations, Length of Stay and Budget needed to treat

USA	without Monitoring p.a.			with Monitoring p.a.		
	LOS	HOSP	Cost	LOS	HOSP	Cost
Heidenreich	5	3,4	15.040 €	2,53	1,9	5.920 €
Anthony	n.a.	1,83	17.276 €	4,81	0,69	5.990 €
Bondmass	16,17	3,08	29.357 €	4,38	0,92	7.153 €
Mean	10,58	2,77	20.558 €	3,90	1,17	6.354 €

GER	without Monitoring p.a.			with Monitoring p.a.		
	LOS	HOSP	Cost	LOS	HOSP	Cost
TKK	23,94	0,41	7.492 €	10,6	0,25	4.584 €
KKH	n.a.	n.a.	17.425 €	n.a.	n.a.	6.883 €
Mean	23,94	0,41	12.458,50 €	10,60	0,25	5.733,50 €

Due to a split of ambulatory care and stationary care using the technology means a loss for the hospital.

What is in for the hospital? What is in for the payor?
 Example of the different views for the telecardiology technology

Kostengerüste mit und ohne Telemedizin

	6.731,00 €	Kosten für HI Patienten p.a. ohne Telemonitoring
	4.651,00 €	KH Erlöse / Umsatz
	400,00 €	Medikamente
	900,00 €	Reha
	780,00 €	Ambulant
	- €	Kosten Telemonitoring
	4.464,96 €	Kosten KH Behandlung intern

	1.410,50 €		5.320,50 €	Kosten für HI Patienten p.a. mit Telemonitoring
-	2.325,50		2.325,50 €	KH Erlöse / Umsatz
	100,00 €		500,00 €	Medikamente
-	100,00 €		800,00 €	Reha
	265,00 €		1.045,00 €	Ambulant
	650,00 €		650,00 €	Kosten Telemonitoring
			2.232,48 €	Kosten KH Behandlung intern

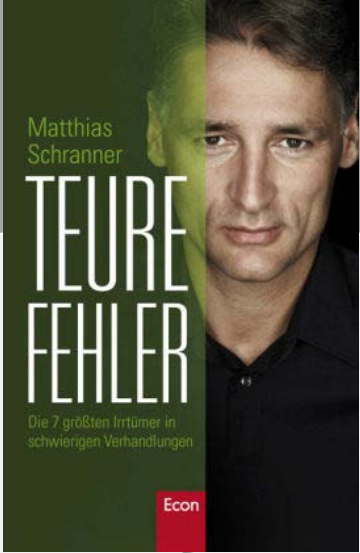
4. „Gaming“ as part of the solution: DAK and UKSH do negotiation simulations to find new ways of cooperation

The Negotiation Game

2010 – 2011 – 2012 - 2013



The negotiation Game takes part over a whole day ...

	Rezeption	Planspielräume
8.00h		
8.30h		
9.00h		Begrüßung und Einführung 9.00h bis 10.00h: ALLE 9.00- 9.05h Begrüßung durch Vertreter des UKSH 9.05 -9.15h Begrüßung durch Kai Jürgensen (AOK) im Namen der Kassen 9.15-9.35h Einführung durch Ch. Elsner (UKSH) in Fall & Planspielablauf 9.35-9.55h Einführung durch Jörg Manthey (TK) in Budgetsystematiken 9.55-10.00h Aufteilung der Teams
9.30h		
10.00h		
10.30h		
11.00h	Ausstellung der Partner	10.00-10.30h BRIEFING DER TEAMS MIT TUTOREN
11.30h		10.30-11.45h VERHANDLUNG TEAMS IN RÄUMEN OFFENES HANDELN GGF. BEGEHUNG DURCH JURY
11.45h		
12.00h	11.45h – 12.45h MITTAG ALLE	

Starting up with the briefing and splitting into groups ...



... preparing in the separate discussion rooms



And „in the arena“ for the negotiation process



... the negotiation is evaluated in a strict structured way

EVALUATIONFORM, EACH 0-5 POINTS

- Struktur der Verhandlung
- Zeitmanagement in der Verhandlung
- Korrektheit des Rechenansatzes im Modell
- Innovationsgrad des Vorschlags
- Erzieltes Verhandlungsergebnis
- 0 Summe

Team #	
Partei	
Platz	

	Ergebnis in Euro
	Patientennutzen in QALYs p.a.

