Innovation and Diagnosis Related Groups (DRGs)

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Background and History
History: DRGs Began in the 1960s

- John D. Thompson and Robert B. Fetter of Yale University were the inventors of DRGs.
- The importance of placing patients together into homogeneous clinical groups derived from the efforts of Florence Nightingale, the famous English nurse of the 19th Century.
- DRGs derived from four analytical needs that came together conceptually in the 1960s:
  1. Understanding Hospital costs
  2. Engaging in Area-Wide Planning
  3. Measuring Quality
  4. Simulating Hospital Systems
John Devereaux Thompson

- Co-inventor of DRGs;
- Professor of Health Services Administration, Yale University, New Haven, CT, USA

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1. Understanding Hospital Costs

- Hospital costs could not be “explained” well by then current methods.
- Individual patient-level data were fragmented, missing, and lacked enough specificity to allow the application of a coherent cost per patient allocation methodology.
2. Engaging in Area-Wide Planning

• The U.S. State of Connecticut needed information on each hospital service area.
  – Magnitude and type of hospitalization patterns for patients leaving their service areas other hospitals.

• Required was a patient-level database, consisting of clinical and cost information.
  – Specifically discharge diagnosis and treatment
3. Measuring Quality

- Observation of use patterns in Connecticut’s 35 hospitals revealed wide variation in discharge and treatment patterns
  - Example: length of stay (LOS) varied widely within rough diagnostic categories.
  - Use rates of clinical support services also varied widely.
- The then new Medicare Program required “utilization review” to assess whether there were appropriate care and billing claims within and across hospitals.
- Quality issues were raised due to the large discrepancies there were observed.
Outliers as Quality Markers

Possible Sources of Outliers

- Unexpected complications
- Co-morbidities
- Administrative delays*
- Nosocomial infections*
- Errors*

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4. Simulating Hospital Systems

- Attempted to develop a computer system that would correlate observed utilization of inpatient services with staffing patterns and costs.
- Common problem was the lack of disaggregated, patient-level data and a system of classification of patients into logical clinical groups.
- In short, there was no common “metric,” no common measurement system by which to classify patients so that within and between hospital studies could be accomplished.
Summary: DRG Background

• A patient classification system based on clinical diagnosis, hospital discharge data, and several patient characteristics.
• DRGs provided the ability to isolate differences in hospital costs as a function of particular DRGs. *(Oddly, this capacity has not been used nearly to the extent that it could have.)*
• Objectives were to understand the hospital “product” more rationally and to correlate clinical information with cost information.
• Uses included:
  – Development of a more defensible hospital budget,
  – Determination of inefficient hospital practices (reduce waste),
  – Improvement of quality problems,
  – Creation of regional planning and rationalization of relationships among hospitals.
• NOTE!! -- Nothing in the origin of the DRG case-mix, patient classification system included its use as a payment or reimbursement system for hospitals!!

• However, the logic of its applicability to hospital payment emerged quickly during America’s experimentation with new prospective based payment approaches.
  – Specifically, in the US State of New Jersey’s efforts to develop a hospital payment system that would slow the increase in costs to the State.

• Then, in 1983, the Federal Government implemented the Prospective Payment System (PPS) modeled after the DRG program of New Jersey.
Payment Method
A hospital submits its claims to Medicare via a so-called “fiscal intermediary,” usually a state-level organization that already underwrites health insurance and on which has a claims processing capability.

• The claims are coded according to one of hundreds of DRGs.
• Medicare pays the hospital a fixed amount for each DRG regardless of the hospital’s status, location, or internal organizational structure.
  – There are some exceptions, e.g., teaching hospitals obtain an extra amount to cover their direct and indirect teaching costs for residents.
• This payment is made to the hospital REGARDLESS OF THE SPECIFIC HOSPITAL’S COSTS! (The logic is illustrated on the next slide.)
DRG “Losers” & “Gainers”

Relationship between costs and payment per DRG

- ALOS
- $ earned (gained)
- $ lost
- Outliers

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Results and Performance
Overview

