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Prospective Case-Based Payment for Hospitals: A Guide with Illustrations from Latin America

Prospective Case-Based Payment for Hospitals: A Guide with Illustrations from Latin America

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ACRONYMS

CBR	Case-based reimbursement (same as case-based payment)
CC	Complications and comorbidities
CCSS	Caja Costaricense de Seguro Social – Costa Rican Social Security Fund
CMG	Case mix groups
CMI	Case mix index
CPAC	Cost per average case
CW	Cost weight
DDM	Data for Decision Making
DRGs	Diagnosis related groups
EPS	Entidades Prestadoras (Promotoras) de Salud – Health Care Provision (Promotion) Entities, Peru (Colombia)
FONASA	Fondo Nacional de Salud – National Health Fund, Chile
FPMD	Family Planning Management Development
HCFA	Health Care Financing Administration
HPU	Hospital Payment Units, Costa Rica
HRGs	Health resource groups
IMSS	Instituto Mexicano del Seguro Social – Mexican Social Security Institute
LAC	Latin America and the Caribbean
LAC	Latin America and Caribbean [region, countries]
LOS	Length of stay
MCOs	Managed care organizations
MDC	Major diagnostic category
MoH	Ministry of Health
PAD	Pago Asociado a Diagnóstico – Diagnosis Related Payment, Chile
PAHO	Pan American Health Organization
PHR	Partnerships for Health Reform
PPC	Pago por Prestaciones Complejas – Payment for Complex Services, Chile
PPP	Pago Prospectivo de Prestaciones – Prospective Payment for Service Provided, Chile
PR	Payment rate
RVS	Relative value scale
USAID	United States Agency for International Development

ACKNOWLEDGEMENTS

This document, *Prospective Case-Based Payment for Hospitals: A Guide with Illustrations from Latin America,* is one of a series of three publications dealing with concepts in provider payment mechanisms with examples from Latin America and the Caribbean. I would like to express my sincere gratitude to Christopher Bross and Kathleen Novak for their helpful suggestions and insightful editing that have made the publication of these documents possible.

1. INTRODUCTION

For those policy makers, regulators, purchasers, and providers of health care who are considering alternative payment options for hospitals in their countries, this guide provides basic information on one option commonly referred to as case-based reimbursement, or reimbursement per discharged patient.

Case-based reimbursement is a hospital payment system in which a hospital is reimbursed for each discharged inpatient at rates prospectively established for groups of cases with similar clinical profile and resource requirements. Case-based reimbursement rates reflect historical costs of both individual hospital and the entire network of hospitals. However, unlike historical budgeting, this mechanism creates incentives for hospitals to reduce costs per case.

The transition to cost-based reimbursement represents the main thrust of hospital financing reforms over the past 20 years. This payment mechanism attracts the attention of reformers who want their national hospital sectors to be more productive, responsive to consumer expectations, and adaptable to changes in the demand for services.

The audience for this guide may be divided into two groups of reform-minded health administrators. The first group is comprised of those looking for conceptual and policy choices that would define future reform agendas in their countries. The second group is represented by those who have already progressed towards the introduction of case-based reimbursement and are currently seeking more detailed knowledge of underlying financing and management tools in order to enable further advances and/or a corrective action.

The basic knowledge of case-based reimbursement provided by this guide allows health policy leaders to decide whether they want case-based reimbursement and, if yes, how to proceed with its implementation.

Three important issues for hospital financing reform are addressed:

A technical understanding of case-based reimbursement. Decision-makers need to dissipate fears, uncertainty, and misconceptions resulting from lack of information. The guide provides information about how rate schedules are designed, what clinical and cost information is indispensable for the development of case rates, how hospital-specific payments are determined based on facility costs, and regional or national reimbursement rate schedules.

An operational perspective on case-based reimbursement. The guide emphasizes that case-based reimbursement should be applied in combination with other payment mechanisms, such as global budgeting, in order to control the intensity of potentially problematic effects, which may result from provider competition, structural change, or excessive utilization of care. Any one of the above-named phenomena, unless properly regulated and managed, may result in escalation of cost and political conflict and can jeopardize the reforms.

This guide's objectives are:

- To dissipate common fears and uncertainty regarding case-based reimbursement with a clear view of its technical workings
- To explain how case-based reimbursement interacts with other payment and budgeting tools in the real world of hospital financing
- To outline the phase-in strategy for case-based reimbursement implementation

Required transition strategies. This guide will provide suggestions for how case-based reimbursement may be phased in, element by element, in order to advance the reforms consistently and at a sustainable pace.

2. KEY CONCEPTS AND DEFINITIONS

The design of case-based reimbursement addresses three basic questions:

- How to define the product of hospital activity?
- How to price that product?
- How to relate payment to price and clinical volume?

The answers to these questions involve the following basic concepts and definitions:

Patient Discharge is widely considered as the best proxy for hospital output in the inpatient segment of hospital operation. For the purposes of case-based reimbursement, to be considered a discharged patient, a patient must meet two criteria:

- Be admitted to a hospital, thus, becoming an inpatient;
- Be discharged from a hospital, i.e., released home, transferred to another hospital facility eligible for case-based reimbursement, leave against medical advice, or die while an inpatient.

A ***Participating Hospital*** is a facility classified in one of the hospital types to which case-based reimbursement is applied. The payment mechanism usually covers short-stay general and specialty hospitals that deal predominantly with acute care. Psychiatric and other long-term care institutions would be excluded from participation.

Inpatient versus Outpatient. Modern hospitals treat patients as outpatients, day patients, and inpatients. Outpatients are seen and treated, primarily, in the hospital outpatient department. Day patients may be treated in all hospital settings and have medical conditions that require a diagnostic or surgical procedure invasive enough for keeping the patient on a daycare or general bed for a limited period of time, usually less than 24 hours. Inpatients are admitted to an intensive care unit or clinical department for more than one day and are reported accordingly through a daily occupancy census conducted in many hospitals at midnight.

Hospital Case Mix. Discharged hospital patients differ from one another in three important ways: medical conditions at time of admission, medical treatment, cost of treatment. A case mix is a population of hospital inpatient cases that reflect the diversity of clinical complexity and resource requirements of hospital-based medical practice.

Case Mix Groups (CMGs) are used to classify hospital patients. Groups are formed by cases with similar clinical characteristics and resource requirements. The clinical similarity of cases is determined, primarily, on the basis of such grouping criteria as primary and secondary diagnoses, surgical procedures, patient age, and discharge status. In some case mix grouping systems, the groups are called diagnosis-related groups (DRGs) because principal and secondary diagnoses play a prominent role in the grouping process. In the United Kingdom the term health resource groups (HRGs) was chosen to emphasize the cost homogeneity of case mix groups.

Case Mix Relative Value Scale (RVS) represents a set of cost weights by case mix group. *Cost weights* are average costs in each case mix group related to the average cost per case in the entire case mix. Therefore, cost weights are the ratios measuring relative resource intensity of case mix groups. Cost weights are usually calculated on the basis of weighted average costs of all the hospitals participating in case-based reimbursement.

A Case Mix Index (CMI) is the average cost weight of a hospital-specific case mix. It is calculated as the average of cost weights of all case mix groups represented in the hospital patient flow, weighted by the number of cases reported in each group.

