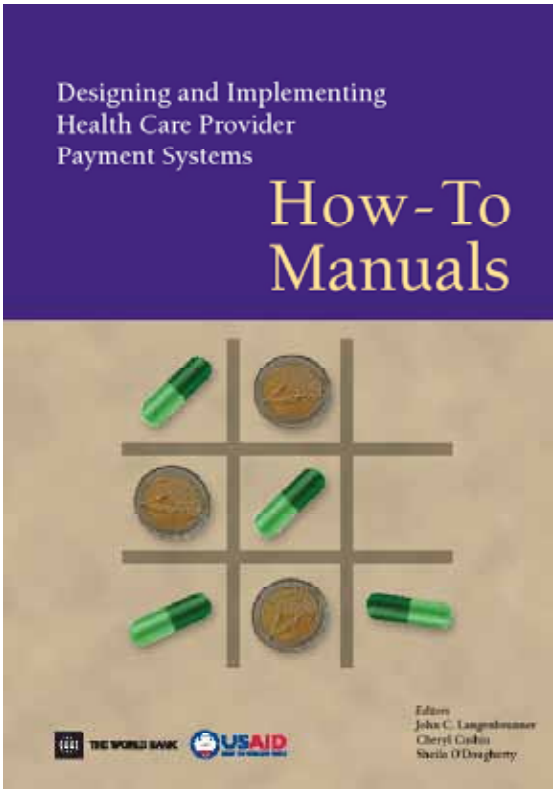

Designing and Implementing Health Care Provider Payment Systems: How-To Manuals

EDITED BY JOHN C. LANGENBRUNNER, CHERYL CASHIN, AND SHEILA O'DOUGHERTY

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Summary for web of chapter 2, pp. 125–214

Strategic purchasing of health services involves a continuous search for the best ways to maximize health system performance by deciding which interventions should be purchased, from whom they should be purchased, and how to pay for them. In such an arrangement, the passive cashier is replaced by an intelligent purchaser that can focus scarce resources on existing and emerging priorities rather than continuing entrenched historical spending patterns. Having experimented with different ways of paying providers of health care services, countries increasingly want to know not only what to do when paying providers, but also how to do it, particularly how to design, manage, and implement the transition from current to reformed systems, and this how-to manual addresses this need.

The book has chapters on three of the most effective provider payment systems: primary care per capita (capitation) payment, case-based hospital payment, and hospital global budgets. It also includes a primer on a second policy lever used by purchasers, namely, contracting. This primer can be especially useful with one provider payment method: hospital global budgets. The volume's final chapter provides an outline for designing, launching, and running a health management information system, as well as the necessary infrastructure for strategic purchasing.

Case-Based Hospital Payment Systems: Summary of Key Aspects of Design and Implementation

SUMMARY BY CHERYL CASHIN*

Provider payment systems can be powerful tools to promote the development of health systems and achieve health policy objectives. Because the hospital inpatient sector almost always consumes the greatest share of health care resources, the way hospitals are paid can have a particularly strong influence on the performance of the health care system as a whole. Countries throughout the world are taking new approaches to paying hospitals in an effort to improve hospital performance and meet broader health system objectives.

There are several alternative methods for paying hospitals that are used widely, all of which have a variety of strengths and weaknesses. There is no single answer for which hospital payment method is most successful in bringing about desired results for the health care system while minimizing the unintended consequences. Some payment systems may be more appropriate for certain environments or countries at certain times, which payment system is most appropriate may change over time in a country, and often it is most effective to use more than one payment method in combination. In recent years, however, many countries have followed the lead of the U.S. Medicare system and have moved toward some variation of a case-based payment method, which reimburses all hospitals in the payment system a pre-determined fixed rate for each treated hospital case. Case-based payment systems have been seen as a valuable tool in a wide variety of contexts for reorienting provider payment from input-based budgets to paying for outputs, and as a way to introduce efficiency incentives and competition into the hospital sector.

This document is based on a synthesis of international evidence and experience related to the design and implementation of case-based hospital payment systems. It summarizes lessons learned and consolidates specific technical recommendations about steps in the design and implementation of case-based payment systems. A brief case study is presented from the Kyrgyz Republic, where a case-based hospital payment system has been implemented since the mid-1990s and several iterations of development and refinement of the system have been completed.

Definition of a Case-Based Hospital Payment System

Case-based payment reimburses all hospitals in the payment system a pre-determined fixed rate for each treated hospital case. A case-based hospital payment system includes the whole set of rules, policies, and supporting management, billing, and information systems required to operate the system. The health purchaser pays all hospitals in the system a fixed payment rate for each treated case that falls into one of a set of defined categories of cases, such as diagnosis-related groups (DRGs). The objective is to reimburse hospitals the average expected cost in an average-performing hospital to treat a case in a given category. Therefore, fixed payment rates are set for a group of hospitals, rather than for a single hospital. Any underlying differences in costs across hospitals need to be addressed by the process of case grouping, or other adjustments across groups of cases or groups of hospitals. The actual costs of treating individual cases exceed the payment rate in some cases and fall below it in others, which is the feature of the payment system that creates incentives to make hospital management more efficient.

