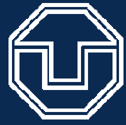


Faculty of Medicine Carl Gustav Carus, Public Health

# Costs of DRG-Upcoding due to the Introduction of the Diagnosis Related Groups in Germany

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# Presenter Disclosures

Tonio Schoenfelder

**(1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:**

"No relationships to disclose"

## 1 Introduction

- German health care reform: introduction of Diagnosis Related Groups (DRG) in 2004 to remunerate in-patient services.
- The new DRG-system replaced the existing retrospective system.
- Purpose:
  - First: to stabilize expenses
  - Second: to strengthen competition

# 1 Introduction

- In DRG-system, reimbursement is linked to the coding of services.

→ Represents an incentive for hospitals for complete and precise coding

→ May increase probability of incorrect coding to increase remuneration

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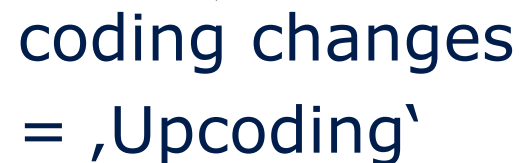
# 1 Introduction

Development of costs in German in-patient sector:

→2002, prior to DRG introduction: 54,7 billion €

→2006, after DRG introduction: 56 billion €

2 explantions:



real changes

coding changes
= ‚Upcoding'

# 1 Introduction

**Upcoding**

**Increased coding**

# 1 Introduction

Upcoding

Increased coding

Illegal coding

# 1 Introduction

**Upcoding**

Increased coding

**Illegal coding**

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## 2 Objective

- Excess of Upcoding expenditures has not been assessed yet for the German health care system

→ Objective: determine the costs of legal and incorrect Upcoding

# 3 Method

- Intensive literature research to identify studies concerning the extent of Upcoding
  - Three US-studies from the 80s when DRGs were introduced in the United States

| Year | Case-Mix-Index-Increase | | | Upcoding | | |
|---|---|---|---|---|---|---|
| | Carter [1] | Carter [2] | Goldfarb [3] | Carter [1] | Carter [2] | Goldfarb [3] |
| **1982** | | | 1,5% | | | 18,8% |
| **1983** | | | 2,0% | | | 67,9% |
| **1984** | 4,2% | 4,2% | 3,5% | | | 63,4% |
| **1985** | 3,0% | 3,0% | 3,0% | | | 73,3% |
| **1986** | 2,4% | 2,4% | 1,5% | | 24,1% | 42,5% |
| **1987** | 3,3% | 3,7% | | 30,3% | | |

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# 3 Method

| Year | Case-Mix-Index-Increase | | | Upcoding | | |
|---|---|---|---|---|---|---|
| | Carter[1] | Carter[2] | Goldfarb[3] | Carter[1] | Carter[2] | Goldfar [3] |
| **1982** | | | 1,5% | | | 18,8% |
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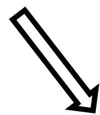
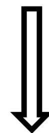
| **1985** | 3,0% | 3,0% | 3,0% | | | 73,3% |
| **1986** | 2,4% | 2,4% | 1,5% | | 24,1% | 42,5% |
| **1987** | 3,3% | 3,7% | | 30,3% | | |

# 3 Method

- Costs of the in-patient sector were provided by the Federal Statistical Office of Germany (Destatis)
- Development of costs until 2009 was calculated by using the data from 2004 to 2006
- 3 scenarios used for annually cost increase:

Average, the lowest, and the highest

1.37%        0.9%        2.3%

# 3 Method

| Year | Health care costs (in billion €) | | |
|---|---|---|---|
| **Increase by** | **0.9%** | **1.37%** | **2.3%** |
| **2004** | 56.20 | 56.20 | 56.20 |
| **2005** | 56.80 | 56.80 | 56.80 |
| **2006** | 58.00 | 58.00 | 58.00 |
| **2007** | 58.52 | 58.79 | 59.33 |
| **2008** | 59.05 | 59.60 | 60.70 |
| **2009** | 59.58 | 60.42 | 62.09 |