Case Mix Payment Rates are prices at which each particular hospital is reimbursed for treating a patient in a given case mix group. A rate is determined by multiplying the case mix cost weight (set uniformly for the entire hospital network) by the hospital-specific base rate. In the early stages of implementation, the hospital's base rate is determined solely using the hospital's average cost per case. However, to promote efficiency, the hospital base rate may be calculated by *blending* the hospital-specific average costs with the network-wide average costs. More specific information regarding blending of payment rates appears in the Rates and Payments section of this guide.

Outlier Payments supplement the reimbursement of hospitals for cases with abnormally high length of stay. However, outlier payments may also be lower than a standard case mix group rate if length of stay is significantly lower than the historical average for a specific case mix group.

RVS for All Hospitals:

	Cost Per Case	Cost weight
$Group_1$	$135	1.35
$Group_2$	$ 90	0.90
$Group_3$	$ 75	0.75
Average	$100	1.00

CMI for Hospital A:

			Cases		Weights
Gr_1	81.0	=	60	x	1.35
Gr_2	72.0	=	80	x	0.90
Gr_3	90.0	=	120	x	0.75
CMI	243	/	260	=	0.93

Payment Rates for Hospital A

Hospital CMI = 0.93

Network base rate = $120

Hospital-specific base rate: $120 / 0.93 = $129

	Base Rate		Cost Weight		Payment
Gr_1	$129	x	1.35	=	$174
Gr_2	$129	x	0.90	=	$116
Gr_3	$129	x	0.75	=	$97

3. DEFINING AND ADMINISTERING CASE MIX GROUPS

Under case-based reimbursement, rate setting requires the use of case mix groups. The methodology of case mix grouping is an important component of case-based reimbursement design and customization to specific country settings.

3.1 PRINCIPLES IN GROUP DEFINITION

The fundamental assumption behind case mix grouping is that the demographic, diagnostic, and treatment profile of a hospital case determines its resource requirements. A viable methodology of case mix grouping should match the following principles:

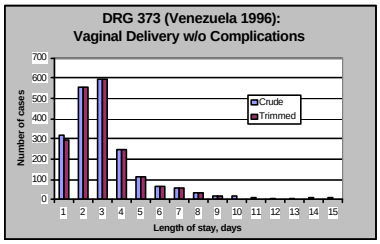
Comprehensive coverage of hospital cases. Every inpatient that is admitted to a participating hospital must be assigned to a group. Rare cases and low-volume groups may be blended into wider case mix bands.

Reliance on existing hospital reporting. To the extent possible, required case-level information should be limited to data routinely entered into medical records, discharge abstracts, and other established forms of reporting. Except, perhaps, for secondary diagnoses and surgical procedures, most patient data used in case grouping is available from hospital reporting in any given country. Additional information requirements should be kept at a minimum.

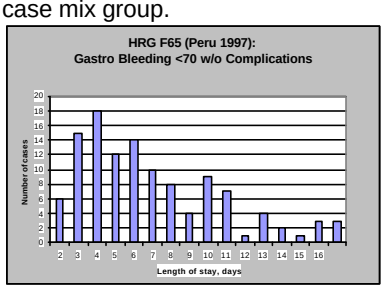
Administrative and Statistical Viability. The number of groups should be sufficient to assure their clinical homogeneity. At the same time, inappropriate fragmentation of the case mix affects the statistical quality of the groupings. The total number of case mix groups may be in the hundreds, but not thousands.

Clinical Coherence. Each case mix group should contain cases with similar clinical characteristics. For example, cases classified in the same group should relate to a common organ system and/or etiology and should be treated in the same clinical specialty where possible. However, practical experience suggests that the requirement for the groups to be clinically coherent generates more patient groups than is necessary for explaining resource intensity variations alone.

Cost Homogeneity. Patients in each group should be treated with similar amount of resources. This is also referred to as *iso-cost grouping*. The resource intensity patterns may vary considerably among regions and countries. While clinically coherent groups may be formed in one country and transplanted to other countries (with appropriate adjustments), refinement of groups for cost homogeneity must be based on the local patterns of cost variation.



DRG 373 has a close to normal case distribution by LOS. These cases are rightly assigned to same case mix group.



HRG F65 has a more hectic, multi-modal case distribution by LOS, suggesting the presence of 2 case mix groups – one medical and one surgical. Most likely, F65 was incorrectly specified due to a hospital's failure to account for surgical procedures.

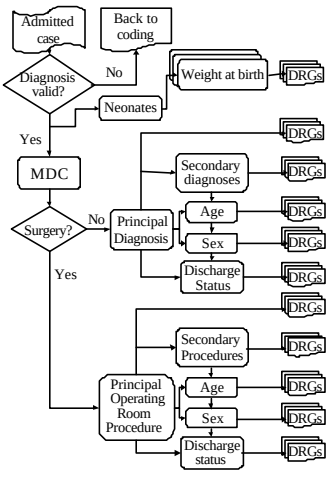
Limited Opportunities for Upcoding. Hospitals should have minimal opportunities to assign a patient to a higher payment rate through upcoding, or "case-mix creep". An excessive number of groups based on subtle distinctions would make the case mix highly susceptible to this temptation. Therefore, case mix groups should be as broad and inclusive as possible without sacrificing either clinical coherence or resource homogeneity.

3.2 GROUPING CRITERIA

The most popular case mix grouping system, diagnosis-related groups (DRGs), was initially designed in the United States for the Medicare and Medicaid health insurance programs. Subsequently this case mix grouping system was modified into All-Patient DRGs to overcome biases caused in the original DRG system by the predominance of elderly people in the Medicare case mix. The DRG system has been exported to many European nations and Australia and is probably the most ubiquitous international case mix grouping methodology. The DRG system is based on clinical classification systems designed in the United States specifically to serve the needs of case mix grouping. If another country seeks to introduce DRGs it will have to use a cross-walk software offered by American developers but not necessarily reflecting the national peculiarities of hospital case mix of the importing country.

The following variables are involved in the grouping process: major diagnostic category (MDC), principal diagnoses, secondary diagnoses (comorbidities and complications), operating room principal and secondary procedures, patient age and sex, discharge status, and birth weight (for neonates).

DRG GROUPING VARIABLES AND ALGORITHM



The patient classification algorithm is driven largely by the clinical criteria and includes the following variables and steps:

1. Within each MDC, cases are subdivided into medical and surgical. The medical-surgical distinction is driven by the assumption that resource intensity is significantly higher for surgical cases due to the cost of the operating room, anesthesiology, the intensive care unit, and operating surgeons, if they are part of the hospital staff. Surgical patients undergo a surgical procedure requiring utilization of the operating room. All other cases are medical. Of the 641 All-Patient DRGs, 359 are medical and 280 are surgical.

2. Medical patients are grouped into DRGs by principal diagnosis at time of admission. Diagnoses define any of the following three categories: (i) disease, (ii) an external cause of injury and poisoning, (iii) a medical contact under circumstances other than disease or injury, e.g., for a specific planned or routine treatment such as renal dialysis.

3. Surgical patients are assigned to DRGs by principal operating room procedure. When multiple surgeries are performed, the principal procedure comes from the highest surgical class, i.e., from a group of procedures that has the highest average resource intensity in a particular MDC. Surgical classes are formed within each

MDC for procedures relating to the same organ, surgical technique, pathology or etiology. How surgical classes are formed varies by MDC.