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Defining the Health Policy Context

A case-based hospital payment system should be designed in the context of broader health policy goals, the current capacity of the system, and the desired or expected changes in the system. The payment system will likely stimulate changes in hospital care that also will be felt in other parts of the health care system. For example, if the new payment system creates incentives for shorter hospital stays, outpatient or community care must be ready to provide a greater degree of follow-up care. Therefore, planning of the new case-based hospital payment system should include an analysis of the expected impacts and potential unintended impacts within and beyond the hospital sector. Some questions that should be addressed before a case-based hospital payment system is selected and the new system is designed include:

- What are the main characteristics of the health system and key health policy challenges?
- How are health services organized?
- What are the goals of the case-based hospital payment system?
- What conditions must be met and steps taken to ensure that the goals will be achieved?
- What changes can be expected in the hospital sector and other parts of the health care system and community after the new hospital payment system is introduced?

The goals of the new hospital payment system should be clarified. Case-based hospital payment was introduced in the U.S. Medicare system, for example, with the primary goal of promoting cost containment in the hospital sector. In most low- and middle-income settings where per capita health expenditures are generally too low, goals related to improving management and resource use, shifting expenditures to more cost-effective services, or improving the equity of health financing are likely to be more pressing. Goals to be supported by a case-based hospital payment system may include, for example, one or more of the following:

- Reorient health financing toward reimbursing the provision of health services to the population rather than creating or maintaining infrastructure (buildings)
- Create incentives for hospitals to deliver higher quality services using fewer or lower cost inputs
- Introduce competition for providers and choice for patients or otherwise increase the responsiveness of the health system to patients and the population
- Allow government funds to be used to purchase services from private hospitals
- Drive restructuring of the health delivery system, and re-profile or close inefficient hospitals and departments
- Improve the efficiency of resource allocation across hospitals, and between the hospital sector and other levels of care
- Improve the equity of health financing across, for example, hospitals, geographic areas, or population groups
- Generate information for better management of the health sector
- Increase provider management autonomy (in effect, decentralization of health facility-level management)

Steps in Developing a Case-Based Hospital Payment System

Case-based hospital payment systems have at least two components: an administration system (information and billing) for hospitals to report their cases and be reimbursed by the purchaser; and the set of parameters for calculating the payment rates for each type of case. These payment systems, when they use diagnosis-based case groups, also require an information system that computerizes the recording of cases by the hospitals, and the grouping of cases into payment categories for the purchaser.

The parameters for calculating the payment rate per case include at least a base rate (global average cost per case) and case group weights to differentiate cases with different resource intensities. The most general formula is:

$$\textbf{Payment per case}_i = \textbf{BR} \times \textbf{CGW}_i \times \textbf{O}_h$$

where

$\text{Payment per case}_i$ = price paid by purchaser for cases in case group i

BR = base rate, or global average cost per case

CGW_i = case group weight for case group i

O_h = other adjustors for hospital h

Case group weights reflect the average cost per case in a group relative to the global average cost per case. For

example, a case group weight of 1.20 indicates that cases in this group use on average 20 percent more resources to diagnose and treat than the average case in the payment system. In the simplest case-based payment systems that pay hospitals one global average cost per treated case, the case group weights are all set to 1.

Adjustment parameters, such as region-specific or hospital-type adjustment coefficients, may also be added to the basic per case formula to determine the final payment rate for a particular case in a particular hospital. For example, a coefficient may be added to uniformly increase the payment rate to teaching hospitals or to reflect regional variations in the cost of hospital inputs, such as labor. Coefficients for payment for unusually expensive cases (outliers), for transfers, and for incomplete cases, for example, can be applied to the basic formula to adjust for cost variations beyond the control of providers, to reduce financial uncertainty, to avoid duplication of payments, and to promote equitable allocation of financing across services.

The steps for developing all components of a case-based hospital payment system are summarized in Figure 1.

