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## What Types of Performance Information Should Be Tracked?

*Harry P. Hatry*

**T**he central function of any performance measurement process is to provide regular, valid data on indicators of performance outcomes. But performance measurement should not be limited to data on outcome indicators.<sup>1</sup> It should also include information that helps managers measure the incoming workload and gain insight into causes of the outcomes.

No two people will categorize every single element in a data set in exactly the same way. Gray areas inevitably exist because it is not always clear where a particular piece of information falls. In addition, for some performance information, the category may depend on the perspective of the agency. For example, to the state agency that develops an educational reform strategic plan, the completion of that plan is an output. However, to the U.S. Department of Education that encourages such plans, their completion by states is an intermediate outcome, as discussed later.

Box 1 presents the categories of performance information I discuss in this chapter. Data on the amount of resources expended for particular programs (inputs) are different from internal information

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Box 1  
Categories of Information Used  
in Performance Measurement Systems

- ⊗ Inputs\*
- ⊗ Process (Workload or Activities)
- ⊗ Outputs\*
- ⊗ Outcomes\*
  - Intermediate Outcomes
  - End Outcomes
- ⊗ Efficiency and Productivity\*
- ⊗ Workload Characteristics
- ⊗ Explanatory Information
- ⊗ Impacts

\* These are the categories usually labeled performance indicators in performance measurement systems.

that indicates the amount of activity a program is undertaking (process). These data, in turn, are quite different from the products and services a program has completed (outputs), which should be distinguished from results-based information (outcomes). These distinctions are important in order to avoid misleading those who use the information.

Each of these categories is discussed briefly in turn. Box 2 provides summary definitions of key performance measurement terms.

## **Categories of Performance Information**

### *Inputs*

Input information is the amount of resources actually used, usually expressed as the amount of funds or the number of employee-years, or both.

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Box 2

Performance Measurement Definitions

- ❖ **Inputs:** Resources (i.e., expenditures or employee time) used to produce outputs and outcomes.
- ❖ **Outputs:** Products and services delivered. Output refers to the completed products of internal activity: the amount of work done within the organization or by its contractors (such as number of miles of road repaired or number of calls answered).
- ❖ **Intermediate Outcomes:** An outcome that is expected to lead to a desired end but is not an end in itself (such as service response time, which is of concern to the customer making a call but does not tell anything directly about the success of the call). A service may have multiple intermediate outcomes.
- ❖ **End Outcomes:** The end result that is sought (such as the community having clean streets or reduced incidence of crimes or fires). A service may have more than one end outcome.
- ❖ **Efficiency, or Unit-Cost Ratio:** The relationship between the amount of input (usually dollars or employee-years) and the amount of output or outcome of an activity or program. If the indicator uses outputs and not outcomes, a jurisdiction that lowers unit cost may achieve a measured increase in efficiency at the expense of the outcome of the service.
- ❖ **Performance Indicator:** A specific numerical measurement for each aspect of performance (e.g., output or outcome) under consideration.

**Source:** Adapted from *Comparative Performance Measurement: FY 1996 Data Report* (Washington, D.C.: International City/County Management Association, 1997), 1-4.

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This category, when related to figures on the amount of output or outcome (see further below), produces indicators of efficiency or productivity. *For performance measurement purposes, the amounts that were actually used, not the amounts budgeted, are the relevant numbers.* An occasional practice has been to call the *workload* that comes in the agency an input. I do *not include* workload data in this category, because the amount of incoming work is quite different from the amount of cost or staff time expended.

*Process (Workload or Activities)*

This category includes the amount of work that comes into a program or is in process but not yet completed. For some agencies, such as human service agencies, the workload is usually expressed in terms of the number of customers that come in for service (individual clients, households, or businesses). For others, the number of customers is not appropriate. Road maintenance programs, for example, might express their workload as number of lane-miles of road needing repair.