4. Once cases have been assigned to DRGs on the basis of primary diagnosis and principal procedures, they are further subdivided according to the presence of comorbidities and complications, i.e., secondary diagnoses. Secondary conditions are recognized as comorbidities and complications if they increase the length of stay by a minimum number of days in at least certain percentage of cases (for DRGs, by 3 days in 75% of the cases). Some secondary diagnoses may not be comorbidities and complications for a given principal diagnoses on clinical grounds, e.g., if those are chronic manifestations of the same disease, specific and nonspecific diagnoses, incompatible diagnoses (benign/malignant), or closely related conditions. Of the 641 All-patient DRGs, 299 groups use comorbidities and complications (i.e. secondary diagnoses) as a grouping variable.

5. Further subdivision may be based on sex and age. Sex is important to verify diagnoses that are specific to females or males. Various age thresholds are used for patient classification, e.g., 29 days (neonates), 1 year (tertiary aftercare), 17 years (pediatric asthma patients), 35 years (for patients with diabetes), and 69 years (elderly). Age is used in case assignment to 169 All-patient DRGs.

6. Patient discharge status is also used as a DRG grouping variable. Along with such generic definitions as “released home”, “died”, “transferred to another facility”, the DRG system further distinguishes more specific reasons for discharge, e.g., “left against medical advice” or “burn patients transferred to another acute care facility”. Most of the circumstances listed above imply interruption of the hospital stay and, therefore, significantly affect the amount of resources required to treat corresponding cases.

7. Birth weight serves as the initial criterion of assigning patients to one of 47 neonate DRGs. The birth weight is not coded separately but through a fifth digit of diagnosis codes applicable to newborns. The following six weight ranges are distinguished: <750 g, 750-999 g, 1-1.5 kg, 1.5-2 kg, 2-2.5 kg, >2.5 kg

8. Inconsistent clinical information usually leads to the assignment of a case in one of several residual DRGs.

The DRG system uses diagnosis codes of ICD-9-CM (Clinical Modification of ICD-9), and starting in October 2001, ICD-10-CM (Clinical Modification of ICD-10). Similar to DRGs, the same main grouping variables are involved in the formation of British health resource groups (HRGs). Those variables, however, are interconnected somewhat differently in the HRG grouping algorithm. There are 572 HRGs, including 314 diagnosis- and 251 procedure-based groups. HRGs are based on ICD-9 and ICD-10 for diagnosis coding, and on OPCS-4 (4^{th} revision of the Office of Population Censuses and Surveys service codes) for procedure coding.

4. RATES AND PAYMENTS UNDER CASE-BASED REIMBURSEMENT

Case-based payments consist of a standard payment based on 1) CMG rates, and/or 2) outlier payments.

4.1 STANDARD PAYMENT

As defined earlier in this guide, hospitals functioning under a case-based reimbursement system are paid per discharged patient at a rate determined prospectively for each case mix group. The term "case mix group" is used hereafter as a generic term to denote each group of cases with similar clinical characteristics and resource requirements.

To calculate standard payment rates (PR) by CMG for a specific hospital, divide the individual hospital's base rate, e.g., a *cost per average case* (CPAC) by the hospital's *case mix index* (CMI). Then multiply the resulting amount by the *cost weight* (CW) of the CMG to which the specific case is assigned. Each CMG weight represents the network-wide average resources (for all hospitals participating in a given case-based reimbursement network) required to care for cases in that particular CMG relative to resources used to treat an average case in all CMGs.

PAYMENT RATES FOR HOSPITAL "A":

$$\begin{Bmatrix} CW_1 \\ CW_2 \\ . \\ . \\ CW_n \end{Bmatrix} x \frac{CPAC_A}{CMI_A} = \begin{Bmatrix} PR_1 \\ PR_2 \\ . \\ . \\ PR_n \end{Bmatrix}$$

A hospital base rate is calculated as the blended rate, i.e. as the weighted average of the hospital-specific average case costs and the network-wide average case costs. For example, for the second year, the hospital base rate would be weighted at 75% of the hospital average costs and 25% of the network average costs. The facility and network weights comprising the blended rate are usually shifted over a number of years from the initial predominance of facility costs to the eventually undivided dominance of network-wide average costs.

A RECOMMENDED TRANSITION TO NETWORK-WIDE AVG. CASE COSTS:

	Hospital Average	Network average
1st Year	100%	0%
2nd Year	75%	25%
3rd Year	50%	50%
4th Year	25%	75%
5th Year	0%	100%

CMG rates are usually adjusted for regional variation in input cost – primarily salaries. Additionally, payment rates may be differentiated by hospital level. Teaching hospitals would be entitled to a higher payment, given their generally higher resource intensity. Rural facilities would be paid at a lower rate for the same CMG, consistent with their lower resource intensity. However, the variation of CMG rates due to difference in provider status should be reduced over time. Some argue that the cost of teaching activities should not be fully included in CMG rates since funding for many of these activities comes from research and development programs and is not based on the number of patients treated.

4.2 OUTLIER PAYMENT

Outlier reimbursement addresses situations in which specific cases fall significantly above or below CMG averages. Two criteria provide the basis for determining whether an individual case is an outlier: length of stay (LOS) and costs. These two criteria can be applied individually or in combination. Under the LOS criterion, a case is eligible for outlier payment if the LOS deviates considerably from the CMG's average LOS. Under the cost criterion, a case is considered to be an outlier if the cost diverges significantly from the CMG's average cost. Defining outlier payments based on LOS is preferred because LOS is a less ambiguous and better-reported indicator than case-based costs.

CALCULATING OUTLIER PAYMENTS

Inputs

CMG average LOS	6 days
Case "A" LOS	12 days
Case "B" LOS	2 days
Upper outlier threshold	150%
Lower outlier threshold	50%
CMG standard rate	$240
Percent variable cost	60%

Case "A"

LOS>150% of CMG average LOS, hence, qualifies for an upper outlier payment at the amount calculated as follows:

6 days x 150% =	9 days
12 days – 9 days =	3 days
$240/6 days =	$40/day
$40 x 60% =	$24 (variable)
$24 x 3 days =	$72
Payment: $240 + $72 =	$312

Case "B"

LOS<50% of CMG average LOS, hence qualifies for a lower outlier payment at the amount calculated as follows:

$240/6 days =	$40/day
Payment: $40 x 2 days =	$80

Outlier cases are classified into two sub-categories: upper outlier cases and lower outlier cases. An upper outlier occurs when the LOS exceeds a certain percentage of the CMG average LOS, e.g. 150%. In a lower outlier case, the LOS falls below a certain percentage of the CMG average LOS, e.g. 50%. The respective numbers are called upper and lower outlier thresholds.

In the event of an upper outlier case, hospitals receive an additional per diem payment for each day of care that equals or exceeds the upper day threshold. The per diem payment can be calculated by multiplying the per diem rate for the applicable CMG by the percentage share of the variable costs in the hospital operating budget. The share is determined by the breakdown of hospital budgets according to fixed and variable costs. The breakdown and, therefore the share of variable costs, may be mandated by the payer at a uniform rate for all participating hospitals.

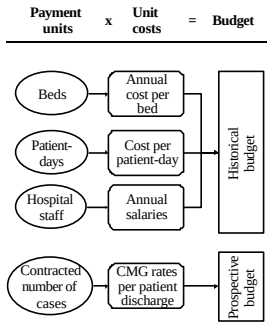
In the event of a lower outlier case, hospitals may receive a per diem payment for each day of care provided. While the upper outlier payment is made *in addition to* the standard CMG rate, the lower outlier payment *replaces* the standard CMG rate.

