

DRG based payment: the impact on quality and efficiency

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DRGs as a payment mechanism



- The most common mechanism for reimbursing hospitals in Europe
- Despite different DRG models, countries share common objectives in moving to activity-based funding:
 - enhancing transparency
 - increasing efficiency
 - improving quality of care
- What is the theory behind this?
- What is the evidence?
- And what are the key issues, problems, challenges?

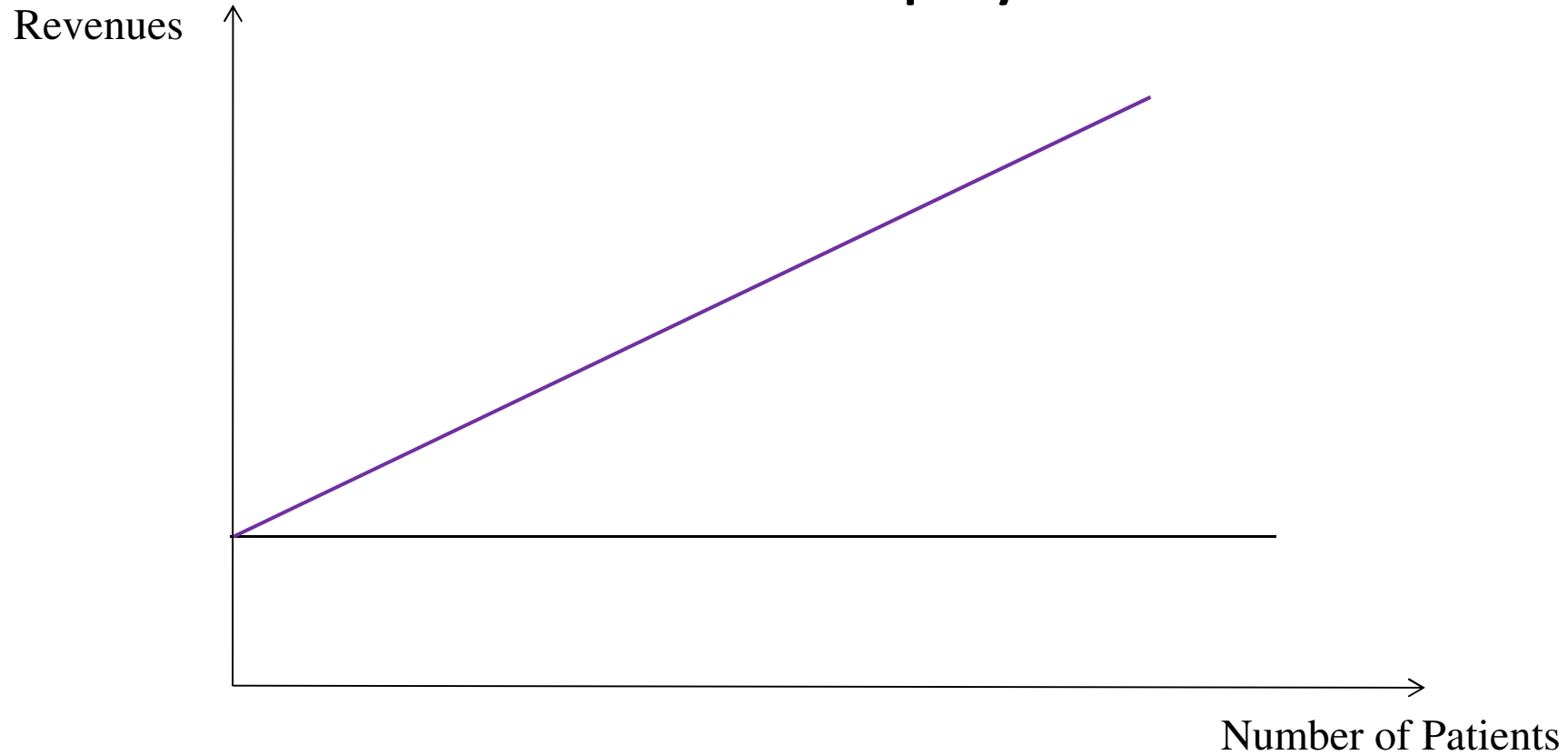
DRGs and efficiency: principles



- Establish a transparent link between funding and activity (described by homogeneous patient groups)
- A fixed price (ideally set independently of providers' costs) for unit of activity
- DRG payment is a form of “yard-stick” competition designed to encourage efficiency
- Efficiency has different aspects (needs to be defined): technical efficiency, cost efficiency and allocative efficiency (optimal output/input mix)