... the negotiation is evaluated in a strict structured way

	Krankenhaus		Krankenkasse	
	Parameter	Wert	Parameter	Wert
Leistungsmenge Rechnung ohne HERZ	2,50%	250.000,00 €	2,50%	- 250.000,00 €
Leistungsmenge echte Steigerung MIT HERZ	4,50%			
Leistungsmenge Steigerung VERHANDELT	2,50%		2,50%	
Erlösausgleich (KH -> KK)	65%		65%	
Einführung Software	ja	- 50.000 €	ja	135.000 €
Umsatz aus HERZ Vertrag IV im KH	ja	200.000 €	ja	- 200.000 €
Gewinn aus MEIN HERZ PATIENTEN	ja	32.702,64 €		74.629,11 €
		432.702,64 €		- 240.370,89 €
Sonstige Angaben und Werte				
Ausgangssumme Budget Vorjahr 2010		10.000.000 €		
Fallzahl		3000		
Echte bekannte Steigerung des KH		4,5%		
Kosten für IT Umstellung		50.000,00 €		
Notwendiges Mindestergebnis KH		420.000,00 €		
Notwendiges Mindestergebnis KK	-	250.000,00 €		

For the thrid time with guests from all over Germany ...

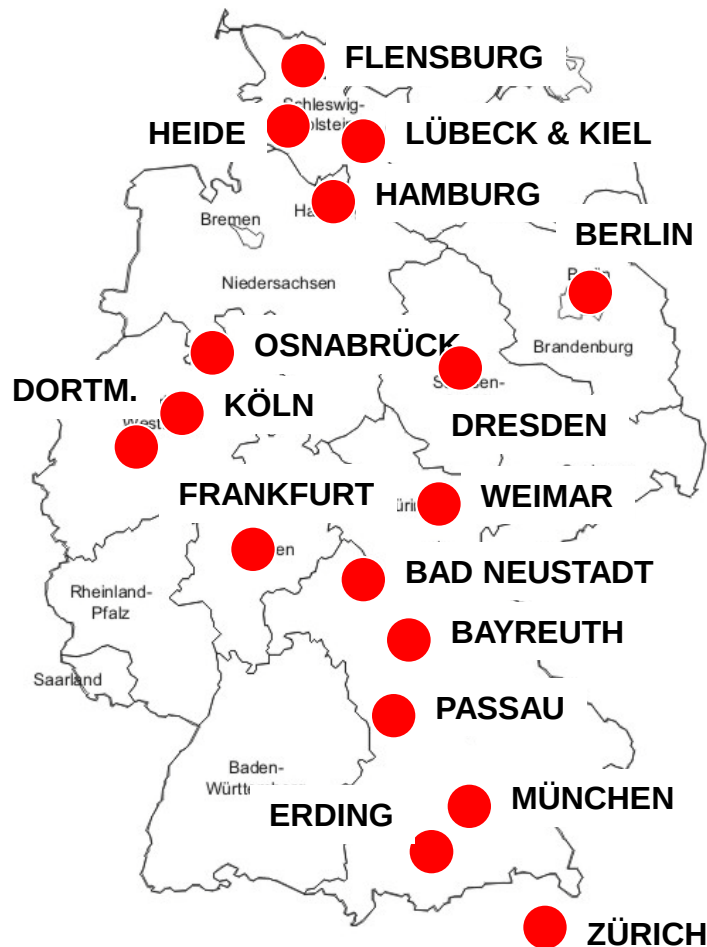
Supporters



Guests



For the thrid time with guests from all over Germany ...