Health care purchasers can utilize the outlier payment mechanism to shift the risk of overspending to the hospitals. The parameters of an outlier payment mechanism are determined by a model in which the share of outlier payments in the total amount of hospital reimbursement is the controlled variable. Over time, a purchaser will be able to identify problems with certain participating hospitals or with the payment rates based on the quantity of occurrences of outlier cases.

5. THE ROLE OF CASE-BASED REIMBURSEMENT IN HOSPITAL FINANCING

Hospital financing is based on a combination of payment and budgeting tools. Payment tools determine the method(s) of financing per unit of hospital resources or output, while budgeting tools establish the total amount of financing in annual terms. To illustrate how payment and budgeting tools interact, let us consider historical and prospective budgeting. Historical budgeting is usually based on unit norms of financing per patient-day and/or hospital bed, multiplied by a reported number of days and beds. Prospective budgeting is based on case-based payment rates for inpatient care, service-based rates for outpatient services, and predetermined clinical volume in both in- and outpatient segments of hospital operation. Stated differently, a resource-related payment unit multiplied by volume of physical resources results in hospital historical budget. An output-related payment unit multiplied by projected clinical output results in hospital prospective budget. Since projection of clinical output is based on historical levels, the historical budget serves as the starting point for planning a prospective budget.

PAYMENT AND BUDGETING TOOLS FOR HISTORICAL AND PROSPECTIVE BUDGETING



5.1 FEE-FOR-SERVICE

Although this guide does not focus on payment for hospital-based outpatient services, the topic cannot be disregarded completely. During discussion of inpatient reimbursement, hospital managers typically ask about reimbursement for ambulatory consultations, diagnostics, and surgeries. A practical approach to hospital budgeting requires that methods of payment should be defined for and coordinated between the in- and the outpatient parts of the hospital operation.

Fee-for-service is an acceptable method of payment for hospital outpatient services. Service rates may be averaged across groups of services with similar clinical features and resource requirements. For example, in the U.S., 346 ambulatory patient classes have been designed for hospital-based outpatient consultations.

Fee-for-service provides a stimulus for hospitals to increase ambulatory activities. To enable this incentive, the purchasing agency may decide to set an increased global budget for outpatient care. To guarantee that the total amount of hospital expenditure is contained, the payer may merge the outpatient and the inpatient budgets into an integrated global budget, with the outpatient part gradually being increased at the expense of the inpatient part.

5.2 GLOBAL BUDGETING

The main objective of prospective global budgeting is to keep in check the undesirable side effects of case-based reimbursement, i.e. to prevent hospitals from excessive admissions and utilization of services. In addition, prospective global budgeting regulates the pace of market redistribution that otherwise might go out of control, driven by the expansionist market behavior of the leading hospitals.

As mentioned above, CMG rates are based on historical costs and numbers of patients discharged from participating hospitals. Although this number may change due to evolving demand for hospital services, it is particularly susceptible to change due to incentives for the hospitals to increase their productivity, admit more patients, and earn more revenue under case-based reimbursement. If many facilities succeed in taking advantage of the new payment method, the national and/or regional hospital budget may run out of funds, and health financing will be pushed in the opposite direction from the desirable one – more funds will have to be allocated to the hospital sector instead of the primary sector. To avoid this outcome, a purchaser of care could impose limits on clinical volume of participating hospitals.

"Hospital "A" will treat 9,850 patients ± 5% with the CMI=0.92 ±10%. It will be pre-paid at CMG rates by monthly installments with quarterly adjustment for case-load variance"

A global budget requires hospital caseload projections, i.e. the number of cases multiplied by the hospital case mix index. Limiting the hospital clinical volume is tantamount to limiting annual expenditure. Through a global budget contract, the payer places an order for a certain volume of inpatient services that is measured by the number and average clinical complexity (resource intensity) of discharged patients.

If a hospital exceeds the budgeted number of patients, it will be reimbursed for the additional cost. However, the excess payment will go, in full or in part, toward a reduction of next year's rates. If a hospital experiences a lower-than-targeted volume, it will loose part of its revenue planned under the global budget, but it will receive higher rates in the next year. This type of rate adjustment mechanism stabilizes the clinical volume and market quotas by hospital. If the payer feels that the provider networks contains redundant productive capacity, it can gradually decrease the clinical volume and global budget of relatively inefficient and/or under-utilized facilities. The best performers may be allowed to grow, but gradually, so as not to disrupt the established practices of hospital fund allocation, nor to instigate drastic redistribution of the hospital market, which could drive the less competitive facilities out of business and put the reform process under political pressure. Since CMG rates and case-load are prospectively fixed under global budgeting, a hospital's main incentive is to earn its predetermined revenue while incurring less cost, thus maximizing net revenue. Therefore, the combination of case-based reimbursement and global budgeting strongly encourages cost-efficiency.

6. PHASE-IN STRATEGY

The transition to an incentive-based prospective payment system represents a major change in hospital management. Such a change requires a reasonable period of time and calls for a 3 to 5-year phase-in strategy. Following are various steps required for phase-in of case-based reimbursement:

1) It is strongly recommended that a new payment and budgeting system is piloted before full-fledged implementation is mandated for the entire hospital sector. The best way to select viable pilot regions and facilities may be to survey hospitals and regional health administrations or other public purchasing agencies in order to find out which of the regions provide the largest motivational resources for a case-based reimbursement pilot project. These would be regions with hospitals and health administrators who are dissatisfied with the current financial status of public hospitals, accept the basic incentives of case-based reimbursement, and feel confident that they are able to withstand financial risks and managerial challenges involved in case-based reimbursement while benefiting from new incentives.

2) The coordinators of the pilot at the national level should facilitate the choice of a case grouping system and the underlying clinical classifications. Clinical information required by the preferred case grouping system should be built into the standard patient discharge form.

3) The revised discharge form should be introduced into hospital coding, such that all the information necessary for case assignment to a CMG is gathered on every patient discharged from a pilot facility. Collection of patient data should continue for one year in enough facilities to accumulate at least 150,000 cases. For sample design purposes, the hospitals chosen for the pilot should be representative of various types of providers existing in the national hospital sector. This creates a sample population that resembles the nation-wide hospital system.

4) At the same time, case-level costing should be conducted in the hospitals participating in the clinical coding work. It should generate information on the average costs per medical and surgical patient-day in each clinical specialty.

5) The pilot case file, consisting of cases coded according to a new patient discharge form, should be processed with a grouper software from the chosen case grouping system. The software will assign each case to a case mix group. Average length of stay will be calculated for each CMG. Average costs per CMG can then be estimated based on the specialty-wide average cost per medical and surgical patient-day.

6) The relative value scale should be calculated from a sample of pilot hospitals. The case mix index is assessed for each hospital. Each hospital's base rate is calculated by adjusting the hospital-specific historical average cost per discharged patient for the case mix index.

7) A CMG rate schedule should be developed for each hospital by multiplying the hospital's base rate by the cost weight of each CMG.

8) A pilot-wide rate schedule should be calculated by determining the weighted average of the CMG-specific costs for all participating hospitals. Each hospital's share in the aggregate volume of the respective CMG will serve as the weighting factor.

9) Facility-specific and network-wide payment rates will converge over a number of years. To facilitate such convergence, hospital-specific rates will be blended (weight-averaged) with the sample-wide rates. The statistical weight of sample-wide rates will grow from year to year until it reaches 100% over a period of 3 to 5 years.