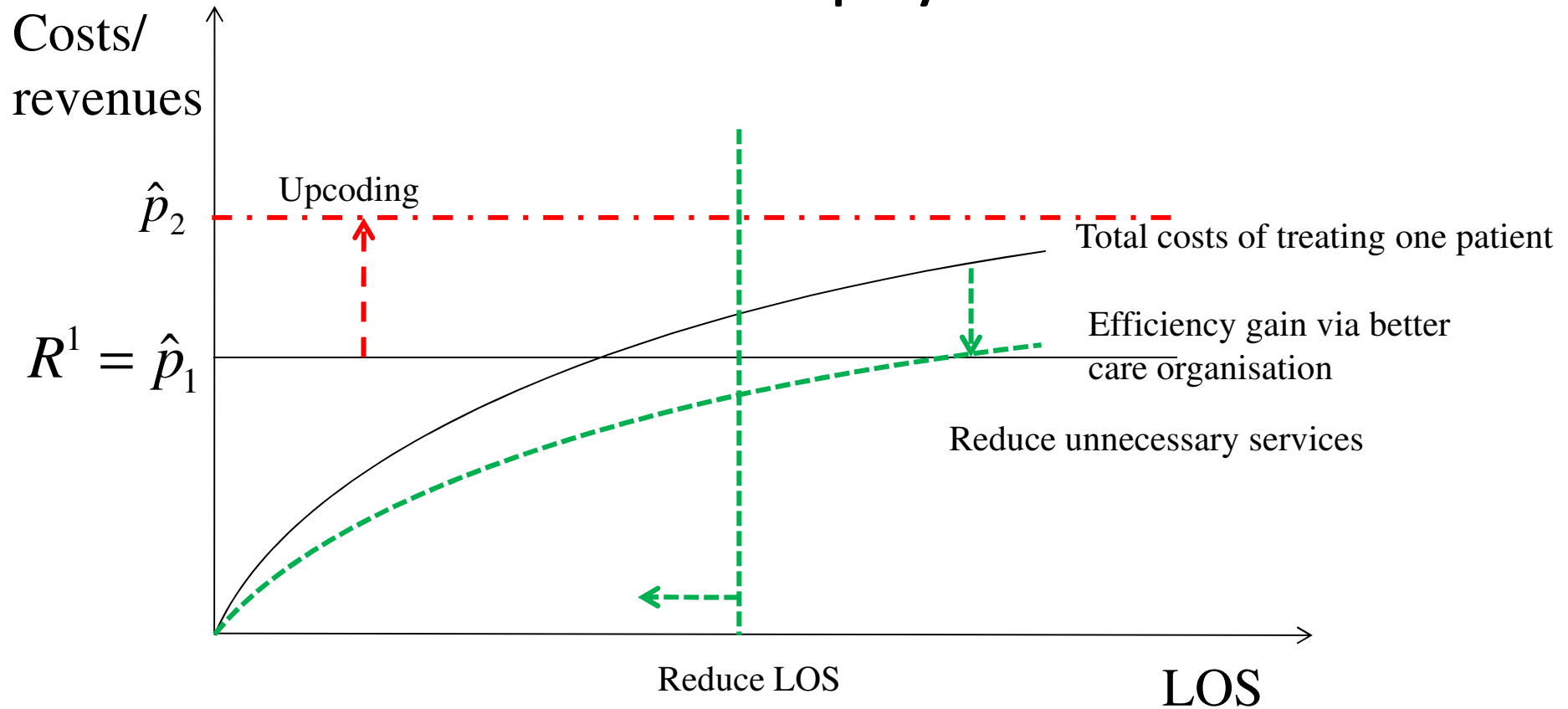
Incentives and hospital strategies under DRG payment