Figure 1. Steps in developing a case-based hospital payment system

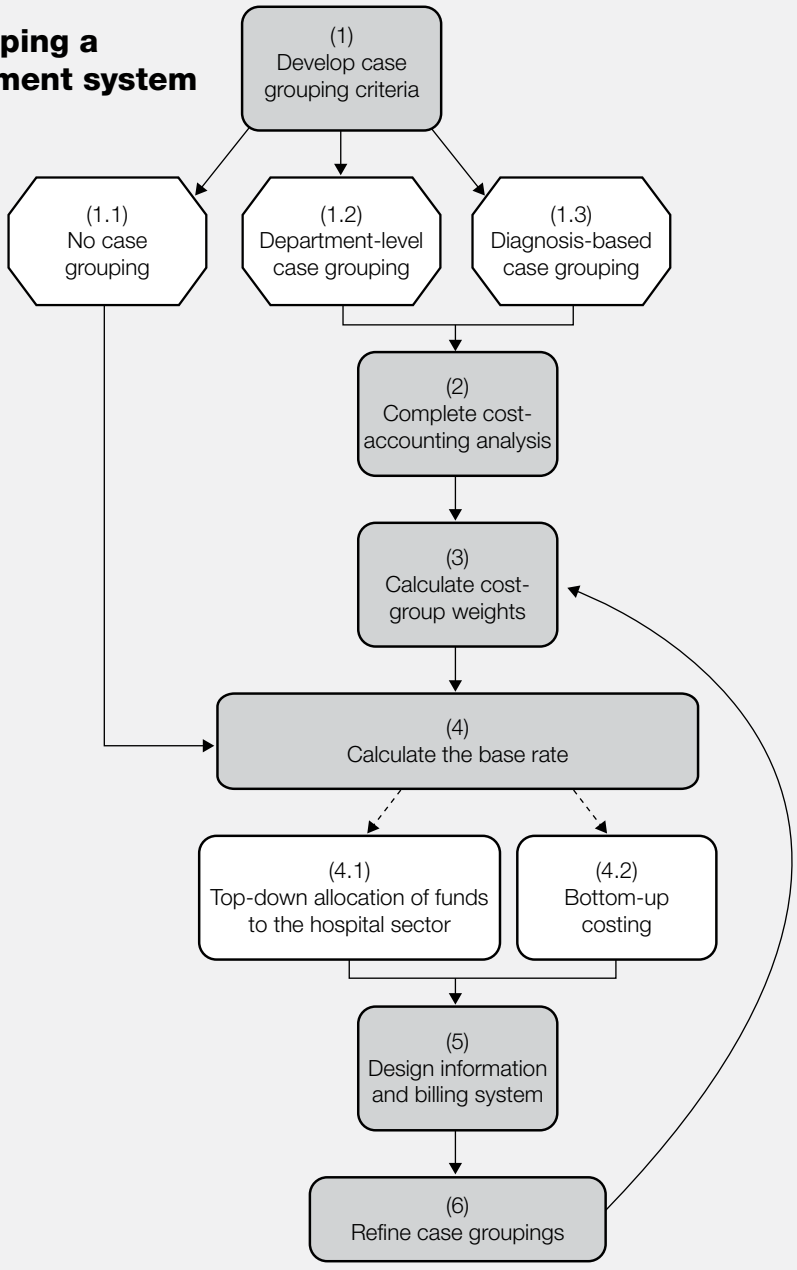


Table 1. Data requirements for different types of case grouping

Type of case grouping	Data requirements	Data sources
No case grouping	Average cost per hospital case	Historical hospital budgets; statistical data; other hospital expenditure and utilization data
Department case grouping	Department average cost per bed-day; department lengths of stay	Hospital budgets and cost-accounting analysis; statistical data; other hospital expenditure and utilization data
Diagnosis-based case grouping	Department average cost per bed-day; department lengths of stay, and other characteristics of the hospital or case	Hospital budgets and cost-accounting statistical data; individual data on age, sex, ICD-9 or ICD-10 code for primary diagnosis, length of stay, surgery, and other characteristics of the case (such as intensive care)

1. Defining Case Grouping Criteria

The simplest case grouping system, which reimburses hospitals the average cost per case for all hospital cases, does not put cases into case groups. The next level of complexity is to group cases by the department (aggregate clinical specialty) to which the case was admitted or from which they were discharged. The most sophisticated level is grouping cases according to diagnosis and major procedures where the case groups should bring together cases that have both similar clinical characteristics and similar resource requirements for diagnosis and treatment. The level of complexity is determined by the amount of detail of available cost and clinical data that are needed to compute the cost per case for each group of cases (Table 1).

For diagnosis-based case grouping, case groups should be defined so that they are medically and economically homogeneous, so the groups will make sense to both clinical professionals and financing specialists. In addition, the average cost per case within a case group should be statistically stable, or follow a relatively tight normal distribution.

Creating diagnosis-based case groups is a part of a process that is both art and science (see Figure 2). Some grouping tasks can be completed using statistical analysis, while others rely on expert judgment; many rely on a combination of the two. The economic criterion, for example, is applied empirically, and involves iterations of combining ICD codes into groups, running a cost analysis on the group to determine the cost distribution, and recombining ICD codes to improve the distribution.

Although there are no clear guidelines about what the cost distribution should look like within each case group, it should approach a relatively tight normal distribution.