• What was the outcome of the implementation of the DRG payment approach in the Prospective Payment System (PPS)?
  – Passed into law in 1983 (26 years old)
  – It was the most important and far-reaching reform of hospital payment since the enactment of Medicare itself in 1965.
  – It was the Federal Government’s major hope to reign in the steeply rising costs of hospitalization under Medicare.
  – There was widespread fear among hospitals about what this would do to their financial condition, ability to offer a wide array of services, including those that were expensive “loss-leaders.”
Short-Term Outcomes

• Vast confusion among the ~ 5,000 hospitals in the United States
  – Reversed incentives and contradicted decades of billing practices
  – Required enormous infusion of computer technology into hospitals
  – Necessitated retraining of medical records technicians
  – Spawned a large industry of “DRG consultants” to help hospitals cope with the change
Between 1983 and 1990, roughly ~350 hospitals closed their doors; most of them were small urban and rural facilities.

- Lack of capacity to adapt to the new payment system
- One “bad” loss leader often led to financial collapse

Length of Stay (LOS) dropped as did total patient days.

- Strong pressure to discharge patients earlier or at least to reach the breakeven point of costs versus Medicare payment.

Rising concern that safety and quality were being compromised, reflected in the motto, “discharged quicker and sicker.”
Factors Accounting for Growth in Personal Health Care
Expenditures Per Capita

The most important factor accounting for the slowdown in personal health care expenditure growth after 1993 was the decline in medical price growth.

<table>
<thead>
<tr>
<th>Selected Calendar Year Periods</th>
<th>Average Annual Percent Change</th>
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<tbody>
<tr>
<td>1980-1982</td>
<td>11.2</td>
</tr>
<tr>
<td>1982-1993</td>
<td>6.0</td>
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<tr>
<td>1993-1999</td>
<td>2.9</td>
</tr>
<tr>
<td>1999-2000</td>
<td>3.4</td>
</tr>
</tbody>
</table>

1 Personal health care spending comprises therapeutic goods or services rendered to treat or prevent a specific disease or condition in a specific person.

2 Utilization includes quantity, quality, and mix of services. As a residual, this factor also includes any errors in measuring prices or total spending.

Note: Medical prices are calculated using the personal health care chain-type index constructed from the producer price index for hospital care, nursing home input price index for nursing home care, and consumer price indexes specific to each of the remaining personal health care components.


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Average Annual Growth in Per-Enrollee Medicare and Private Health Insurance Benefits

Medicare grew slightly slower than private health insurance over the 30-year period, though growth rates diverged significantly in selected periods.

Decline in LOS and Discharges

Short-Stay Hospitals: Discharges and Length of Stay for All Payers

The implementation of the Medicare prospective payment system and the rise of managed care have contributed to a noticeable decline in both discharges and average length of stay.

Note: This chart captures discharges and length of stay for all patients of all payers in non-federal hospitals with average lengths of stays of less than 30 days.

Decline in Days of Care

Total Days of Care of Medicare Beneficiary Stays in Short-Stay Hospitals

Total days of care per 1,000 Medicare beneficiaries continued a historical downward trend started in 1983.

Note: Beginning with 1994 data, the utilization statistics do not reflect managed care enrollment.

Source: CMS, Office of Information Services. Data from the Medicare Support Access Facility; data development by the Office of Research, Development, and Information.
Inpatient vs. Outpatient Expenditures

Community Hospital Expenditures: Inpatient and Outpatient Shares for All Payers

Over the last 20 years there has been a significant shift in the composition of health services as more treatments are performed in the outpatient setting.

Note: Community hospitals are all non-federal, short-term general, and special hospitals whose activities are available to the public.


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Growth in Inpatient & Outpatient Expenditures

Growth in Inpatient and Outpatient Expenditures in Community Hospitals for All Payers, 1980-2000

Managed care contributed to the slower pace in inpatient expenditure growth and the continued move of services to outpatient settings that began with the introduction of Medicare PPS.

Note: Community hospitals are all non-federal, short-term general and special hospitals whose facilities are available to the public.