

# Addressing the Staff Shortage and Ensuring Patient Safety in German Hospitals: The Role of Data Acquisition and Analysis

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## Introduction

- At least since 2000 increased shortages of nursing staff in German hospitals
  - Governmental funding programs in 2009 and 2016: ~10% new staff \*, but still more needed
- Situation: Since 2003, DRG-based per-case payment system (also covering nursing cost) in Germany, implemented and maintained by InEK
- Government adopted new measures for further improvement of patient safety
  - New tasks and responsibilities for InEK

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## New tasks and responsibilities of InEK

### Nursing staff limits

### Exclusion of care costs

### Other data related topics

2019

- Minimal nursing staff requirements

- Care revenue catalog

- Expanded data acquisition

2020

- Nursing staff ratio

- Care budget nursing

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2024

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## Minimum Nursing Staff Limits (MNSL)

### Methods

- Previous extra funding targeted recruitment of additional personnel
- Since 2018, the German government focussed on quality of patient care
- MNSL were introduced for care sensitive areas
  - Areas in which the outcome is especially dependent on nursing
  - Setting an upper limit for “patients per nurse” in care sensitive areas
  - Application of MNSL in more and more areas every year, growing data pool
  - Development of a “nursing staff ratio” as a hospital indicator
- InEK was commissioned

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## Minimum Nursing Staff Limits (MNSL)

### Care sensitive areas

- In 2019, the first care sensitive areas were:

intensive care	geriatrics	trauma surgery	cardiology
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- Identification by

- Department key, cases in indicator-DRGs (set by regulation). Example: A unit is considered to be cardiology if there is either a „cardiology“ department or a minimum number of cases in DRGs typical for cardiology.
- Based on **service data** according to Hospital Charges Act (§ 21 KHEntgG)\*, annually, including data about: structure, cases, diagnoses, operations and procedures, nursing staff...

\*Hospitals subject to the scope of the KHEntgG must transmit their service data to the InEK data center

## Minimum Nursing Staff Limits (MNSL)

### Data acquisition and monitoring compliance

- Quarterly data reports from hospitals with
  - numbers of cases and nursing staff per month
  - differentiated by: care sensitive areas, wards, shifts

care sensitive area	ward	month	shift	mean patients	mean nurses	actual PNR on that ward	PNR limit
intensive care	Station 1	january	day	7,90	3,94	1,99	2,5
intensive care	Station 1	january	night	8,00	3,06	2,61	3,5
geriatrics	Station 3	january	day	17,48	1,62	10,79	10
geriatrics	Station 3	january	night	17,74	1,00	17,74	20

PNR: patient to nurse ratio

# Minimum Nursing Staff Limits (MNSL)

## Further development of limits

- First limits set by regulation
- Optimised by InEK evaluation

2019	shift	patients per 1 nurse	
		regulation	InEK
intensive care	day	2,5	→ 2
	night	3,5	→ 3
geriatrics	day	10	10
	night	20	20
trauma surgery	day	10	10
	night	20	20
cardiology	day	12	→ 10
	night	24	→ 22

- Starting in 2019: data of some hospitals (selected by drawing) were acquired in order to calculate limits for new care sensitive areas
  - cardiac surgery, stroke unit, general surgery, internal medicine, neurology, pediatrics, neonatology, gynecology and obstetrics, orthopaedics,...
- Cycle of data acquisition, calculation of new limits and monitoring compliance

# Nursing staff ratio

„Bundes Klinik Atlas“: Hospital transparency register, since May 17

**Hospital comparison for procedure: „artificial knee joint“**

1 bis 3 / 3

Hospital 1 × Hospital 2 × Hospital 3 ×

Number of hospital cases

- Hospital 1: 1.858 very high (minimum quantity reached)
- Hospital 2: 1.102 very high (minimum quantity reached)
- Hospital 3: 946 very high (minimum quantity reached)

nursing staff ratio (reciprocal value, hospital-wide)

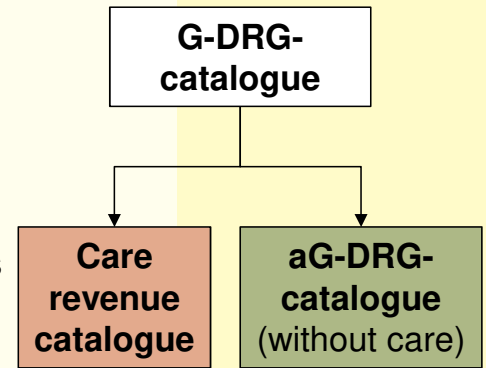
- Hospital 1: 43,00 above average
- Hospital 2: 44,01 above average
- Hospital 3: 37,47 far above average

