Chapter 11

Strategies for Evaluating PPS Impacts

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Chapter 11

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INTRODUCTION

Part Two of this report (chs. 5 to 9) examined the need for evaluation of Medicare's prospective payment system (PPS) on five separate dimensions of health system performance: expenditures and costs, quality of care, access to care, technological change, and clinical research. Critical evaluation questions in each area and approaches to their study were laid out in Part Two. Many of the PPS evaluation studies suggested in the different chapters involve similar methods of analysis and rely on the same databases.

This chapter discusses the content of evaluation studies required to address the critical questions in the five major areas of PPS impact. Then, it describes the data collection and retrieval systems needed to conduct such studies and compares them to existing ones. The third section of the chapter discusses issues that arise in the organization of the evaluation tasks. The final section lays out the implications of content, data, and organization for funding,

CONTENT OF PPS EVALUATION

The critical PPS evaluation questions identified in Part Two of this report were drawn from OTA's analysis of the financial incentives inherent in the structure of PPS relative to cost-based reimbursement. A shift in incentives can be expected to change the behavior of providers and patients, which in turn can be expected to alter the performance of the U.S. health care system. OTA'S analysis of the -ways in which the incentives of PPS can affect each of the dimensions of impact allowed specification of critical evaluation questions in each area. Chapter 1 (table 1-2) summarizes these questions for each of the five major PPS impact areas and links each question to the kinds of studies and data sources that can be used to address it. It also provides a rough indication of the relative costs of different kinds of studies in each area.

The range of potential studies of PPS impacts is wide; priorities are therefore required. OTA has identified priority categories through an analysis of the strength of the incentives facing providers and their ability or willingness to act on them, the strength of the relationship between these actions and impacts on quality, access, etc., and the feasibility and cost of measuring these impacts, The result is a three-tiered approach to the identification of needed studies:

- Category 1: *studies that can identify major undesirable PPS impacts on the health care system as a whole or on vulnerable groups.* These studies are either relatively inexpensive to conduct because they rely on existing databases or are so important that they justify substantial funding.
- Category 2: *studies that provide a balanced and thorough assessment of PPS impacts on the health care system.* These are studies intended to examine both positive and negative results. Their cost is generally (but not always) high because of the need for comprehensiveness and balance.
- Category 3: *studies whose purpose is to develop methods of measuring important PPS impacts.* These are important for the enhancement of capability to monitor PPS impacts. Their cost varies depending on data needs.

Studies in the first two categories are summarized in chapter 1 (table 1-2). Although routinely available data regarding the utilization and orga-

nization of health services can be used as the basis for the first line of inquiry into PPS effects, in each critical PPS impact area, more detailed studies requiring more costly data collection strategies are indicated. For example, while Medicare's Part A and Part B data systems are fertile territory for investigation of undesirable impacts on quality (e.g., through examination of age-adjusted mortality rates and other "sentinel events"), they cannot be used for inquiries into more subtle changes in the quality of care. To measure these more subtle changes, studies involving direct data collection from medical records would be needed.

In selecting specific subjects for detailed analysis and in drawing inferences about the contribution of PPS (relative to other factors) to any observed changes in outcome, a great deal of judgment is required. Inappropriately selected subjects or methods of analysis can easily distort summary conclusions about the impacts of PPS. The best insurance against this potential problem would be to have specific issues addressed through multiple investigator-initiated grants selected through peer review. The grants mechanism adds a measure of independence from political interference and at the same time encourages academic or other researchers to develop strong research projects. Success of this funding mechanism would depend, however, on investigators' having knowledge of and access to the full range of databases available for analysis. This would require a commitment on the part of the Health Care Financing Administration (HCFA) and other agencies with pertinent data to maximize the accessibility of data to independent investigators.

The ability to evaluate PPS in the long run may depend on the commitment of resources for category **3 studies.** The impact measures that are available in some impact areas are not well developed. In the quality area, for example, not much is known at present about what detectable patterns of utilization suggest a serious problem for quality (see ch. 6). In what cases does a readmission imply that something has gone wrong in the way a patient has been treated? What processes of care during the hospital stay are so strongly linked to outcomes that they can be used as indicators of PPS impact? In the area of cost measurement, cost-finding techniques that more accurately reflect the true costs of treating different kinds of patients are in their infancy (see ch. 5). Good summary measures of technological change simply do not exist (see ch. 8). Finally, measures of patient severity of illness that can be used to analyze the systematic redistribution of surpluses and losses among patients and hospitals need to be refined (see app. H). The importance of having information on the impacts of PPS (or, indeed, of any Medicare policy change) probably justifies additional spending on methods development in these areas.