Amounts of work are not considered performance indicators because they do not indicate how much product is produced by the program. Workload information is very important to program managers when tracking the flow of work into and through their programs, however. (For example, the amount of work pending from the previous reporting period plus the amount of new work coming in indicates the workload on the program during the current reporting period.)

While amounts of work by themselves are not outputs or outcomes, workload data can be used to produce outcome data. In some programs, the amount of work not completed at the end of a reporting period can be considered a proxy for delays of service to customers (an intermediate outcome). Examples include the size of the backlog of eligibility determinations for loan applications and the size of customer waiting lists. However, more direct, and probably better, indicators of delays and backlogs would be: (a) a direct indicator of the extent of delays, such as the percent of cases in which the time elapsed between the request for a service and when

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the service was provided exceeded X days, where X is a service standard established by the program; and (b) the percent of customers who reported excessive waiting times to obtain service.

*Outputs*

Output information indicates the amount of products and services delivered (completed) during the reporting period. Reporting of output information is standard in agencies throughout the world. Keeping track of the amount of output accomplished is good management. Common examples of outputs include number of miles of roads paved, number of reports issued, number of training programs held, and number of students served by the program. However, outputs do not by themselves tell anything about the *results* achieved, although they are expected to lead to desired outcomes. (Program personnel should ask what results are expected from each output. Those results should be included under the next category, *outcomes*.)

*As defined here, outputs are things that the program's personnel have done, not changes to the outside or changes that outside organizations have made.*

*Outcomes*

In some contexts the word *output* refers to any product of work, whether the product is a program's completed physical product or the outcomes (results) of that work. *The field of performance measurement of public services makes a sharp distinction between outputs and outcomes.*

Outcomes are the events, occurrences, or changes in conditions, behavior, or attitudes that indicate progress toward achievement of the mission and objectives of the program. Thus, outcomes are linked to the program's (and its agency's) overall mission — its reason for existing.<sup>2</sup>

*Outcomes are not what the program itself did but the consequences of what the program did.* An excellent example illustrating the difference between outcome and output comes from the state of Texas:

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*The number of patients treated and discharged from a state mental hospital (output indicator) is not the same as the percentage of discharged patients who are capable of living independently (outcome indicator).<sup>3</sup>*

Outcomes may be something the program wants to maximize, such as evidence of increased learning by students, or to minimize, such as crime rates. Some outcomes are financial. For example, for public assistance programs, reducing the amount of incorrect payments (whether overpayments or underpayments) is likely to be an appropriate outcome. Another example, recovering owed child support payments from absent parents, is an appropriate outcome of child support offices. In such cases, outcomes can be expressed in monetary terms.

Outcomes include side effects, whether intended or not and whether beneficial or detrimental. If the program recognizes in advance that such side effects can occur, it should design the performance measurement process to regularly measure them.

As long as they are important and can be tracked, outcomes should be included in the performance measurement system, even if they are not explicitly identified in the program's mission and objective statements. Formal program mission and objective statements seldom include all the outcomes that an agency needs to track. It is not the function of such statements to itemize all the outcomes that the program should seek, just the central, most vital ones. For example, complaints against police officers should be tracked as well as crime clearance rates, even if the mission statement of the police agency does not include statements about providing law enforcement in a fair and honest manner.

It is important to distinguish *intermediate* outcomes from *end* outcomes. This will help programs differentiate between the ends ultimately desired from a program and interim accomplishments, which are expected to lead to those end results (but may or may not). The following discussion highlights the difference with definitions and examples.

***Intermediate outcomes.*** These are outcomes expected to lead to the ends desired but are not themselves ends.

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A Compliance Perspective Can Be at Odds  
With an End-Outcome-Based Focus

The U.S. General Accounting Office noted in June 1998 that the federal Head Start program provides a number of performance standards that are actually program regulations defining local government activities, *not outcomes*. Grantees must adhere to these regulations in operating their programs. The GAO report goes on to say: "HHS ensures local government quality by monitoring and enforcing compliance with these regulations." But monitoring for compliance provides incentives for compliance; *it may or may not produce effective services*. To the extent that such a compliance perspective continues to be the primary program emphasis, the real intent of managing-by-results and outcome-based performance measurement will be heavily diluted. The GAO report identifies this limitation and notes the HHS "in the next few years" intends to provide information on real program outcomes — such as the gains made by participating children and their families in vocabulary, literacy, and social skills and the extent to which families have become economically and socially self-sufficient.