Figure 2. Steps in constructing diagnosis-based case groups

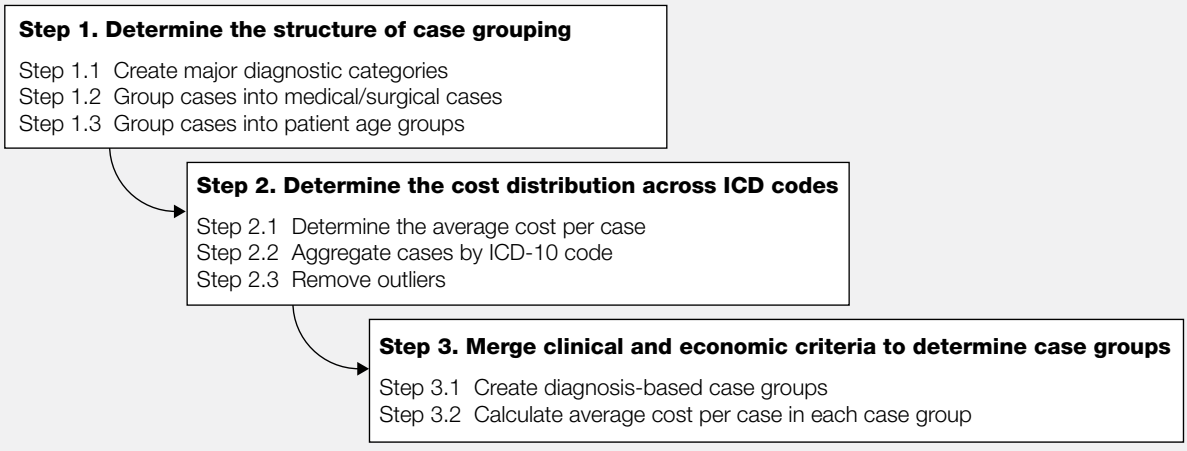
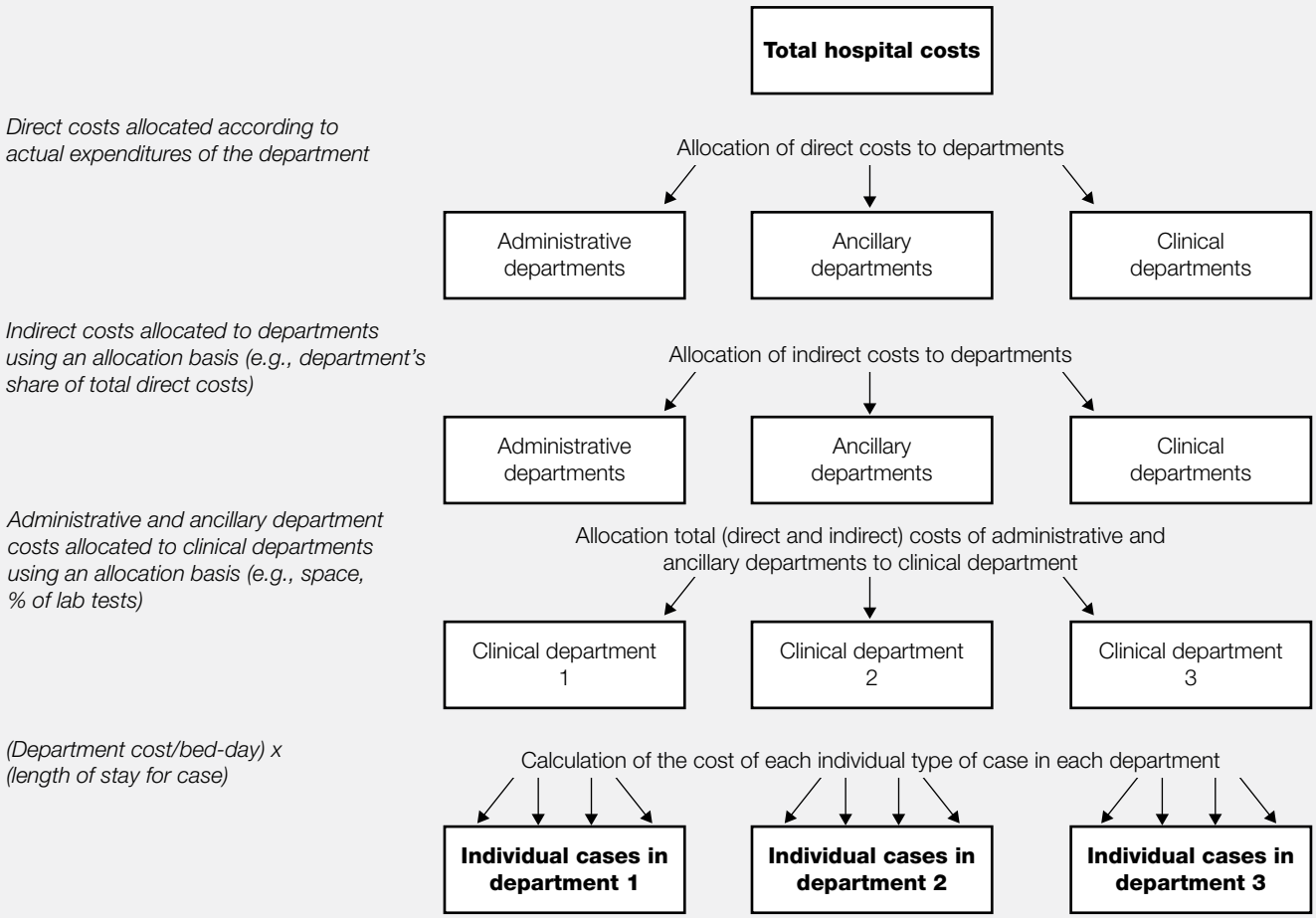


Figure 3. Overview of a simple cost-accounting process



There is a trade-off between having a large number of case groups with a small number of cases in each, and vice versa. If the number of groups is large, the cost variation across cases within each group is small, but the cost estimates may not be statistically stable, and the system may be administratively burdensome or encourage greater upcoding or cost-shifting. Also, the greater the number of groups, the closer the payment system comes to fee-for-service, and the efficiency incentives may decrease. In contrast, if the number of case groups is small, the groups have less homogeneity, and legitimate differences in costs between cases are not captured. Nonetheless, the initial system should contain relatively few diagnosis-based case groups, because patient-level data are likely to be limited.