10) Case-based payment for inpatients will be supplemented with service-based payment for hospital-based outpatient services and global budgeting of a hospital as a whole.

If no evidence on costs is available prior to the introduction of groups, grouping should be carried out initially on the basis of clinical criteria alone. Thus, case mix group design is viewed as an ongoing, iterative process – decisions originally found optimal would be periodically overridden by better decisions that are based on the newly acquired evidence on costs and utilization of care.

7. COUNTRY CASES

7.1 REGIONAL REVIEW

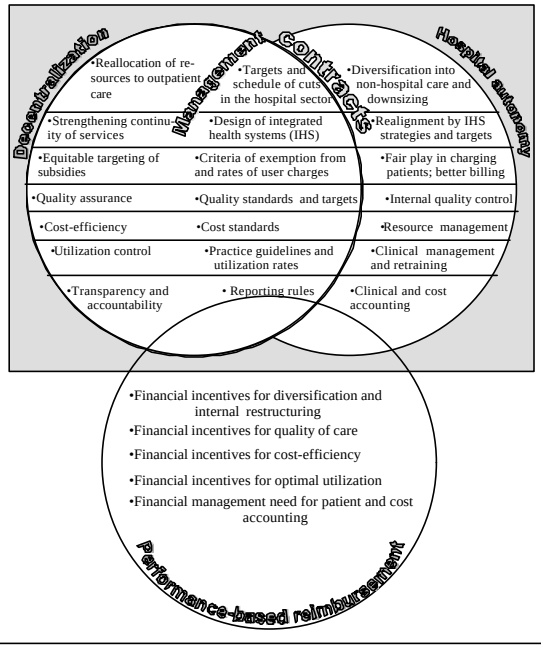
Over the last decade, decentralization of health financing and autonomization of service provision have driven hospital reforms in Latin America. Decentralization implies devolution of fiscal powers from a national government to regional authorities. Regions are encouraged to be increasingly self-reliant, i.e. maintain their budgetary programs, including health, on revenue from locally collected taxes and savings gained from pro-efficiency reforms. Proportionate to their growing fiscal autonomy, regional administrations are granted more power in the formulation of health policy priorities and selection of means to implement those priorities.

A decentralized environment makes health policy and budgets more responsive to local needs, as long as the regional government is conducive to these needs in its resource allocation strategy. However, if local decision-making results in a miscalculation, there will be little financial backup from the national government to compensate for the error.

To maximize the advantages and contain the risks of decentralization, regional health administrations deregulate health service delivery. By turning health facilities into autonomously managed entities, they put their motivational and management resources to work to achieve a more effective and efficient provision of medical care to the local population. Increased provider autonomy means an advancement of decentralization from the regional to the facility level. It serves as a logical and indispensable match to the liberalized relationship between the federal and regional levels.

Figure 1. Three spheres of hospital reform

Hospital reform agenda common for most LAC countries



Decentralization and hospital autonomy create a bipolar motivational framework in which regional health administrations and hospitals seek to align their objectives, decisions, and operations by shared goals of political and financial survival.

Management contracts have been chosen in several LAC countries as the legal interface for coordination of institutional will of the regional- and facility-level authorities in the hospital sector. Management contracts aim to identify synergetic solutions under the common agenda of decentralized regional health administration and deregulated hospitals.

Figure 1 displays essential components of this agenda. The left circle lists the issues usually set out in contract negotiations by the regulatory/purchasing center. The right circle

features ways in which a hospital seeks to adjust to regulatory requirements. The overlapping area represents terms and conditions of the management contract that commit both parties to certain lines and targets of collaboration as well as reconciling regulatory goals with the hospitals' ability to implement them. Both circles are framed into a rectangle that delimits the scope of a typical hospital reform in the LAC region. The third circle, largely outside the reform agenda, shows a set of hospital incentives associated with performance-based reimbursement, e.g., a case-based payment system. This circle is only tangentially involved in the current hospital reforms. Financial incentives are excluded, which curtails hospital motivation and consequently, the enforceability of hospital management contracts. The drawing in *Box 1* intends to communicate that a three-prong hospital reform, driven by decentralization, hospital autonomy, and performance-based reimbursement, could turn hospital reforms into a more vibrant and successful process than the currently prevalent two-prong strategy.

The above discussion reflects a lack of association between the quest of regional health authorities for equity, effectiveness, efficiency, and purchaser/provider split on the one hand, and performance-related methods of hospital reimbursement, on the other.

Of the closely reviewed countries of the region, with limited evidence from several others, only Brazil and Chile appear to use case-based methods of payment to some degree. In Brazil, the Unified Payment System (*Sistema Unico de Saúde*), reportedly, reimburses public and private hospitals through a DRG-like schedule. In the public hospital sector of Chile, experimentation with case mix payments has been underway for a number of years. Nevertheless, inside observers emphasize that the National Health Fund (*FONASA*), the public health financing agency, does not really reimburse hospitals on the basis of these rates and allocations remain essentially a process that is based on adjusted historical budgets.

In Argentina, the British Hospital in Buenos Aires has been mentioned as probably the only facility in the national hospital sector that attempts to introduce the DRG system from the United States.

Countries reviewed in this guide in more detail are at various levels of conceptual design and preparation for experimental trials involving case-based reimbursement.

7.2 CHILE

Until 1978, the Ministry of Health financed public hospitals through budgetary allocations based on historical trends. In 1978 a fee-for-service reimbursement system, known as Billing for Services Provided (*Facturación por Atención Prestada – FAP*), was adopted. Since early 1990's, hospital funding has been evolving into a more diversified system, including the following three methods:

1) Prospective Payment for Service Provided (*Pago Prospectivo de Prestaciones – PPP*). This is traditional fee-for-service method of provider reimbursement.

2) Diagnosis-Related Payment (*Pago Asociado a Diagnóstico – PAD*). Hospitals receive their payment per treated case. Payment rates are established by a broadly defined case mix category.

3) Payment for Complex Services (*Pago por Prestaciones Complejas – PPC*). Complex procedures, such as organ transplants, angioplasty, valvuloplasty, and hysterectomy, are reimbursed under separately established rates. PPC is halfway between fee-for-service and case-based reimbursement. It is focused on cases in which total case cost is heavily influenced by the cost of the principal surgical procedure.

PAD accounts for 1/3 of allocations to the public hospital sector. In mid 1990's, this system was successfully pilot-tested in several facilities and has been rolled out to more public hospitals since. The PAD rate schedule, initially comprising 25 diagnostic categories, now includes 30 case mix groups (see Table 1). PAD groups do not cover the entire case mix but rather focus on cases of significant volume and/or cost. PAD rates are differentiated by three hospital levels and by geographic location – for the so called "extreme areas", PAD rates are marked up by 12 to 30% of the standard. Rates are adjusted upward by 2 percent for teaching hospitals.