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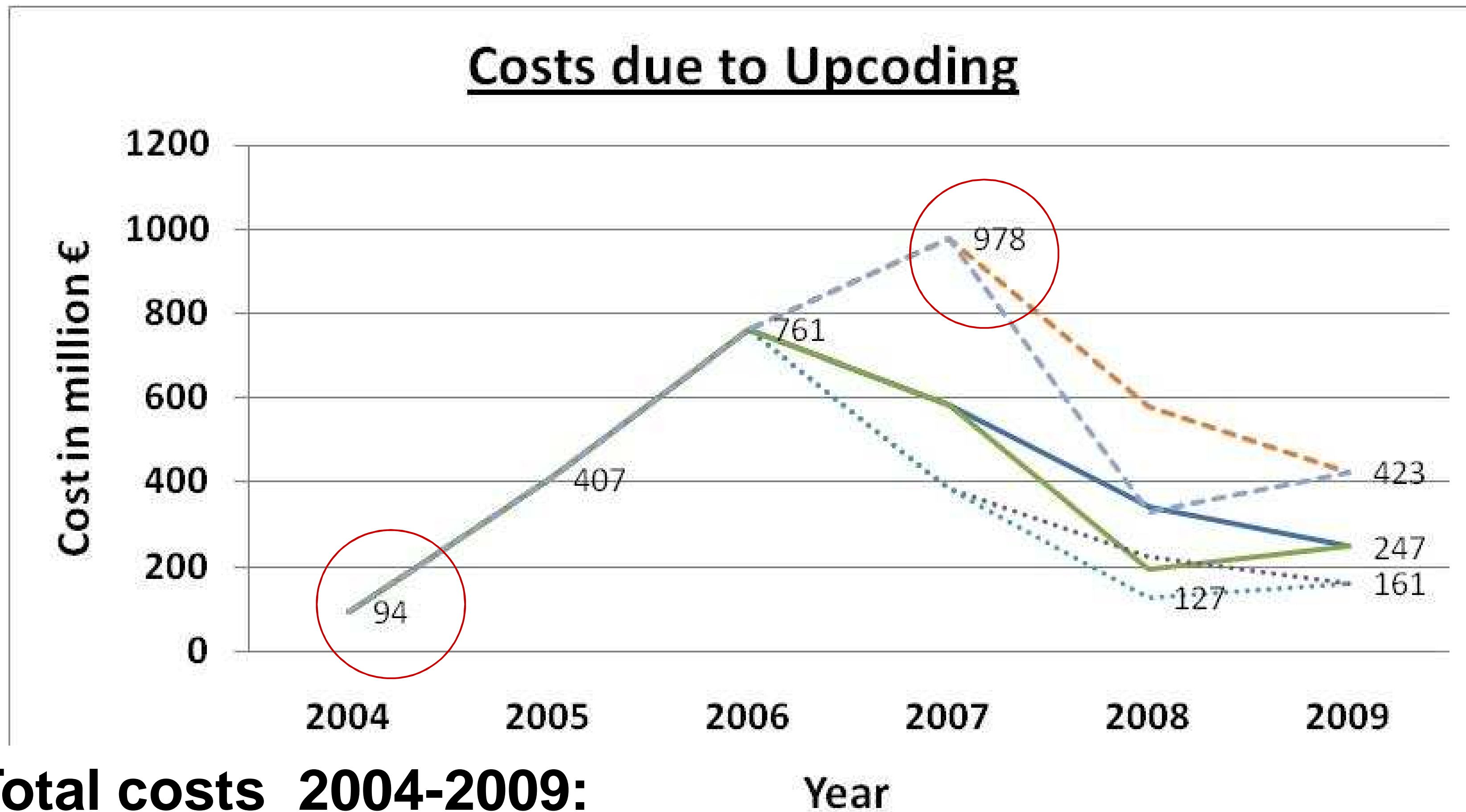
# 4 Results




**Total costs 2004-2009:**
**1.9 to 3.4 billion €**

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# 4 Results

| Year | Cost of incorrect Upcoding (in million €) | | |
|---|---|---|---|
| **Increase by** | **0.9%** | **1.37%** | **2.3%** |
| **2008 (Carter et al.)** | 224 | 342 | 580 |
| **2008 (Goldfard)** | 127 | 194 | 329 |
| **2009** | 161 | 247 | 423 |
| ∑ | **288 to 385** | **441 to 589** | **752 to 1.003** |

## 5 Discussion

- An overview of upcoding costs can be drawn from these calculations.
- Data regarding illegal upcoding are of interest

→ Cost do not create additional benefit for patients or the health care system

→ Waste of resources

- Results show that the maximum of costs has aleady been reached
- To gain the exact upcoding costs in Germany, additional analyses are required

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## 6 References

[1] Carter G, Newhouse J, Relles D. How much Change in the Case Mix is DRG- Creep?. Journal of Health Economics 1990, 9: 411-428

[2] Carter G, Newhouse J, Relles D.: Has DRG-Creep crept us?, Decomposing The Case Mix Change Between 1987 and 1988, RAND Publication Series, RAND, Santa Monica, 1991

[3] Goldfarb G, Coffey R. Change in the Medicare case-mix index in the 1980s and the effect of the prospective payment system. Health Services Research 1992, 27: 385-415

# Thank you for your attention