Until today

121 active participants

... 22 teams

... 11 negotiations

... 17 cities

... 19 Companies and Universities

6. Backup Slides

X. How to select and value individual contracts between payor and hospital

Modell - Test

1 identify

2008 2009 2010
 Predictive variables Predictive variables Target variable

**Who deteriorated
suffering from a specific
disease in 20XX**

identifies the
influence of Risk factors

2 validate

2009 2010 2011
 Predictive variables Predictive variables Target variable

- Calculating the risk using the identified risk factors
- Comparison of identified insureds at risk and incidence in population

Model - in use

3 identify

**Who is likely to deteriorate
with disease X in 2012**

- Regression identifies the influence of Risk factors
- Model is confirmed or rejected

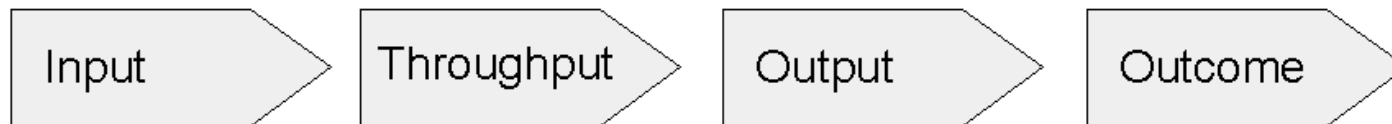
4 check

2010 2012
 Predictive variables Predictive variables Target variable

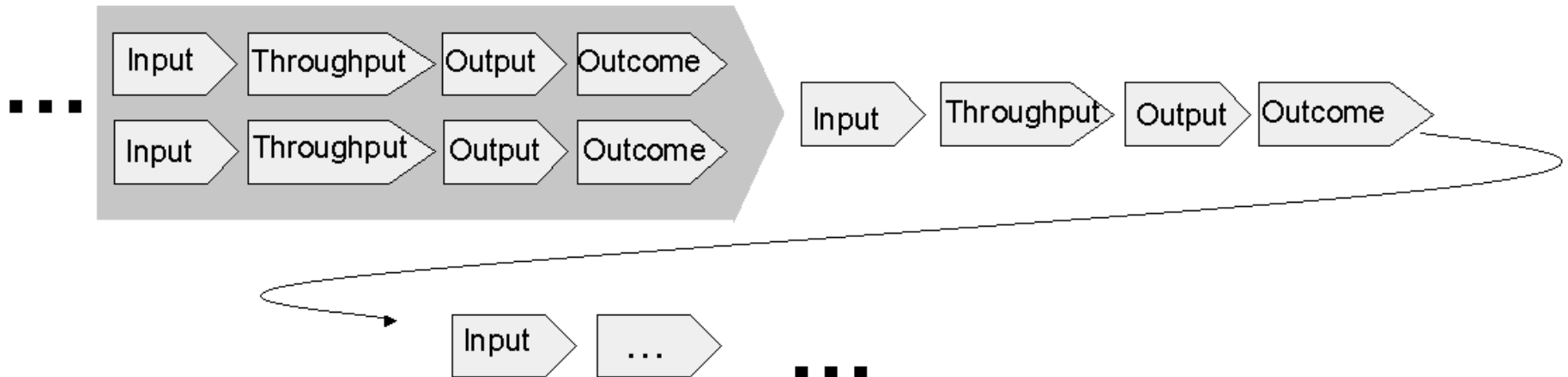
- Calculating the risk using 2011 data
- Identification of insureds who benefit from program