2. Completing Cost-Accounting Analysis

A cost-accounting process is used to determine the unit cost per case, which together with expert clinical opinion is then used to assign each diagnosis code to a case group. Because the case-based hospital payment system pays hospitals on the basis of a treated case, the objective of the cost-accounting exercise is to allocate the full costs, direct and indirect, from administrative and ancillary departments to clinical departments in order to estimate the full unit cost.

The cost-accounting process for hospitals is intended to allocate all of the hospital's costs to the final unit of output, a discharged patient. It is often difficult to determine the cost per individual hospital case, because costs tend to be collected and aggregated by organizational units of the hospital (often hospital departments). The simple cost-accounting process shown in Figure 3 accepts the assumption that the department is the lowest unit at which costs can be reliably and consistently determined (often referred to as a cost center).

The cost-accounting process determines the average total cost per case by estimating the total costs for each department through allocating indirect costs to the departments. The total (direct and indirect) costs of the administrative and ancillary departments are then allocated to the clinical departments from which cases are discharged. The total cost of each individual case within each department is then calculated by multiplying the cost per department bed-day by the length of stay for each individual case.

3. Calculating Case Group Weights

Case group weights are derived from the average cost per case in each case group, and by dividing the case group cost by the global average cost per case:

$$\text{CGW}_i = \frac{\text{Average cost per case}_i}{\text{Global average cost per case}}$$

The average cost per case in group *i* is calculated as the cost per case in group *i* relative to the global average cost per case. Again, the average cost per case in hospital *h* is the cost per bed-day in the department from which the cases were typically discharged (*d*), multiplied by the average length of stay for that case group (ALOS_i). The case group weight for group *i* is:

$$\text{Average Cost Per Case}_i = \frac{\sum_h \left[(\text{cost per bed-day}_{d,\,h}) \times (\text{ALOS}_i) \times \sum_i \text{cases}_{i,\,h} \right]}{\sum_h \text{cases}_{i,\,h}}$$

A simple example of computing case group weights is presented in Box 1.

To calculate the global average cost per case, it is necessary to first decide which hospital costs will be included in the hospital payment system, and to remove all costs from the hospital expenditure data that will not be included in the reimbursable cost per case. For example, if a hospital

Box 1: Computing Case Group Weights

Suppose there are two case groups in the payment system, **case group X** and **case group Y**. Cases in **case group X** have an average cost per case of $117, and cases in **case group Y** have an average cost per case of $45. There are two hospitals in our payment system, Hospital A and Hospital B. Last year, Hospital A treated 35 cases in **case group X**, with an average length of stay of 11 days. The average cost per bed-day in Hospital A in the department from which cases in group X are typically discharged is $9.00/day. Hospital B treated 25 cases, with an average length of stay of 14 days, and an average cost per bed-day of $10.16. Hospital A treated 15 cases in **case group Y**, with an average length of stay of 7 days. The average cost per bed-day in Hospital A is $7.50/day. Hospital B treated 25 cases, with an average length of stay of 6 days, and an average cost per bed-day of $6.80.

Suppose the global average cost per case is $90.00 per case. The **case group weight** for **case group X** is calculated as the average cost across hospitals of cases in **case group X** (summing across hospitals the cost per bed-day multiplied by the average length of stay multiplied by the number of cases in the hospital and dividing by the total number of cases in the case group) relative to the global average cost per case:

$$\text{CGW}_x = \frac{\left[\frac{(9.00)*(11)*(35) + (10.16)*(14)*(25)}{60} \right]}{90.00} = \frac{117}{60} = 1.3$$

And the **case group weight for case group Y**:

$$\text{CGW}_y = \frac{\left[\frac{(7.50)*(7)*(15) + (6.80)*(6)*(25)}{40} \right]}{90.00} = \frac{45}{90} = 0.5$$

Therefore, cases in **case group X** are 30 percent more severe than the average case, and cases in **case group Y** are 50 percent less severe than the average case.

has an outpatient department, any related expenditures should be removed from that hospital's total expenditure data. Other expenditure categories, such as capital or ambulance services, should also be removed if they are not reimbursed through the case-based payment system. The global average cost per case can then be computed by dividing the sum of the total expenditures across all hospitals included in the payment system (*h*) by total number of hospital cases in all case groups (*i*):

$$\text{Global average cost per case} = \frac{\sum_{h}(\text{total expenditures}_{h} - \text{excluded expeditures}_{h})}{\sum_{h}\sum_{i}\text{cases}_{i,\,h}}$$

4. Calculating the Base Rate

The base rate is the global average cost per hospital case, which is the starting point for setting prices per case. Determining the base rate is a major policy lever in a case-based hospital payment system. The base rate is computed from an estimate of the amount of funds available to pay for hospital services for all hospitals included in the payment system in a defined geographic or administrative area—that is, the hospital pool—divided by the projected total number of hospital cases across all hospitals in that area.

The base rate is an important policy variable that influences the allocation of health care resources between the hospital sector and other parts of the health care system, and the allocation of hospital resources across hospitals and regions. It can be used as a tool to promote equity, for example, when it is increased in areas that have been chronically underfinanced historically. It also can be used as a tool to increase efficiency, for example, by increasing the size of the PHC pool relative to the hospital pool. By including or excluding capital costs, the base rate also influences capital investment decisions by hospitals, the purchaser, or other government funders, and the overall allocation between labor and capital in the production of health care services.