DATABASES FOR PPS EVALUATION

As table 1-2 in chapter **1** illustrates, data for analyzing critical PPS evaluation questions are available from a variety of sources, ranging from HCFA'S routine databases used in the administration of the Medicare program to special surveys of the population conducted as part of evaluation projects. Special data collection exercises, such as population surveys or medical record abstracting, are costly but are-sometimes the only feasible way to acquire needed information. This section considers the databases routinely maintained by the Federal Government whose content, accuracy, and structure determine their usefulness for PPS evaluation.

Two questions arise with respect to routinely maintained data systems. First, how adequate are routine data systems as currently structured for evaluating PPS? And, second, what kinds of changes in their content or organization would enhance their usefulness in this regard? Because so many issues for PPS evaluation can be analyzed with Medicare data, these questions are first addressed to Medicare databases. Subsequently, the potential and problems with non-Medicare databases are considered,

Medicare Databases

To administer the Medicare program, HCFA maintains data files in four areas *(325):*

- Ž beneficiary characteristics;
- Ž provider characteristics;
- • provider bills; and
- • provider costs.

Data in each of these categories arrive at HCFA through a variety of channels and are processed into specific files, which are further manipulated or merged as the need arises, The basic files are the sources for all derivative files that may be created either to support the operations of the Medicare program or to monitor and evaluate the performance or impact of the system. (App. E provides a detailed description of the files used to administer the Part A Medicare program. Similar files exist for the Part B program.)

The Medicare data files are central to the evaluation of the impacts of PPS. Data on Medicare expenditures, costs, utilization, and mortality have been identified as necessary to address critical evaluation questions. Moreover, these data items need to be available on a disaggregated basis—by diagnosis-related group (DRG), by hospital, by geographic area, and by beneficiary. The sheer size of the data files, particularly the billing files, makes some kinds of analysis based on these data quite costly.[2] Medicare bills are sorted by kind of service (i.e., hospital inpatient, physician, etc.); records of bills for each type of service are maintained in a separate file in chronological order of their arrival. To develop a full history of health care utilization or expenditure for any period across all services for a given beneficiary is an extraordinarily costly data processing task. (Each record in each file would have to be scanned to identify all records for a given beneficiary.) The search could be greatly abbreviated if the individual files were presorted by beneficiary, provider, or geographic area.

HCFA is currently developing a system to presort the Part A and Part B billing files to allow disaggregated analyses based on data integrated from the separate files. This system, referred to as the Medicare Automated Data Retrieval System (MADRS), will organize Medicare billing recorals by geographic area, provider, and beneficiary (see app. E). When completed, it will enhance the analytic capability for PPS evaluation. The development of MADRS has proceeded slowly. In August 1984, it was estimated that files for the years *1980-82* would be available late in 1984 (181). By August 1985, however, the first files were still unavailable.

The HCFA database also contains the Medicare cost reports, which provide the only universally available and uniform hospital cost data. Between the time a cost report is initially submitted by the hospital and the time it is finally settled by the Medicare intermediary, the cost report goes through numerous changes. Consequently, there are several versions of such reports, The earlier versions are, of course, preliminary and unaudited, but on average, they overstate the final costs by only about 2 percent (72).

At present, Medicare cost reports are not fully accessible in automated form at HCFA. An automated Hospital Cost Report Information System (HCRIS) has been under development for at least 2 years and is designed to hold all versions of the cost reports, including the one submitted by the hospital. As of June 1985, the file for hospitals' fiscal years ending between September 1982 and September 1983 *was* about 80 percent complete and primarily consisted of settled cost reports (see app, E). HCRIS has not been fully implemented by HCFA; consequently, Medicare cost reports are the only major source of data unavailable in automated form.

[1]For the most part, these files are automated and can thus be considered to exist on computer tapes or disks.

[2]In 1984, for example, approximately 12 millioninpatient hospital claims, 238 million physician and supplier claims, and 5 million home health claims were filed (376),

Non-Medicare Databases

The Federal Government supports a number of periodic health surveys that can provide useful data for PPS evaluation (see app. C). Several issues arise with respect to these Government-sponsored surveys.