Complex interventions need appropriate tools for analysis

Plain one-dimensional intervention - RCT

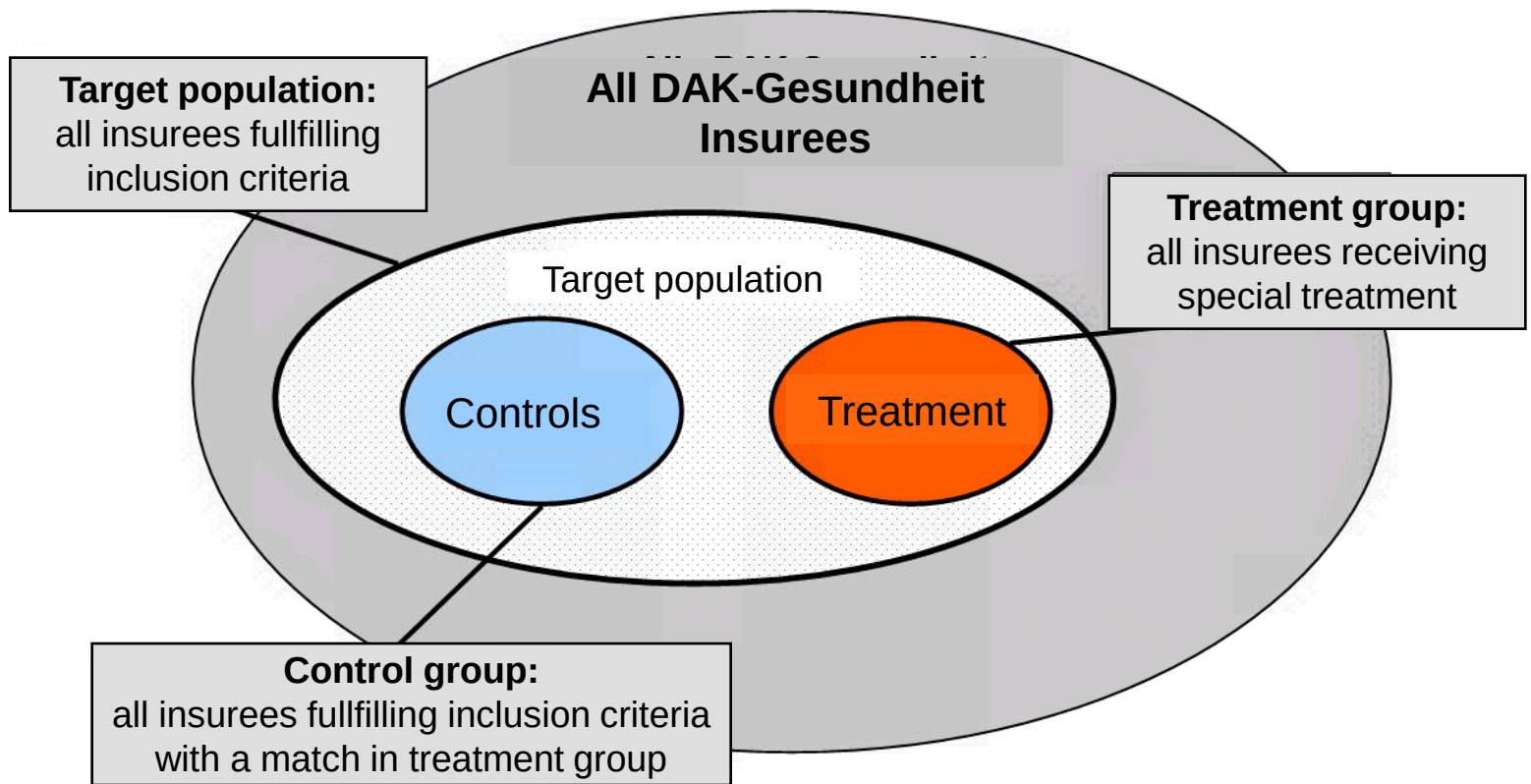


Complex multidimensional intervention - NIS



Defining controls in the „real world“

Target Population



How we evaluate contracts using propensity scores for matching

Data Preparation

definition Inclusion- criteria and covariables

calculation Propensity Scores

Matching Pairs

Estimate of Effects

Hospital



Px



Primary Care



adjuvants



Sick-Pay



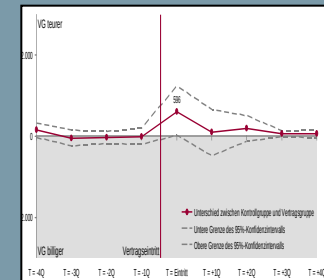
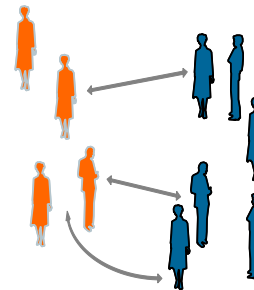
other