- care load/nursing staff  
- based on service data

# Exclusion of care costs from G-DRG-System

Based on calculation data

- The **G-DRG catalogue** is calculated based on hospital calculation data, acquired annually by InEK
  - **Staff costs**, material costs and infrastructure costs on case level
- In 2019, the law to strengthen nursing staff set the exclusion of nursing remuneration from the G-DRGs
  - ➔ **Care revenue catalogue**
- Goal: remuneration of all care costs, independent of DRG averages

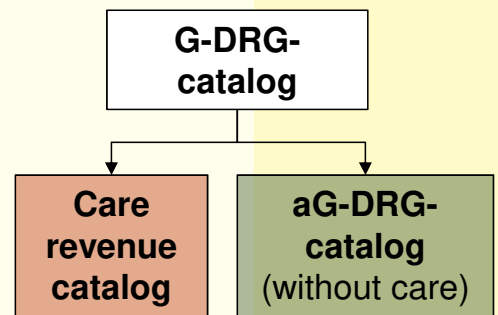


# Exclusion of care costs from G-DRG-System

Cost matrix, case level: DRG L60C Renal insufficiency

	staff costs			material costs						infrastructure costs	
	1 physicians	2 nursing	3 medical/technical	4a	4b	5	6a	6b	6c	7	8
1 wards	524,92	1.040,72	30,69	84,34	14,21		73,18	3,89	9,24	251,36	700,82
2 intensive care	140,91	269,95	3,22	23,50	4,86	0,28	41,42	0,80	0,50	46,96	125,63
3 dialysis	64,70	91,57	36,27	14,16	4,76		68,58	19,07	94,98	24,03	63,28
4 operating rooms	18,05		17,58	0,74	0,07	12,11	9,95	12,46	0,08	9,57	12,99
5 anaesthesia	15,52		10,93	0,74	0,07		9,95	0,01		9,96	4,43
6 delivery ward											
7 cardiac diagnostics / therapy	4,80		5,58	0,24							3,43
8 endoscopic diagnostics / therapy	17,30		19,15	0,80							11,96
9 radiology	34,07		35,30	0,68							21,59
10 laboratories	15,19		74,14	0,47			35,96	0,29	69,67	9,92	30,77
11 further diagnostics / therapy	41,95	0,23	27,00	0,66	0,02	0,17	4,22	1,43	1,29	6,49	15,45
12 therapeutic procedures	3,49	1,57	47,77	0,12			0,88	0,05	6,18	2,00	14,13
13 patient admissions	49,45	14,82	39,58	1,88	0,39		6,20		0,08	9,22	29,45
<b>Total costs</b>	<b>4.849,21</b>										
<b>Care costs</b>	<b>1.417,06</b>										
<b>Total costs without care</b>	<b>3.432,15</b>										

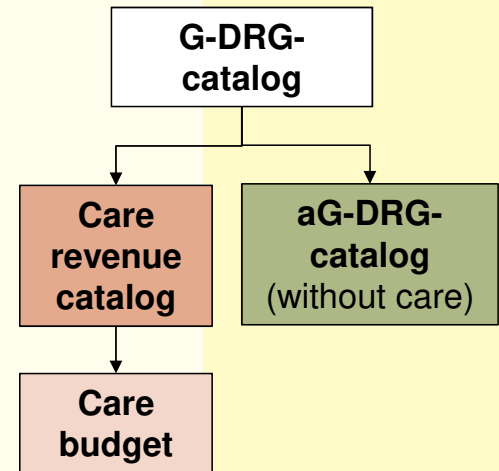
Exclusion of care costs



## Care Budget

### Remuneration uncoupled from G-DRGs

- Since 2020, agreement on a care budget between hospitals and health insurers\*
- Remuneration of all verified nursing staff costs
- Differentiated cost data acquisition
  - by nursing staff groups
  - of claim, negotiation and verified costs
- To ensure hospital liquidity, the negotiated care budget is paid out over the year through care revenues



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\*according to law to strengthen nursing staff

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## Combining data sets

### Basis for plausibility check

- Data acquisition is becoming increasingly important
- Data collection from > 1.600 german hospitals for solid data foundation
- By collecting, combining and analysing data, InEK can answer the questions:
  - How many nursing staff do we have per patient (MNSL and others)?
  - What are the associated costs (care budget)?
  - Is this data reliable (§21-service data and others)?
- ...or help to answer a patient's question:
  - Which hospital is suitable for my treatment?

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## New tasks and responsibilities of InEK

### Nursing staff limits

### Exclusion of care costs

### Other data related topics

2019

- MNSL

- Care revenue catalog

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- Care budget nursing

- COVID-19 bonus payments for nursing staff

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Change of paradigm in hospital planning: **Hospital reform**

2024

- PPR2.0 - assessment tool for nursing staff requirement determination (minute values per patient)

- Care budget midwives

- Hospital transparency register

- Data collection on physicians

- New hospital planning system with **hospital service groups**

2025

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## Thank you for your attention!

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