TABLE 1. DIAGNOSIS RELATED GROUPS IN CHILE AND RATES BY HOSPITAL LEVEL, 1996, IN CHILEAN PESOS

		HOSPITAL LEVEL		
	DIAGNOSIS PAD	1	2	3&4
1	Cholelithiasis	216,392	210,392	198,392
2	Appendicitis	121,392	117,092	109,092
3	Peritonitis	206,583	197,583	179,583
4	Uncomplicated abdominal hernia	100,929	97,929	91,929
5	Complicated abdominal hernia	273,243	264,243	246,243
6	Malign tumor, stomach	457,165	437,165	397,165
7	Complicated gastric ulcer	309,555	297,555	273,555
8	Complicated duodenal ulcer	270,524	260,524	240,524
9	Child delivery	131,351	127,851	120,851
10	Ectopic pregnancy	193,122	188,622	179,622
11	Complicated pregnancy	146,873	137,773	119,573
12	Uncomplicated abortion	86,996	84,996	80,996
13	Complicated abortion	199,036	192,036	178,036
14	Tonsillitis	99,257	96,457	90,857
15	Adenoids	128,103	125,303	119,703
16	Hyperplasia of prostate	281,521	270,821	249,421
17	Phymosis	104,620	101,820	96,220
18	Cryptorchidism	159,570	156,770	151,170
19	Jaundice of newborn	20,035	20,035	20,035
20	Acute bronchopneumonia	148,886	139,886	121,886
21	Cataract	221,012	219,012	215,012
22	Kidney transplant	1,228,120	1,222,120	1,210,120
23	Cardiosurgical procedure w/ major use of extracorporeal circulation (EC)	2,280,926	2,274,926	2,262,926
24	Same w medium use of EC	1,466,002	1,460,002	1,448,002
25	Same w minor use of EC	1,005,975	999,975	987,975
26	Vaginal prolapse, anterior or posterior	…	…	…
27	Intracraneal tumors or cysts	…	…	…
28	Aneurysms	…	…	…
29	Dysphasia	….	…	…
30	Hernia of pulpous nucleus	…	…	…

FONASA. Quoted from: Bitrán *et al.* Equidad en el Financiamiento del Seguro Público de Salud. Informe final. Vol.3. Santiago de Chile, 1996; Personal communications with Ms.Consuelo Espinosa, Bitrán y Asociados, August 1999.

7.3 COSTA RICA

In Costa Rica, the health care reforms of mid-1990's postulated the need to overcome inefficiencies resulting from historical allocation of resources by level of care and to specific providers. The Costa Rican Social Security Fund (*Caja Costaricense de Seguro Social -- CCSS*) proposed in 1998, as part of its modernization plan, that reimbursement should be linked to provider performance and population health gains. The separation of purchasing and provision of services was announced as the key policy. Management contracts are to be

signed between CCSS, as the purchasing agency, and physician practices, hospitals and 'health areas', as providers of care.

Management contracts with hospitals will specify performance targets related to quality, organization, and delivery of services. To achieve a viable balance between quality and volume, hospital contracts will relate payment to certain output measurements, such as number of discharges, hospital-based consultations, and other health activities. Hospitals will be encouraged to maximize production as long as their expenditure fits in a pre-determined global budget. Once the cap is exceeded, hospital care will be reimbursed at the amount of variable cost per specified production unit. Subsequent stages of the reform will feature gradual introduction of prospective payments related to the volume of hospital production adjusted for quality and complexity of care.

A pilot demonstration initiated in December 1996 involves seven hospitals that were transferred to management contracts signed between a hospital and a Medical-Administrative Division (local health administration). In 1998, the pilot was planned for extension to 10 more hospitals.

As of 1998, there was no direct mention of case-based reimbursement for Costa-Rican hospitals. However, the content and the language of the proposed and piloted reforms imply this method of payment and make its experimental implementation very likely in the near future.

In the 1997 CCSS policy document "Towards a New System of Resource Allocation", the concept of performance-based hospital reimbursement was elaborated in more technical detail. Hospital production is presented as a combination of four lines of activity: hospitalization; hospital-based ambulatory care; emergency services; and specialized health care programs, teaching, and research activities. All activities are measured in hospital production units (HPUs) and are related to one hospitalization (see Table 2).

TABLE 2. EQUIVALENCE RATIOS FOR HOSPITAL

PRODUCT PRICING PROPOSED IN COSTA RICA

HOSPITAL ACTIVITIES	HPUS
Hospitalization	1
Emergency	0.35
First visit to a specialist	0.40
First visit, other	0.25
Follow-up visit to a specialist	0.20
Follow-up visit, other	0.10
Dental visit	0.10
Visit not involving physician	0.05

Hacia un nuevo sistema de asignación de recursos. Proyecto modernización CCSS. San José, 1997: 52.

Hospital budgeting includes planning and projection of the following indicators:

1) *Allocated budget* is the annual funding cap close to the hospital baseline spending;

2) *Programmed budget* is the allocated budget minus 10% set aside in the *Incentive Fund* and *Solidarity Compensation Fund*;

3) *Projected clinical volume* is the aggregate number of HPUs reflecting projected inpatient and ambulatory volume. Inpatient HPUs are based on LOS standards set forth in the hospital contract.

4) Payment rates per activity-specific HPU are based on the hospital historical costs and administrative level. It is assumed that higher-level facilities should be paid at higher rates to allow for higher fixed costs.

5) *Production budget* is the total amount of revenues projected from each of the four hospital activities. Revenue by activity is the product of activity-specific clinical volume in HPUs (item three) multiplied by the activity-specific HPU payment rate (item four).

At the end of the fiscal year, reported expenditure (so called 'executed budget') is compared with the production budget (item 5). If executed budget exceeds production budget, the hospital will end up with a deficit. This may be viewed as inefficiency if the hospital required more resources than planned to produce the contracted clinical volume. The deficit will be compensated to the provider with a 'subsidy'. The hospital performance will come under scrutiny to identify possible roots of inefficiency.

If the executed budget stays equal to or below the production budget, this would mean that the hospital achieved the contracted clinical volume at the planned or reduced cost. Eight percent of the savings will be retained by the hospital and it will gain access to the Incentive Fund. The remaining 20% of the savings will be paid to the hospital for excess of the reported volume over the contracted volume (in the event that the hospital reported both the cost savings and the surplus of clinical volume). If this amount is insufficient for covering cost associated with extra volume, the gap will be reimbursed to the hospital from the Solidarity Compensation Fund.

If the hospital exceeded the planned volume at an additional cost, i.e., without reducing unit costs, additional expenditure will be reimbursed from the Solidarity Compensation Fund at 40% of the hospital HPU rate. The total amount of this reimbursement should not exceed 50% of the funds available in the Solidarity Compensation Fund.

As the implementation of the above described system advances, the HPU rates, initially adjusted for the hospital level, will be differentiated further according to a hospital-specific case mix index. Therefore, more funding per HPU will be allocated to hospitals with higher clinical complexity.

7.4 PERU

The main purchasers of hospital care in Peru are the Ministry of Health (MoH) and the Peruvian Institute of Social Insurance, renamed in 1999 as *EsSalud.* Health Care Provision Entities (*Entidades Prestadoras de Salud – EPSs*), mandated by the 1997 health legislative reform, are expected to grow into the third payer in the institutional layout of the Peruvian health sector. EPSs can be either public or private providers of group insurance coverage and medical services to employers who partially opt out of the EsSalud system. EPSs will operate on an increasingly competitive basis with EsSalud and one another. Seeking to provide care in a cost-efficient way EPSs could be more susceptible to the methods of hospital payment rewarding productivity. They may become a driving force behind the implementation of case-based payment mechanisms.