Existing
claims data

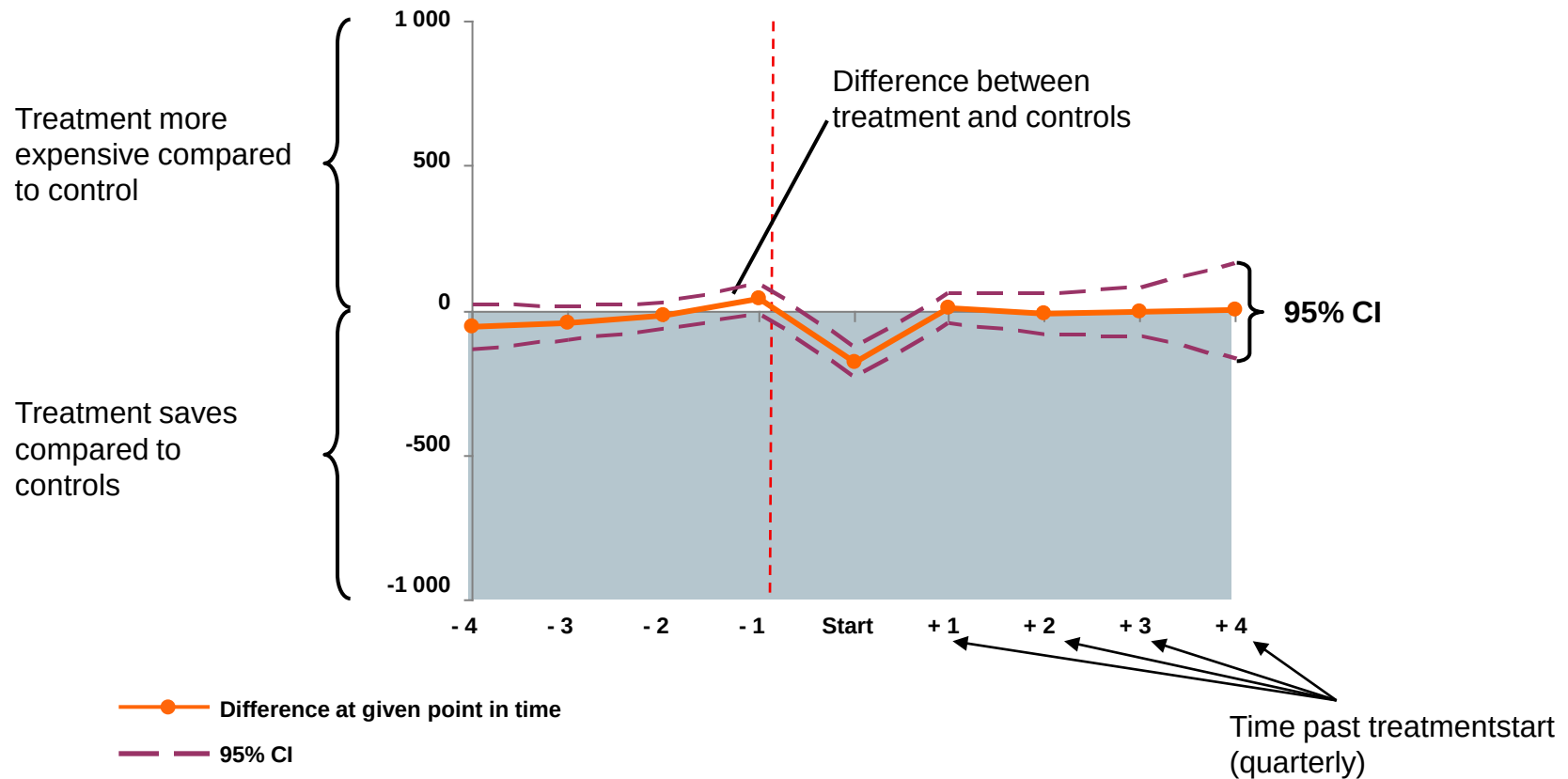
- Age
- Sex
- habitation
- Diagnosis
- Procedures
- Prescriptions
- historical
- etc.