First, because they are generally direct surveys of the population or of patient records, the surveys conducted by the Federal Government are costly. Budgetary constraints have reduced the frequency with which many can be repeated. Once they are conducted, substantial delays often occur before their results are published or tapes are prepared for public use. To illustrate:

- To the National Ambulatory Medical Care Survey (NAMCS), which provides data on utilization of services in physicians' offices, was last conducted in 1981; it was discontinued from **1982 to 1984 for lack of funding. A successor to the annual NAMCS is currently scheduled for a 3-year repeat cycle, with the next survey beginning in 1985. Budgetary constraints have limited more frequent surveys.**
- **The successor to the National Medical Care Utilization and Expenditure Survey (NMCUES), a 1980 survey which provides a unique database of information obtained from a sample of the noninstitutionalized civilian population on utilization and expenditures for all kinds of medical care, will not be conducted until 1987.**

Second, the Government-sponsored health surveys are intended to provide information on a broad range of questions and are not particularly well adapted to the needs of PPS evaluation. For example:

- The Hospital Discharge Survey (HDS), which provides annual national estimates of utilization of non-Federal short-term hospitals, is the only statistically valid sample of hospital discharges for the entire population. Yet the discharges cannot be related to the characteristics of the hospitals in which they occur, because hospitals are classified only in regard to bed size and ownership.
- The sampling designs of most population surveys are-not-specfically geared-to the needs of PPS evaluation. NMCUES, for example, did not base its sample size on the need to observe rare events such as hospitalization in the elderly. And, patients in nursing homes were excluded from the study. Thus, changes in the expenses of Medicare beneficiaries may not be detectable with an adequate level of confidence. The planned successor to NMCUES, the **1987 National Medical Expenditure Survey, will correct some of these problems by including a sample of institutionalized people and sampling a higher proportion of the elderly.** The difficulty of making pre/post-PPS comparisons will remain, however.

To remedy these problems will require greater attention on the part of survey designers to the specific needs of PPS evaluation and greater commitment of resources to the maintenance and improvement of the statistical databases that are critical to monitoring the status of the health care system.

ORGANIZATIONAL ARRANGEMENTS FOR PPS EVALUATION

Even more important than specifying particular studies that should be undertaken to evaluate PPS is ensuring that the organization of the evaluative process is adequate. Four factors influence the appropriate organization of PPS evaluation:

- *The complexity of PPS evaluation.* Investigation of the impact of PPS on the important dimensions of health system performance is difficult because of conceptual, methodological, and data problems. Impact measures are difficult to identify in some areas; the ability to attribute observed effects to PPS is limited; and the high cost of research argues for sound judgment in the selection of specific studies.
- *The dual purpose of PPS evaluation.* **A principal function of PPS evaluation is to serve as a "warning system" for unacceptable negative consequences—consequences which** need to be addressed either through changes in the structure of PPS or through other compensating programs. Beyond this first level

of evaluation, however-, a more balanced assessment of its positive as well as negative impacts is necessary.

- *The large number of studies using common data sources.* Reliance on HCFA data for studies of utilization, expenditures, costs, and outcomes of care implies the need for coordination in the development of analysis files from the parent data files.
- *The need for further development of impact measures and databases.* The problems inherent in evaluating PPS highlight the need for better measures of quality, access, cost, and technological change. Basic research studies will be needed if improvements are to be expected.

These factors influence three questions regarding the organization of PPS evaluation efforts:

- What organizations within or outside of the Federal Government should be responsible for conducting what studies?
- What funding mechanisms should be used to carry out the needed research?
- How can the total effort be coordinated?

Responsibility for Specific Studies

With respect to the organizational locus of responsibility for specific studies of PPS impacts, the following criteria are relevant:

- existence of required expertise/experience with the methods and data required for evaluation;
- access to critical databases;
- objectivity with respect to the outcome of the evaluation;
- commitment to evaluation (e. g., personnel, funding); and
- availability of resources to carry out the study .

As discussed in the previous chapter, HCFA has been assigned the leading role in Federal activities to evaluate the impact of PPS, The Secretary of Health and Human Services' annual PPS impact reports mandated through 1987 by Congress are being prepared by HCFA. As the agency with the most detailed knowledge of and access to the critical databases and with the greatest program knowledge, HCFA is most capable of carrying out many such studies.