TOP-DOWN OR BOTTOM-UP ESTIMATION OF THE HOSPITAL POOL

The hospital pool can be estimated either by bottom-up costing or top-down allocation. In top-down allocation, the proportion of available funding that is to be allocated to the hospital sector is defined in advance. If the hospital pool is derived through this approach, there is a clear mechanism to limit the growth of expenditures on hospital services. The pool is typically specified as a proportion of the total health care budget, which can then be used as a policy tool to administratively direct health care resources toward or away from the hospital sector

In bottom-up costing, the cost of all inputs used to provide hospital care in the most recent year (or years) is added up and divided by the annual total number of hospital cases. The costs can be based on actual expenditures in the previous year(s) or on projections from historical expenditures and utilization. This assumes that the current cost structure and overall internal resource allocation within and across hospitals are desirable, reflect the actual cost of production of services and case mix (that is, the average severity of treated hospital cases), and can and should be maintained. More complicated methods of imputing costs based on desired expenditure patterns can be used, though, to stimulate changes in the cost structure.

HARD OR SOFT BUDGET CAP

The hospital pool serves as a ceiling on expenditures for hospital services, excluding direct out-of-pocket payments. The ceiling applies collectively to all hospitals in the payment system, rather than to a specific hospital. This ceiling may be a *hard budget cap* (providers are not compensated and bear the financial risk for budget overruns) or a *soft budget cap* (providers are compensated for budget overruns).

If the hospital pool is a hard budget cap, the hospital payment system has to be budget neutral over a defined time period. To maintain budget neutrality, either the base rate or the volume of cases has to be adjusted if either the total number of cases or the average severity of cases is higher than was projected for a given period, causing total payments to exceed the hospital pool. Alternatively, the purchaser can try to keep the base rate stable and make adjustments instead to the volume of cases, particularly for elective hospitalizations.

5. Designing an Information and Billing System

A case-based hospital payment system requires an information and billing system so that each hospital can both record the information about each case to be used by the purchaser to determine the payment rate, and document the billing and payment process. In addition, this health information system (HIS) should help improve management

among both providers and purchasers, through generating information for providers to improve their resource allocation and service delivery, and for purchasers to improve quality assurance systems, resource use, and overall management of the health system.

The basic HIS required to support the payment system has two main components, both of which are established among providers and purchasers:

- *Hospital case database*, including basic discharge information about each hospital case
- *Financial database*, including cost-accounting and expenditure information.

The hospitals submit the information about their treated cases on discharge forms to the purchaser, and the purchaser calculates and then transfers payment to the hospitals. In the simplest case-based hospital payment systems, billing can be on paper without computers. In more complicated or diagnosis-based payment systems, a computerized HIS is needed. The HIS developers should work closely with the purchaser and regulators both to make sure that the information flow follows the cycle of health service purchasing, and to develop accounting reports and relevant processes and flows of documents and data.

Implementation of a case-based hospital payment system requires a relatively small volume of data, including the disease code (ICD-9 or ICD-10) of the principal diagnosis, a surgical operation code, patient's age, admission date, discharge date, and basic accounting information in the financial database. Nevertheless, wider uses for the databases should be taken into account in the development of an HIS. Moreover, a particular information subsystem must fit in the national health information strategy and follow systems architecture (standards).

HOSPITAL CASE DATABASE

The hospital case database system has three core modules: data entry, data transfer, and grouper and billing/payment. It can also link with other databases. Each of the modules should be installed at both providers and purchaser. For the providers, the system is used to enter the data on discharged cases and to estimate the volume of activity and of anticipated payment, as well as to improve their general management. For the purchaser, the system receives case discharge data from all the hospitals in the payment system and calculates payment to them.

FINANCIAL DATABASE

A financial database should be established to compile the hospital cost-accounting analysis, which is completed initially to develop the case-based payment system, but should also be updated to include recent cost-accounting information from all hospitals in the payment system. The information in the financial database allows the purchaser to analyze changes in the cost structure of hospitals that the payment system may have brought about and that should be used to update the calculation of the base rate and any adjustment factors. As the payment systems develop and data are collected through the billing system, the process of submitting cost-accounting reports from facilities should be standardized and made compulsory.

6. Refining Case Grouping

Perhaps the most important measure to counteract potential adverse incentives is to adequately compensate hospitals for legitimate cost differences between cases. A case-based hospital payment system must include routine revision and refinement of the case groups and weights to periodically incorporate new data from the case database into the cost per case estimates, case groups, and case group weights. As more data become available from the information system, case groups may be refined by increasing the number of case groups; increasing the number and range of clinical characteristics used to group the cases, such as adding comorbidities or severity measures; and developing supplementary payment mechanisms for outlier cases.

Implementation Issues

The way in which case-based hospital payment systems are operated and tailored to the specific contextual factors in a country or region strongly influences how successfully they contribute to achieving health policy goals. Two particularly important implementation issues are the way in which a case-based payment system is phased, which is critical to preparing the hospitals and the entire system to adapt to new incentives, and the measures that are taken to counteract possible gaming behavior of providers and the potential adverse incentives of the payment system.

