

# DRGs and hospital efficiency: panacea or pitfall?

Andrew Street, Jacqueline O'Reilly,  
Padraic Ward, Anne Mason



*Diagnosis-Related  
Groups in Europe:  
Towards Efficiency  
and Quality*



- DRG-based reimbursement introduced to address:
  - Rising healthcare expenditure
    - Improve efficiency
    - Cost containment
    - Reduce length of stay
  - Change activity levels
  - Variations in practice

- In theory, why should DRGs enhance efficiency and effectiveness in the hospital sector?
- Is there empirical evidence that DRGs contribute to efficiency, effectiveness or cost?
- What are the key issues, problems and challenges?

## Payment systems

<b>System</b>	<b>Fee-for-service</b>	<i>DRG-financing</i>	<b>Global budget</b>
<b>Description of patients</b>	Individual	<i>DRG</i>	Specialty
<b>Activity</b>	Unrestricted	<i>Unrestricted or negotiated</i>	Target/historical
<b>Price</b>	Item of service	<i>Fixed per DRG (prospectively)</i>	Locally agreed (prospectively)

**USA**   **Europe**

## Revenue Functions

$$R^C = \sum_I [N_i \times c_i]$$

$$R^G = \sum_S [\bar{N}_{is} \times p_s]$$

$$R^A = \sum_J [N_{ij} \times \bar{p}_j]$$

## Hospital activity and length of stay

Country	Study	Activity	ALoS
US, 1983	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	▼	▼

## Hospital activity and length of stay

Country	Study	Activity	ALoS
Australia, 1993	Ettelt et al., 2006	▲	
	Street et al., 2007	▲	
Sweden, early 1990s	Anell, 2005	▲	▼
	Kastberg and Siverbo, 2007)	▲	▼
Italy, 1995	Louis et al., 1999	▼	▼
	Ettelt et al., 2006	▲	
Spain, 1996	Ellis and 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		▼

## Hospital activity and length of stay

Country	Study	Activity	ALoS
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	▲	

# Costs

Country	Study	Costs	
		Unit	Total
US, 1983	Guterman et al., 1988		▲ slower rate
Australia, 1993	Ettelt et al., 2006	▼	▼
Sweden, early 1990s	Anell, 2005		▲
	Kastberg and Siverbo, 2007		▲
Spain, 1996	Ellis and Vidal-Fernández, 2007	▲ slower rate	
England, 2003/4	Farrar et al., 2007	▼	
	Farrar et al., 2009	▼	

- Expenditure control – marginal pricing
- Accuracy of DRGs
- Gaming – upcoding - audit
- Patient selection - creaming
- Patient selection - dumping
- Co-ordination across care pathway
- Quality (skimping, early discharge)