$$P(Y_i = 1 | X_i = x_i) = \frac{\exp(x_i^T \beta)}{1 + \exp(x_i^T \beta)}$$



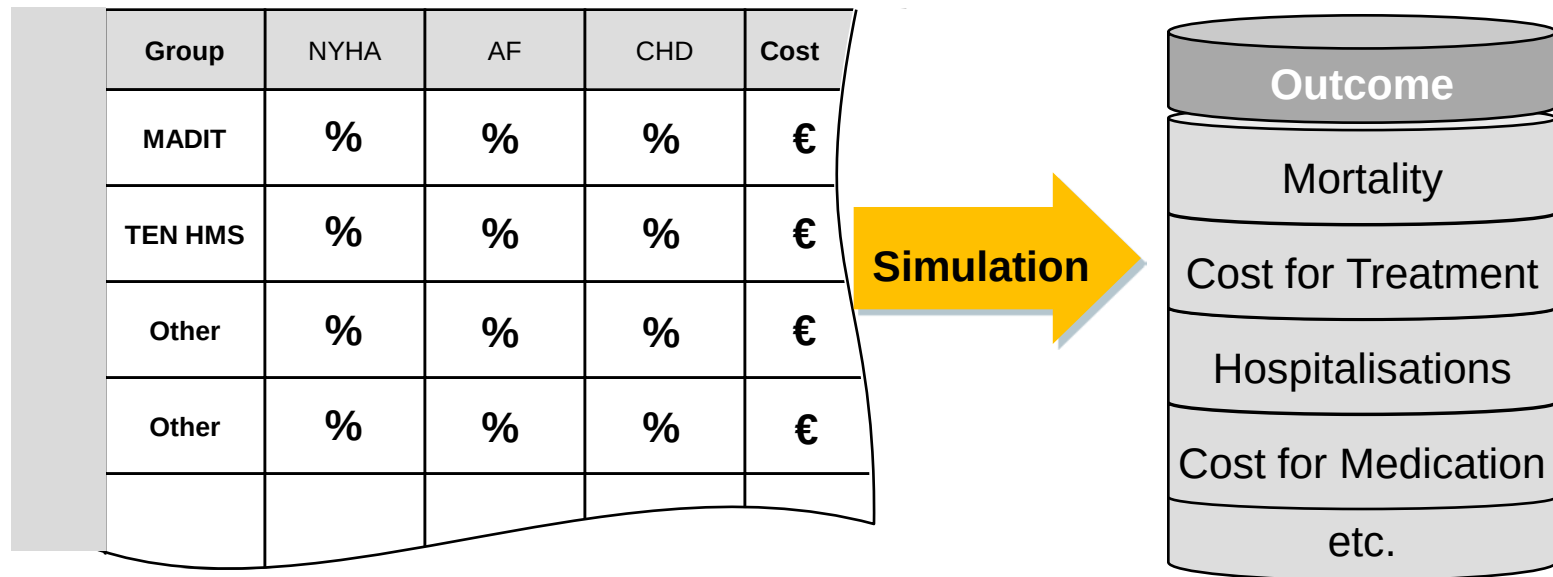
Illustrated Results ...

ILLUSTRATIVE



X. Information on „Mein Herz“

What was needed, was a simulation approach to define splitting of costs and benefits in the different segments



What is needed is a more broader approach: Some kind of Mix of different outcome studies. This way the value of a technology or measure can be applied to different populations and can produce different outcome views.