Transition to a Case-Based Payment System and Risk Management

It is generally recommended that new case-based hospital payment systems be implemented incrementally. An incremental approach gradually shifts financial risk to hospitals, allowing them time to adapt to the new incentives, and provides the opportunity to establish information systems and accumulate the data necessary to refine the payment system.

It is often best to pilot a new payment system first as a safe "paper system" without any real change in the flow of funding. This is part of the process of organizational learning for both the purchaser and providers, and may help gain the understanding and support of key stakeholders. The pilot paper system is useful to model the changes and benefits that will be brought about by the new way of working. It also puts the information systems in place and begins collecting hospital case data to simulate the changes in resource allocation that will occur in a case-based payment system. The paper system can be used to show hospitals how their budgets will be affected if the new payment system is introduced, so they can begin to adapt their internal management to the new system before facing any actual financial risk.

The new payment system may be implemented incrementally in several ways, including:

- *Transitioning*—this may be either from an input-based budget system or other output-based hospital payment systems, such as a per diem payment system.
- *Incremental inclusion of hospitals*—introducing the new system in some hospitals and gradually adding other hospitals, or introducing the system in all hospitals in one administrative or geographic area and gradually adding other areas.
- *Incremental inclusion of costs reimbursed by the payment system*—reimbursing a subset of hospital costs through the system initially (e.g., starting with variable costs) and gradually increasing the types of costs reimbursed.
- *Incremental inclusion of types of cases*—reimbursing a subset of cases on a per case basis initially and gradually including other types of cases.
- *Incremental adoption of a system-wide base rate moving from facility-specific rates*—introducing hospital-specific adjustors to the base rate to maintain historical allocation between hospitals and gradually shifting to a single base rate for all hospitals in the system.

Measures to Counteract Adverse Incentives

The main intended incentives created by a case-based hospital payment system are for hospitals to increase efficiency by reducing excess inputs used to treat each case. These incentives can, however, potentially induce hospitals to reduce inputs excessively to the point of under-treating cases, discharging patients prematurely from the hospital, or otherwise reducing quality of care.

Along with the intended incentive to reduce inputs and increase efficiency, a case-based payment system also can create some adverse incentives:

- *Increasing admissions.* Because hospitals are paid according to output (discharged cases), they have an incentive to increase the number of admissions or repeat admissions after discharge.
- *Avoiding costly cases.* When cost differences between cases within a case group are large, hospitals have an incentive to avoid more costly cases, which may present a barrier to necessary hospitalization for severely ill patients.
- *"Gaming" the system with upcoding*, or assigning cases to a case group that is reimbursed at a higher rate than the case group to which the case actually belongs.

All these adverse incentives are inherent in the case-based hospital payment system and most likely will not be avoided without explicit measures to counteract them. These measures may be part of an integrated quality assurance system to monitor the performance of hospitals in the payment system, or may be individual administrative regulations that are enforced by the purchaser and/or regulator. Such measures may include:

- *Reduction or denial of reimbursement for hospital readmissions.* In Israel, for example, readmissions within seven days of discharge are not reimbursed.
- *Minimum lengths of stay.* Federal legislation introduced in the United States in 1996 mandated that group health insurance plans may not restrict benefits for hospital stays for new mothers and their infants to

less than 48 hours after vaginal delivery or 96 hours after cesarean delivery.

- *Measures for the purchaser to monitor and control the volume of admissions.* This may be in the form of rationing for elective cases above a certain level.
- *Medical audit or other review processes.* These assess a sample of cases for medical necessity and coding accuracy.

Case Study: The Kyrgyz Republic

The Kyrgyz Republic is one of the poorest former Soviet republics. The legacy of the Soviet system and the turbulent transition to a market-based economy had dramatic consequences for the health sector. Between 1990 and 1994, per capita GDP fell by nearly 50 percent, and health expenditures also collapsed. By the early 1990s the health care system was in crisis, with deteriorating quality and accessibility of basic health care and worsening health outcomes, including outbreaks of previously controlled infectious diseases, as well as emerging public health threats. The government embarked on a profound health reform process to address the many failings of the health system in a coherent and step-by-step way.

The health reforms in the Kyrgyz Republic have been some of the most far-reaching in their scope and achievements in the former Soviet Union, with the possible exception of the Baltic Republics. The comprehensiveness of reform, using a broad health systems approach, has extended its impact well beyond the health sector and has resulted in sweeping changes in the way in which the government delivers services to the population.

The reforms were initiated in 1994 with the top-down development of the Manas National Health Care Reform Program (1995–2005) and the bottom-up implementation reforms in the pilot of Issyk-Kul *oblast*. Donor coordination has always been a strength of the Kyrgyz Republic's health reform process, with a core group of donors including WHO, World Bank, USAID, Swiss Development Corporation, and the U.K. Department for International Development working closely with local partners to integrate activities into a common conceptual framework.

Goals of the New Payment System

The new case-based hospital payment system served as a major driver for the step-by-step health reform process. It supported the broader system goals of shifting resources to primary health care, streamlining the oversized hospital sector, using resources more efficiently in the hospital sector, increasing the autonomy of hospitals to allocate their own resources, and increasing the responsiveness of the health system to patients and to the population.