In 1998, by agreement with USAID-sponsored PHR and Project 2000, the MOH initiated a hospital payment pilot seeking to introduce the following reforms in the hospital sector of Peru:

1) Separate purchasing from provision of services;

2) Advance the management autonomy of hospitals;

3) Gradually introduce competitive contracting within the MoH-operated hospital sector and, in the longer-term, among all hospitals regardless of their jurisdiction and predominant source of funding;

4) Implement payment methods that encourage productivity and efficient use of hospital resources;

5) Set the stage for incremental structural modernization of the national hospital sector, both at the facility and at the network level.

According to a 1998 survey, the regional health care administrators and hospital directors in eight pilot territories of Peru share the following views on future payment mechanisms, consistent with the aforementioned objectives:

1) Hospitals should be funded according to a volume-related budget.

2) Volume and financing should be determined by the number and resource intensity of discharged inpatients and services provided to outpatients.

3) Both discharged inpatient cases and furnished outpatient services should serve as the units of hospital budgeting and reimbursement and should be priced at prospectively determined rates.

4) The rates should be averaged across groups of inpatient cases and outpatient services with similar clinical parameters and resource requirements.

For the pilot, the main options for inpatient grouping and rate setting are the all-patient diagnosis-related groups (AP DRGs) from the United States and the health resource groups (HRGs) from Great Britain. Under both methodologies, cases are assigned to groups on the basis of their clinical and cost homogeneity. The clinical and health administration community of Peru is expected to select a case grouping methodology by comparing the clinical requirements of each internationally established prototype methodology with the patient data available from regular hospital reporting in Peru. In any event, patient coding will have to be expanded to include currently unaccounted grouping variables equally important for the DRG and the HRG grouping mechanisms. It is not quite clear at this stage whether clinical coding skills and information resources in the hospitals of Peru are sufficient to import either of the options in their original sophisticated version. Short-cut adaptation is likely. Once a new patient coding form is adopted, eight pilot hospitals will start coding discharged cases as required by the selected grouping system. In a year from then, the electronic patient file will be processed by the grouper software and cases will be assigned to case mix groups (DRGs or HRGs).

Average costs will be calculated for each group across all the hospitals by multiplying the average per diem costs for a clinical specialty in which the group belongs by the group-specific average LOS. Surgical cases will be marked up by a surgical intensity factor. Thus, calculated monetary costs will be transformed into relative values. The uniform list of relative

values will be applied to hospital-specific historical rates of financing per case to create hospital-specific payment rate schedules by case mix group.

Validation of case-mix groups and calculation of payment rates will take time and will involve tedious work. Case-based hospital budgeting and financing are unlikely to begin until the year 2001.

7.5 MEXICO

Hospital financing and provision of care are fragmented in Mexico among several institutional systems. In the public health care sector, which accounts for less than a half of the national health expenditure, the major payers are Mexican Social Security Institute (*IMSS*), covering approximately 34 million of private sector employees and their family members, Social Security Institute for Public Employees, covering about 9 million public sector employees, the *IMSS-Solidaridad*, targeting services to about 11 million rural population lacking health insurance coverage, and the Secretariat of Health, providing government-funded care to 30 million citizens. Public sector purchasers mostly allocate resources to hospitals on the basis of historical spending. By contrast, private sector purchasers, represented by private health insurance plans and private Managed Care Organizations (MCOs), predominantly fund hospitals by fee-for-service.

In 1995, health care reforms were moved up on the list of government priorities and a new five-year program of strengthening the national health sector was adopted. The introduction of performance-based methods of payment, including case-based reimbursement of hospitals, can now be viewed as a likely development concurrent with the following policy goals:

1) A clear separation of financing from delivery, as a key element in the introduction of competition, transparency, and accountability to the health insurance system;

2) Development of internal market mechanisms to ensure that resources follow the patients, rather than the other way around;

3) The pursuit of the highest … value with the resources available in the system;

4) Gradual introduction of competition, both among public health care providers (IMSS and others) and between public and private providers of health care.

As an initial approach to case-based payment, IMSS seeks to introduce diagnosis-related groups (DRGs) into internal clinical and resource management in the participating hospitals. Hospital-based physicians and administrators are encouraged to set up a peer evaluation process that will allow each facility to identify high-volume diagnoses and cluster them into clinically similar groups of cases (40 to 60 groups in total). The physicians and administrators are also expected to engage in professional discussions, examining clinical profiles, utilization patterns (e.g., variability of LOS within and among hospitals), services provided, costs per procedure and average case, and clinical outcomes reported in each DRG. Such discussions would lead to the development of clinical protocols and case management

guidelines, recommending the most effective and efficient ways of treating patients in specific DRGs.

The initial sets of DRGs have been based on an intuitive approach and limited patient data (usually just principal diagnosis). Not surprisingly, such 'homegrown' sets vary widely across 15 participating hospitals that, according to the IMSS estimate, have been using them as of May 1999. The use of these sets cannot provide a consistent methodological base for a uniform system of case mix grouping. The need for such a system has become evident as a result of a recent survey in which 60-70% of IMSS hospital directors expressed a desire for a more rigorous and comprehensive methodology of DRG formation. There are indications that HCFA DRGs designed in the United States for the Medicare and Medicaid programs of health insurance are viewed by IMSS as a viable international prototype for the Mexican system.

An evolutionary approach to the DRG implementation is expected to prevail in the IMSS hospital sector. Case mix analyses for management purposes would be the main function of a newly designed DRG system at the initial stage of its application. In the longer-term, DRG payment rates will be developed and will be introduced as the key tool of hospital budgeting and competitive contracting. This will enable a transition from historical hospital funding based on production capacity towards performance-oriented funding linked to clinical volume and intensity.

7.6 COLOMBIA

Of the total amount of hospital care in Colombia, public hospitals account for 75 percent of discharges and surgeries, with the rest being provided by private facilities. The 1993 health legislative reform mandated competition in the insurance market and provision of services and led to decentralization of decision-making and allocation of resources. Approximately 85 percent of the hospitals have evolved into autonomously managed entities.

Providers of services are expected to come under increased cost-containment pressure from Health Promotion Organizations (*Entidades Promotoras de Salud – EPSs*). The latter have established themselves as multiple insurance carriers and purchasers of services, operating under unrestricted competition with one another. In order to stay in business, an EPS seeks to maximize its enrollment base and be efficient in spending its premium revenue on reimbursement of medical care. The currently dominant fee-for-service payment system, which promotes unnecessary services and excessive billing, is unlikely to be tolerated by the EPSs and is bound for replacement by a more cost-efficient payment method, e.g. per admitted/discharged case.

According to the Harvard 1996 Report, for the short to medium term, it is "unrealistic" to expect Colombia to develop a full-blown payment system based on DRG rates. The uniform and sophisticated diagnostic and surgical procedure coding required from every hospital by the DRG system exceeds the institutional capacity currently present in the hospital sector of Colombia. Paying hospitals per admission by rates differentiated by hospital level, location, and a broad category of patients with similar clinical conditions and resource requirements is a more viable proposal.

Importantly, Harvard recommended that case payment rates be aligned with the costs of the lowest-level hospitals that deliver the service with appropriate quality. This would discourage the currently over-utilized and expensive tertiary care hospitals from admitting routine cases and treating them at a relatively high cost. An estimated 20-30 percent of inpatients could be treated in Colombia at the lower-level hospitals, which are currently under-utilized.