Hospital revenues under activity based payments



Incentives and hospital strategies under DRG payment



Options to avoid deficits under activity based payments

DRGs and efficiency: what to expect



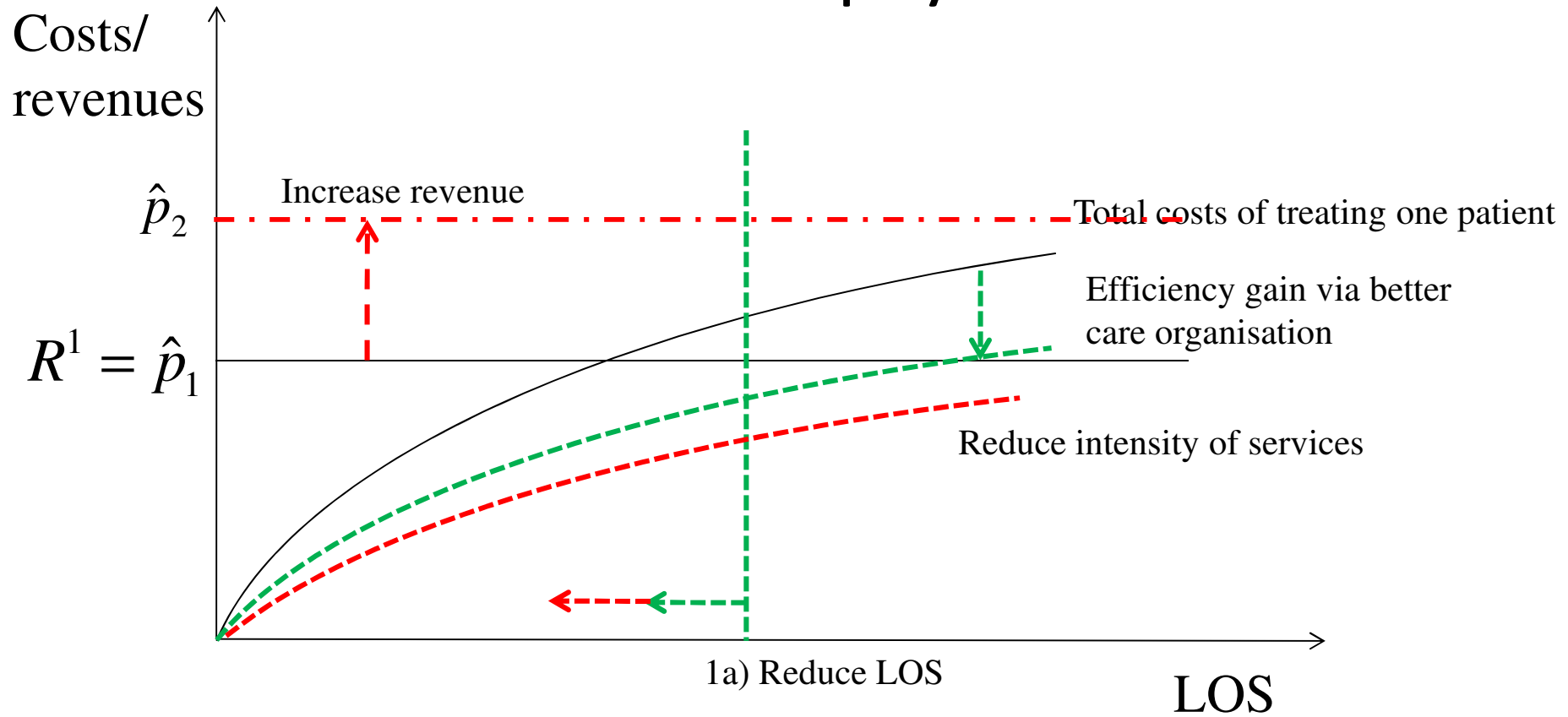
- Provide clear incentive to increase activity (absent under retrospective global budgets) for the same inputs
 - Better technical efficiency
- Provide direct incentives to minimize cost of hospital stay
 - Better cost efficiency
- Encourage providers to seek allocative efficiency in their choice of inputs
- Can promote efficient allocation of outputs if prices reflect their relative value
- Overall DRG based hospital payment provide stronger incentives for efficiency compared to the alternatives (FFS or retrospective global budgets)

DRGs and quality: what to expect

- *Quality*: any aspect of the service that benefits patients during the process of treatment or improves health outcome after treatment
- DRGs payment provide incentives to reduce the cost per stay irrespective of outcomes
- Hospitals can cut down unnecessary services & improve efficiency through organisational changes
- But they also can skimp on quality as a way of cost saving
- The impact on quality of care is not clear “a priori”
 - It is difficult to observe and quantify the quality of care provided (not always consensus on what is good quality)
 - Difficult to distinguish whether a bad medical outcome is attributable to the underlying disease or bad quality of care



Incentives and hospital strategies under DRG payment



Options to avoid deficits under activity based payments

Quality of treatment is a choice variable of providers

- Determined by multiple economic incentives provided by the payment mechanism. Providers can:
 - Discharge patients earlier than clinically appropriate
 - Over-provide certain services to push the patient into a higher-paying category
 - Under-serve to optimize the payments they get (omit medically indicated tests and therapies)
 - Discourage patients whose expected costs are likely to be higher than the expected reimbursement

DRGs and efficiency: summary of evidence

- Studies of the impact of DRGs on efficiency mostly focus on technical efficiency or productivity
- Very few longitudinal studies looking at before/after
- Findings are mixed ...
 - Improved technical efficiency (Portugal, Sweden, Norway) but nothing significant in the US, Austria
- Divergent results may be explained by the country specific starting points and contexts
- Difficult to isolate the impact of DRG payment when it is introduced as part of a wider reform programme

Empirical evidence (I): hospital activity and length-of-stay under DRGs



Country	Study	Activity	ALoS
USA 1980s	US Congress - Office of Technology Assessment, 1985	▼	▼
	Guterman et al., 1988	▼	▼
	Davis and Rhodes, 1988	▼	▼
	Kahn et al., 1990		▼
	Manton et al., 1993	▼	▼
	Muller, 1993	▼	▼
	Rosenberg and Browne, 2001	▼	▼