With the collapsing resource base, it became critical to reduce costly excess hospital capacity in the Kyrgyz Republic. It quickly became clear that it was impossible to reduce excess capacity and increase efficiency by rationalization or central planning alone. Changes in financial incentives from a new hospital payment system were also necessary to allow shared responsibility between health purchasers and health providers for streamlining the delivery.

Case-Based Hospital Payment as Part of Broader Health Reforms

When the newly established Mandatory Health Insurance fund (MHIF) began health insurance in 1997, significant progress had already been made in national health policy development and pilot implementation. The roll-out of the health reform model had begun, including formation of new family group practices (FGPs), free choice of FGP and population enrollment, introduction of family medicine, and development of new provider payment and information systems. However, it was the implementation of the case-based hospital payment system with 13 hospitals contracted by the MHIF in 1997 that really initiated health financing reform. A decision was made that the payroll tax funding generated by the health insurance system would serve as an additional or supplemental benefit, in effect reducing population copayments. This supplemental benefit was largely channeled through the case-based hospital payment system.

The new hospital payment system became the driver of the next and expanded phase of the health reform program in 2001, when a single-payer system was piloted (and rolled out nationally by 2004) and all hospitals were part of the case-based payment system.

Design and Implementation of the Case-Based Payment System

One of the characteristics of the Kyrgyz Republic's health reform process was step-by-step implementation and a

focus on institutionalization, which had political, technical, and operational benefits. Politically, it facilitated the building of support for both current and future steps. Technically, it allowed a process of experimentation and refinement. Operationally, it built capacity through actual implementation experience, which increased the understanding and ownership of the reforms among the government, the MOH and MHIF, and providers, as well as providing the major development asset of time.

Initially, 13 hospitals were selected to be brought into the new case-based hospital payment system in 1997. Their eligibility to participate was linked to health facility accreditation. This criterion also helped stagger implementation and avoid overwhelming the young and fragile MHIF. After the first year participation was expanded to 36 hospitals, and by 2001 all 66 general hospitals in the country were participating in the new payment system.

The case-based hospital payment system began by including only variable costs, which was an important element of this step-by-step approach. Only variable costs directly related to patient care were reimbursed through the new system, while the budget still paid for fixed costs. Hospitals could use the incremental funds from the case-based payment system to purchase drugs, supplies, and food, and to fund performance-based staff bonuses. This resulted in positive support for health insurance both from the population, since copayments for drugs and supplies were reduced, and from providers, since salaries were supplemented with bonus payments.

The case-based hospital payment system in the Kyrgyz Republic matured along with the reforms. The system started as a simple system of 28 groups based on data available combining department-level groups with diagnosis-based case groups. By 2005 the system was completely diagnosis-based, with about 150 groups and a well-developed HIS, including an automated billing and accounting system that has processed about 3 million discharged cases since its inception.

The case-based hospital payment system prompted greater hospital autonomy to allocate resources, which led to a perceived improvement in hospital management functions and systems. Accustomed to a high level of central control, hospital managers did not immediately believe that they would have greater autonomy nor readily understood what to do with the autonomy. After about six months, though, their perspective had completely changed. They ran with the autonomy and rapidly began improving management functions and systems.

The HIS, used for billing in the case-based hospital payment system, was also used to assess the types of cases that the hospitals were treating. Accounting, including management and cost accounting, had improved and hospital managers were starting to use it for financial analysis as well as the routine recording of expenses. They had a better understanding of the need to match revenues and expenses and were more aware of what neighboring hospitals were doing. They had also considered and improved their procurement processes for supplies and drugs. Very importantly, most of the hospitals had established a personnel committee to decide on the procedures for allocation of performance-based staff bonuses.

Outcomes in the Health System Driven by the Case-Based Payment System

In 2001 the government established a single-payer system with both the general revenue health budget and health insurance payroll tax funds pooled in the MHIF, which served as the single payer under the MOH. By 2004 the single-payer system had been largely implemented throughout the country. Some dramatic results of the reform process, a cornerstone of which is the case-based hospital payment system, have been achieved:

Streamlining of the delivery system and reduced excess capacity. Common financial incentives rewarding the rationalization of excess hospital capacity and increasing efficiency enabled dramatic restructuring and rationalization. Results show that one of the major challenges of the health system inherited from the former Soviet Union was addressed—excess capacity in the hospital sector was rationalized, with savings reinvested in direct patient care such as drugs and increases in very low health professional salaries. Hospital capacity was reduced by at least 40 percent by 2004.

The allocative efficiency of the health system improved. The share of health care expenditures devoted to PHC more than doubled from 15 percent to 38 percent between 2001 and 2007.

The technical efficiency of hospitals has increased. The share of health expenditures allocated to direct patient care expenses increased from 16 percent to 33 percent between 2001 and 2007.

Improved service delivery and quality improvement. One example is the connection between the health insurance program and facility accreditation. A hospital was not permitted to enter and be reimbursed by the health insurance system until it was accredited.

Overall, new provider payment systems (including a capitated-rate payment system for FGPs) have been driving realignment of roles and relationships in the health sector in the Kyrgyz Republic, development of the MHIF as health purchaser, and substantial and critical organizational behavior change among providers.