A possible solution: Risk-Sharing the Costs and Benefits

SPLIT		KOSTEN	GEWINN
	KH	50%	50%
	KK	50%	50%

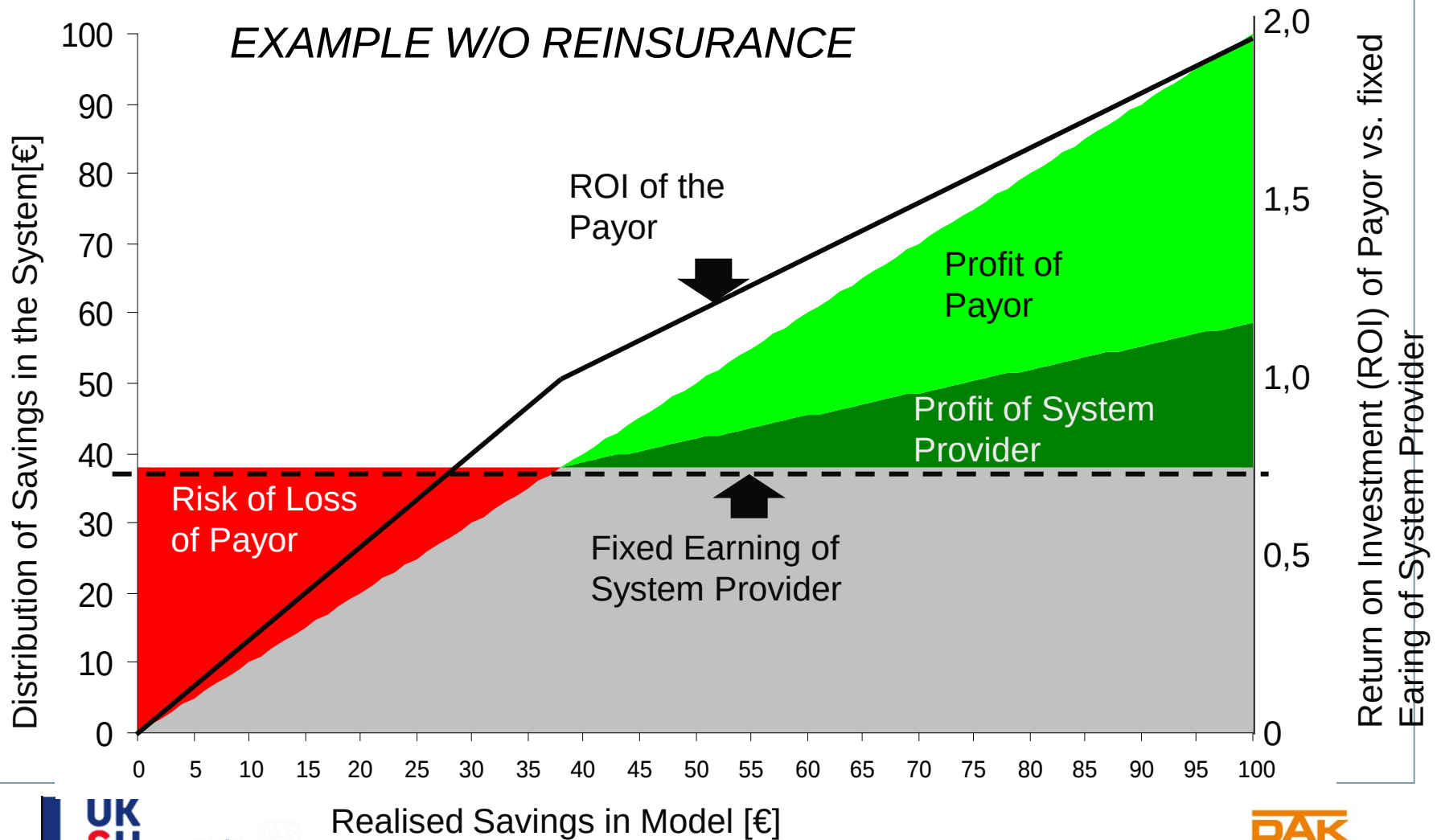
Fälle ohne T	43,00
Fälle mit T *	86,00

Gewinn KH	32.702,64 €
Gewinn KK	74.629,11 €

107.331,76 €

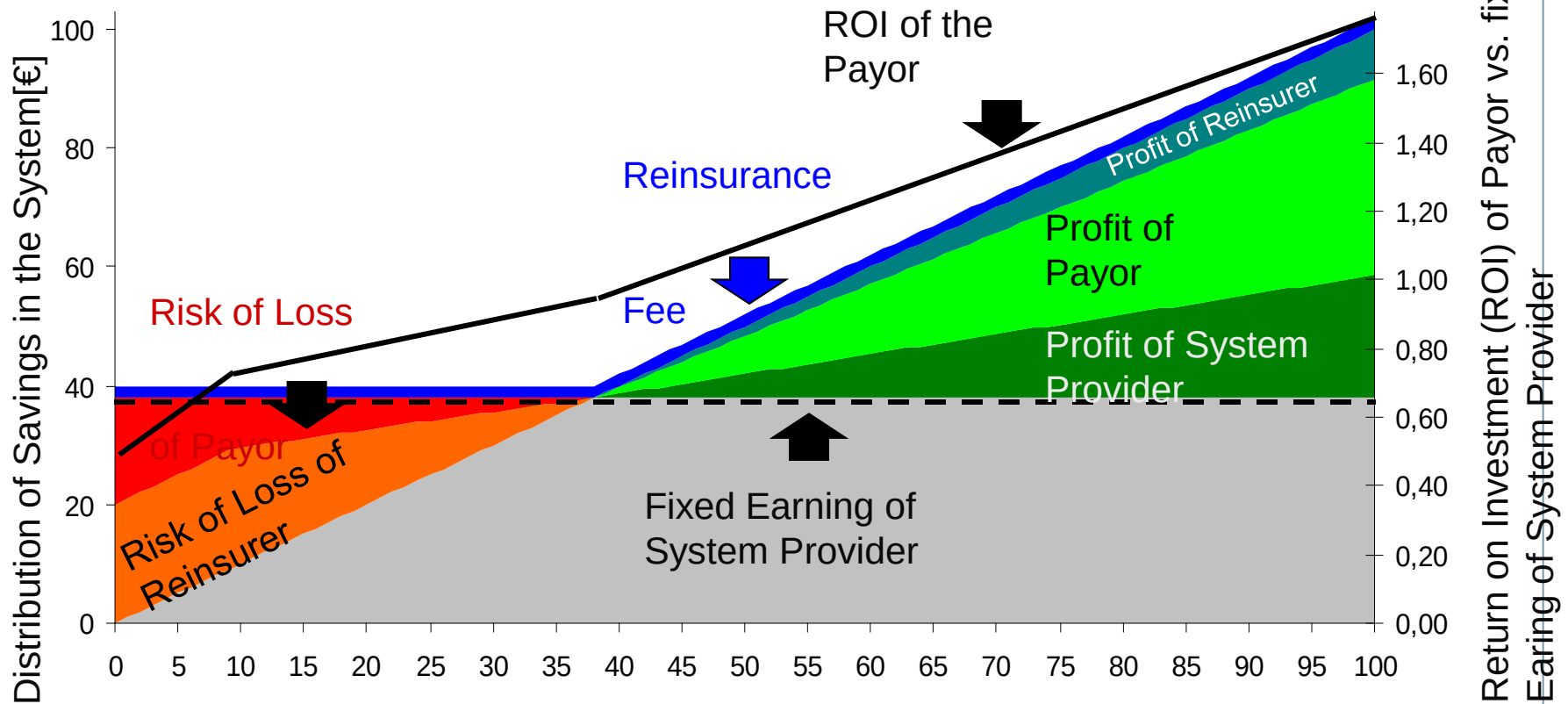
Gewinn KH als DELTA	Gewinn KH absolut	Erlöse des KH aus stationär	Erlöse des KH aus Telekardio	Gewinn der KK zum Ausgang	Kosten KK	TELE MEDIZIN	KOSTEN TRÄGT ...	GEWINN TRÄGT ...
- €	186,04 €	4.651,00 €	- €	- €	6.731,00 €	N	NA	NA
- 93,02 €	93,02 €	2.325,50 €	- €	1.410,50 €	5.320,50 €	J	KK	KK
- 743,02 €	- 556,98 €	2.325,50 €	- 650,00 €	2.060,50 €	4.670,50 €	J	KH	KK
287,23 €	473,27 €	2.325,50 €	380,25 €	867,75 €	4.995,50 €	J	SPLIT	SPLIT
1.317,48 €	1.503,52 €	2.325,50 €	1.410,50 €	- €	6.731,00 €	J	KK	KH

Without Reinsurance the payor has the maximum risk



A Reinsurance will clearly nivellate the risk of the payor ...

EXAMPLE WITH REINSURANCE



Realised Savings in Model [€]