

Why It Is So Difficult to Calculate Bundled Payments. Learnings From a Practical Case in Germany

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OBJECTIVES AND BACKGROUND

The system of providing health services in Germany is characterized by sectoral boundaries between ambulatory and stationary care with distinct reimbursement arrangements between care providers and insurers. These different reimbursement systems generate differing incentives for over- and underuse and lead to a barrier in cross-sectoral care, which plays a significant role in the care of various diseases, including heart failure. The goal of the project sektOR-HF funded by the innovations funds (Innovationsfonds) of the Federal Joint Committee (G-BA) is to reduce the sectoral gap by establishing a network of care providers and a coordinative body to improve the referral of patients from ambulatory to stationary and back. One component of the project is the exploration of the reimbursement model "Bundled Payment" for patients with heart failure. It provides incentives for cost-efficient and high-quality care by harmonizing incentives for service providers through a contractual commitment.

- Bundled payment to incentivize
- Cross-sectoral care

Service providers receive a budget for the care of a group of patients over an episode. This budget is managed by one actor who bears the economic risk and thus has the incentive to organize the care efficiently across sectors. Budgetary profits or losses are shared among providers according to a profit/loss ratio agreed upon when the contract is signed. This results in an incentive to provide high-quality cross-sectoral care without sacrificing medically necessary services.

BUNDLE PRICES

Based on these design elements, four different design options were developed, with bundle prices between 2.026€ and 6.112 €. Because extreme inpatient cases can cost between 32- to 63-times of the average



- NYHA-grades oriented bundle prices

case (maximal factor), depending on the bundle, analyses without extreme costs – excluding costs

above the 99th percentile – were carried out. They resulted in a maximal factor between 5 to 16. The following table provides information on costs for design options without cost outliers.

Option	NYHA Bundle	Price (=mean costs)	Max. inpatient costs	Max. factor (Max. costs/ Mean costs)
Option 1 „NYHA-specific bundles“	1	2.026 €	32.579 €	16
	2	2.573 €	33.373 €	13
	3	4.327 €	33.434 €	8
	4	6.112 €	33.457 €	5
Option 2 „Outpatient and inpatient care packages“	1&2	2.416 €	33.373 €	14
	3&4	5.016 €	33.457 €	7
Option 3 „Revolving door“	1	2.026 €	32.579 €	16
	2&3	3.444 €	33.434 €	10
	4	6.112 €	33.457 €	5
Option 4 „Comprehensive Bundled Payment“	all	3.805 €	33.457 €	9

METHODS

Firstly, a structured literature search was conducted to review international literature, and clinical experts and international bundled payment experts were interviewed. On that basis, we defined the scope of four distinct bundled payments designs. Subsequently, using anonymized claims data from the InGef research database with over six million SHI-insured patients, exploratory data analyses were performed to simulate the costs of care for the four designs.

- Structured literature review
- Expert interviews
- Explorative SHI claims data analysis

DISCUSSION AND CONCLUSION

This research is one of the first applications using real world data to assess the feasibility and practical implications of bundled payments for heart failure in Germany. It is necessary to further explore potential bundle breakers and carefully assess which situations can lead to extreme inpatient costs. In a next step, high-cost prediction models will therefore be performed to determine the influence of different variables on high costs, which were identified from a structured literature review. Therewith, risk-adjusted marginal cost will be calculated. As last step, a simulation of the designed bundles will be performed using the sektOR-HF population of patients with heart failure.



- High-cost prediction models
- Risk-adjusted marginal costs

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BUNDLED PAYMENT DESIGN ELEMENTS

One of the key elements in the design of a bundle is the definition of an episode of care. For chronic diseases such as heart failure, it is advisable to define a specific time reference such as a calendar year. Subsequently, services to be included and excluded must be agreed upon. In the present project, these are limited to outpatient care and disease-associated inpatient care. Other care costs were excluded since the complexity of contract design increases with the number of care providers to be included. Furthermore, the heterogeneity of patients to be included has to be considered. We found that insurers' cost for outpatient care remains stable with increasing disease severity. However, inpatient care costs increase significantly with the disease stage defined by the New York Heart Association (NYHA).

- Episode of care
- Included care services
- Patients

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Conflicts of interest

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