Nevertheless, HCFA's objectivity with respect to the outcomes of the evaluation must be considered. The slow speed with which HCFA has proceeded with plans for the most critical impact areas (namely, quality and access) and the difficulty it has had in responding to other mandated studies in the allotted time suggests either inadequate resources to carry out the required tasks, inadequate commitment to evacuation, or both.

Mechanisms for Funding Research

The problem of HCFA's potential lack of adequate objectivity can be reduced to some extent by resorting to funding mechanisms that permit independent research on PPS impacts. Extramural projects, preferably funded by peer-reviewed grants, provide the greatest assurance of independence on the part of investigators. The National Center for Health Services Research and Health Care Technology Assessment (NCHSR&HCTA), for example, has a tradition of funding peer-reviewed investigator-initiated grants.

Coordination and Oversight of the Evaluation

The difficulty of ensuring that appropriate studies are undertaken, that available data are used efficiently, that the knowledge of those most qualified and objective is tapped, and that adequate resources are devoted to the effort suggests that a single organization should be responsible for coordination and oversight of the PPS evaluation process, This coordination responsibility needs to be ongoing. Agencies responsible for carrying out studies in specific areas need to be held accountable for the quality and timeliness of the work they produce. The functions of a coordinating organization could include the following:

- assessing the feasibility and cost of alternative studies in relation to their importance;
- developing an annual PPS evaluation agenda;
- recommending an annual PPS evaluation budget;
- identifying the most appropriate organizational sponsors for specific studies;
- recommending the most appropriate funding mechanisms;
- recommending funding levels for individual studies;

- overseeing and coordinating access to needed data;
- overseeing and coordinating changes in data systems to enhance the ability to evaluate PPS;
- reviewing the content of specific studies for their scientific validity; and
- serving as a clearinghouse for both public and private sector studies,

The responsibility for coordinating the PPS evaluation effort could be lodged in any of several Federal agencies. The Office of the Assistant Secretary for Planning and Evaluation within the Department of Health and Human Services (DHHS), for example, has traditionally maintained a coordinating role with respect to evaluation research. Other possible organizations within DHHS would include NCHSR&HCTA, which has extensive experience in supporting intramural and extramural research of this kind and is currently coordinating the PPS-related research of the Public Health Service, and HCFA, which has both program and research expertise. NCHSR&HCTA is low in the DHHS organizational hierarchy, however, and therefore might have difficulty performing the coordinating function. Moreover, if any of the components–of DHHS were assigned the coordinating task, attention would have to be paid to their inherent lack of objectivity, since they are part of the implementing Department.

Another alternative is for the Prospective Payment Assessment Commission (ProPAC) to oversee the evaluation. ProPAC has an informal congressional mandate (Report 98-911 on H.R. 6028) to provide a comprehensive evaluation of PPS *(309)* but has a research budget (approximately $1 million) that cannot begin to meet these expectations. Its legislated function could be altered to include coordination and oversight of PPS evaluation activities throughout the Federal Government. However, as the body with responsibility for recommending relative DRG prices and the annual rate of increase to the Secretary of Health and Human Services, ProPAC may be no less disinterested in the outcome of an evaluation of PPS than is DHHS.

Congressional agencies, such as the Congressional Budget Office, the Congressional Research Service, the General Accounting Office, or OTA, would be capable of providing the oversight that is necessary, particularly if staff with program evaluation skills were assigned the responsibility. The missions of these agencies, however, do not coincide with this oversight function.

Private organizations with experience in health policy research and evaluation are probably not good candidates for the role of coordinator because they would have low access to information and databases held by Federal agencies and inadequate influence over the evaluation process.

FUNDING FOR PPS EVALUATION

Although there are conceptual and methodological limits with respect to what can be known about the effects of PPS on the important dimensions of health system performance, with ade*quate funding and personnel,* Federal agencies can do a reasonably good job in tracking changes in expenditures and costs, quality of care, access to care, technology, and clinical research as PPS is implemented and to assess differential impacts on vulnerable groups.

At present, Federal funding of research on PPS does not appear to be adequate to mount detailed studies even in the first category. With each of the major policy research organizations of DHHS facing the possibility of budget cuts for fiscal year 1986, the prospects for adequate funding of PPS evaluation appear to be declining.

The timely and thorough completion of PPS studies mandated by Congress (see ch. 10) appears to exceed the capability of the current resources of HCFA'S Office of Research and Demonstrations. In the future, attention needs to be given to the source of funds for the conduct of mandated studies.