In order to make incentives for productivity work in a consistent and uniform way, all main purchasers of hospital care will have to coordinate their payment policies. Particularly, public institutions purchasing care on behalf of the subsidized regime (*Administraciones del Régimen Subsidiado -- ARSs*) should join private EPSs from the contributory regime to achieve more rational and equitably targeted use of hospital resources. The government allocates funds to the hospitals in two ways: direct 'supply subsidies' for the benefit of individuals with no health coverage and allocations to ARSs, which then purchase care for beneficiaries under the subsidized regime. Approximately 80 percent of public hospital revenue comes from budgetary financing. These allocations are related to hospital production capacity or are assigned per procedure. Neither of the two allocation methods stimulates efficiency.

Coordination of *payment rates* between the contributory and the subsidized regimes, as well unambiguous assignment of patients to either of the two at the point of billing for care provided are viewed as other important objectives. Coordination of reimbursement rates implies that the government must increase payments to the hospitals under the subsidized regime to a level at which such payments become competitive with EPSs payments for the insured under the contributory regime. This would eliminate the current disincentive for hospitals to treat the poor. There are plans to equalize the per capita amount of health expenditure under both regimes in 2001. This would set the stage for the equalization of hospital payment rates, whether the rates are per procedure or per treated patient.

In conclusion, cased-based hospital reimbursement in Colombia, in addition to its straightforward function of setting incentives for productivity, competition and structural change, will serve as the tool of a more 'personalized' hospital financing. It will allow a better headcount of patients by source of coverage and, therefore, a more accurate assignment of hospital cost and revenue to the contributing, subsidized, and non-covered populations. Case-based payment, as a 'patient-oriented' method, provides a favorable environment for socioeconomic measurements in the hospital sector necessary for extending coverage and improving targeting of social health insurance programs. This is an important issue in Colombia, given that an estimated half of the patients covered under the subsidized regime are enrolled in it erroneously because their income level is beyond the eligibility threshold.

The cased-based payment method involves a conveniently defined production and payment unit (such as patient admission or discharge) which serves as a common "currency" in a hospital's dealings with multiple purchasers of care. Each ARS or EPS can easily quantify its share of a hospital's output (number of patients adjusted for resource intensity) and only pay for that share. By contrast, financing per unit of production capacity creates discomfort among the payers because they always suspect that physical resources are used to benefit other contractors and they believe that the hospital inflates its need for recurrent funding in order to compensate for its own inefficiency. Case-based reimbursement will intensify competitive contracting and will facilitate institutional integration of the hospital markets in Colombia, making it easier for hospitals to compete for funds from a variety of sources.

8. CONCLUSION: POLICY AND MANAGEMENT IMPLICATIONS

Hopefully, the reader of this guide will learn both policy and technical lessons relating to prospective case-based reimbursement of hospitals.

Hospital autonomy and competitive contracting, actively promoted in the health care sectors of LAC countries, may benefit greatly from a systemic shift to performance-related methods of financing. Providers need stronger financial incentives to become conscientious partners with regional health administrations and social insurance institutions in improving the effectiveness and efficiency of hospital services. Such incentives thrive in a financing environment that rewards productivity and allows hospitals to benefit from productivity gains. Case-based reimbursement motivates a hospital to increase its workload while, at the same time, controlling costs. Hospital occupancy rates should grow and demand for inpatient care could be met with fewer beds. Part of the resources saved on reduced fixed costs may be liberated for ambulatory care with a particular focus on primary care.

The negative side effects of case-based reimbursement that occur along with the positive outcomes must be addressed preemptively. Alternatively, those effects may prevent the new payment mechanism from developing its constructive potential and may even thwart hospital financing reforms. Not to be forgotten, quality of care may suffer under case-based reimbursement due to the incentive for early patient discharge. Hospitals may drive admission rates up in order to maximize their charges on a per-patient basis. If case-based reimbursement is not subject to facility-specific annual caps, the strongest hospitals will consume the largest portion of the regional hospital budget while the least competitive will see their financial bottom line eroding. Reallocation of patient and fund flows may result in a structural change of uncontrollable pace and destructive intensity.

To ensure that all stakeholders in the hospital sector accept case-based reimbursement, its application should be put in an appropriate regulatory and operational framework. The main element of the framework discussed in this guide is global budgeting. It implies that a hospital is budgeted for a predetermined annual number of patients adjusted for case mix intensity. Budgeted funds are disbursed to the hospital by monthly installments and are adjusted *ex post* for the variance of reported caseload from the budgeted target. Case mix rates (per discharged patient) underlie global budget planning and expenditure. Initially, the global budget is set on average per-case costs historically defined by hospital physical resources. Subsequently, it will be determined by the hospital clinical output (caseload). Bed capacity and other production resources will no longer define the amount of funding. Hospitals will respond to global budgeting in a dual way: (1) they will regulate the patient flow to achieve the pre-budgeted target (while avoiding excess patients); (2) they will try to minimize the amount of resources spent on providing care to the budgeted number of patients. When paid by prospectively established CMG rates per discharged patient, hospitals operate under incentives for cost-efficiency. Lowered costs under steady payment rates mean higher *net* revenue within the pre-determined global budget.

It is expected that case-based reimbursement will boost the internal structural modernization of hospitals and will encourage their increased diversification into non-hospital care. If purchasing agencies want to further intensify restructuring in the hospital sector, they can start changing hospital production quotas by increasing contract volumes for highly effective and efficient providers and reducing volumes for less viable providers. This needs to be done very gradually to give time to potential losers to adjust.

Case-based reimbursement will generate a flow of data that will become available for case mix analyses and will provide accurate and fully comparable information on hospital-by-hospital variation of case mix intensity, length of stay, and cost by CMG. This information will create a statistical support for decisions on structural rationalization and allocation of contracts in the hospital sector.

On a technical note, case-based reimbursement, as described in this guide, is based on logical and clear algorithms. However, implementation of this payment mechanism is not as easy as understanding it. Case-based reimbursement critically depends on accurate clinical coding of patients. At the hospital level, clinical classification systems must be in place to allow patient reporting by diagnosis(es) and surgical procedure(s). Medical and data entry personnel should be available and uniformly trained in all hospitals to maintain an accurate and uninterrupted submission of patient records for billing, budgeting, case mix analyses, quality control, and other management and supervisory purposes. Cost-accounting systems should be designed and implemented or, if previously available, standardized across all participating facilities to enable case-level costing. At the purchaser level, there should be data processing and analytic capacity to monitor cost and utilization trends by case mix group and to recommend periodic updates and revisions in the CMG relative value scale and rate schedule.

Transition from historical funding to case-based reimbursement will require capacity building in all areas of health sector administration, including policy-making, resource allocation, hospital management, and information systems. The hospital sector will start benefiting from this transition long before the new method of payment is introduced, since case mix information generated in preparation of case-based reimbursement instantly improves understanding and management of hospital clinical and financial operation, both at the facility and regional level.

To facilitate the implementation process, this guide recommends shortcuts, such as utilization of imported systems of case mix grouping and rate setting as prototypes for validation in the local hospital sector. Pilot implementation of case-based reimbursement is vitally important before the system can be mandated for large hospital networks. The LAC region could benefit from coordinated progress towards case-based reimbursement in several contiguous countries. The synergies created by cross-fertilization of experiences would help increase the overall pace of transition. The experiences gained from implementation of case-based reimbursement in the LAC region could help the remainder of the developing world improve health sector performance.

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3) ANÁLISIS DEL SECTOR SALUD EN PARAGUAY (PRELIMINARY VERSION). (SPANISH ONLY)

4) CLEARINGHOUSE ON HEALTH SECTOR REFORM. (ENGLISH AND SPANISH)

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