Cf. Table 7.4 in the book

Empirical evidence (II)



Cf. Table 7.4

Country	Study	Activity	ALoS
Sweden, early 1990s	Anell, 2005	▲	▼
	Kastberg and Siverbo, 2007	▲	▼
Italy, 1995	Louis et al., 1999	▼	▼
	Ettelt et al., 2006	▲	
Spain, 1996	Ellis/ Vidal-Fernández, 2007	▲	
Norway, 1997	Biørn et al., 2003	▲	
	Kjerstad, 2003	▲	
	Hagen et al., 2006	▲	
	Magnussen et al., 2007	▲	
Austria, 1997	Theurl and Winner, 2007		▼
Denmark, 2002	Street et al., 2007	▲	
Germany, 2003	Böcking et al., 2005	▲	▼
	Schreyögg et al., 2005		▼
	Hensen et al., 2008	▲	▼
England, 2003/4	Farrar et al., 2007	▲	▼
	Audit Commission, 2008	▲	▼
	Farrar et al., 2009	▲	▼
France, 2004/5	Or, 2009	▲	

DRGs and efficiency: summary of common trends

- ALOS generally declined following the move to the DRG-based payment
- Discharge rates to post-acute institutions increased
- On average, recorded severity of patients has increased
- In most European countries, the introduction of DRG payment increased total hospital costs, partly due to higher activity levels

Quality: Review of evidence

- Shorter ALOS associated sometimes with a rise in likelihood that patients discharged in unstable condition (US)
- But also organisational change (utilisation of new technology/procedures, development of home/ambulatory care)
- Impact might depend on the hospital's economic situation before DRGs (higher mortality rates in hospitals facing price reduction)
- DRGs may have contradictory effects for different patients groups depending on the price incentives provided by different DRGs

Quality: Review of evidence (2)

- In Europe: No impact on health outcomes measured by specific mortality and readmission rates (Italy, Norway, Sweden, England)
- Change in coding practices in Sweden (more secondary diagnosis), France (DRG drift)
- Generally, consensus that quality can be an issue in DRG based payment

Integrating quality into DRG payment

- Unintended adverse effects of DRG-based payment systems could potentially be avoided by modifying the incentives of the basic payment system
- The payment model/contract could be adjusted depending on the policy objectives pursued (maintaining quality while reducing costs, improving quality, etc.) and taking into account the type of the providers (public/private)
- Different options exist depending on the availability of data in the system

Models of payment integrating quality

- Hospital income could be adjusted on the basis of hospital level quality indicators:
 - England “quality accounts”
 - Medicare/Medicaid US: lower payments to hospitals for above average readmission rates for AMI, CABG, pneumonia, etc.
- When quality can be monitored at the patient level, payments for individual patients could be based on the quality of their treatment
 - US Medicare model: no payment is made to hospitals for certain patient outcomes (8 conditions which were not present on admission, such as pressure ulcer, urinary tract infection, etc.)
 - Difficulty of determining what are avoidable adverse events and ensuring accurate coding of diagnosis, risks of gaming and coding manipulation

Models of payment (2)

- A more challenging option: adjust DRG prices for encouraging medical practice considered as “good quality” moving away from pricing based on average observed costs
- In England, ‘best practice tariffs’
 - introduced for four areas where significant unexplained variation in quality & clear evidence of what constitutes best practice
 - prices are adjusted upwards if key clinical characteristics of best practice care are met (lower payment for non-compliance)
 - incentivize day-case activity for cholecystectomy; price covers the entire pathway for cataract (streamlined elective cataract); etc.

Key issues

- Getting patient classification right: defining a “standard package of care” on the basis of expected resource use is not straightforward
- Potentially unfair reimbursement if systematic differences across providers
- Establishing costs/price uncontaminated by inefficient behaviour
- Controlling hospital expenditure
 - Hospital/macro level volume control mechanisms
 - Possible to operate DRG-based hospital payment within a Global budget framework
- Avoid unintended consequences in terms of quality, cost-shifting, patient selection

Conclusions

- DRG based payment systems provide opportunities for enhancing efficiency and improving quality of care but also represent risks
- DRGs makes it possible to give explicit incentives for procedures/treatments considered “better quality and higher value”, to penalise ‘bad/inefficient practice’ or to grant financing for improving patient outcomes
- Applications of DRG based funding in Europe has evolved rapidly to improve efficiency and quality

Conclusions

- DRGs contributed to enhance understanding of the relationship between resource use and the activity in acute care setting
- May contribute improved planning of service delivery/quality
- Essential for its success:
 - Availability of a strong information system for monitoring quality & efficiency (wide gaps between countries)
 - Flexible and transparent governance supporting continuous fine-tuning of the incentive structure