**Source:** U.S. General Accounting Office, *Head Start: Challenges in Monitoring Program Quality and Demonstrating Results* (Washington, D.C., June 1998).

Examples of intermediate outcomes:

- ✿ People completing employment training programs where program participation is *voluntary*. This reveals how successful the program has been in getting customers not only to participate in, but also to complete, the sponsored training sessions. However, completion is only one step toward the ultimate end of improving the condition of those persons completing the program.
- ✿ Citizens doing more exercising or switching to a better diet, as recommended in an agency-sponsored health program (perhaps as measured by surveying clients 12 months after they complete the agency's program).

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Such changed behavior is expected to lead the participants to better health, but since this is uncertain, it is an intermediate outcome.

- ✿ A state or local agency completing the development of a comprehensive plan of action encouraged and supported by a federal program (where acceptance of the assistance is voluntary). For the federal government, the fact that states or local governments actually completed a reasonable plan can be considered to be an initial step toward improving services, although it says nothing about the end outcome of service improvement.<sup>4</sup>

For most agencies and products, whether something is an output or an intermediate outcome is clear, but there are exceptions. One example is the number of arrests for a law enforcement program. Many persons believe that arrests are an output because they are actions taken by agency employees. On the other hand, arrests involve citizens outside the agency, the persons arrested, and their families. In that sense, they might be better counted as intermediate outcomes. And they usually indicate that the process of bringing guilty persons to justice has begun.

Other examples include qualities of how well a service is provided to customers, such as response time to requests for service.

*Service quality characteristics: A special type of intermediate outcome.* As used here, quality indicates *how well a service was delivered, based on characteristics important to customers*. It does not tell what results occurred *after* the service was delivered. Since such characteristics are important to program customers, even though the characteristics do not represent final results, they can be considered intermediate outcomes an agency should track. Box 3 lists quality characteristics that might be considered by an agency when developing a list of outcomes to track for a program.

Some persons label quality characteristics (such as response times to requests for services) as outputs because they are characteristics of the outputs. However, if a characteristic is expected to be important to customers, it is better to consider it as an intermediate outcome, not an output. Because quality characteristics usually are

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important to customers, they are better labeled as outcomes to help ensure that they are given proper attention by agencies.

For some customers and under some circumstances, one or more of these quality characteristics might be extremely important — and can even be considered end outcomes. For example, it is vital for low-income families that assistance checks (whether Social Security or any public assistance payment) arrive on time and be accurate. Otherwise, these families will be unable to pay their bills and may be evicted or go hungry.

*End outcomes.* These are the desired results of the program — conditions of importance to program customers and citizens more generally. End outcomes might, for example, be aspects of health, safety, educational achievement, employment and earnings, or decent homes, such as:

Box 3

Typical Service Quality Characteristics to Track

- ⊗ Timeliness with which the service is provided.
- ⊗ Accessibility and convenience of the service.
  - Convenience of location.
  - Convenience of hours of operation.
  - Staff availability when the customer needs the service (whether by phone or in person).
- ⊗ Accuracy of the assistance, such as in processing customer requests for service.
- ⊗ Courteousness with which the service is delivered.
- ⊗ Adequacy of information disseminated to potential users about what the service is and how to obtain it.
- ⊗ Condition and safety of agency facilities used by customers.
- ⊗ Customer satisfaction with a particular characteristic of the delivery of the service.

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- ✿ Reduced incidence of specific diseases.
- ✿ Improved student test scores.
- ✿ Lower crime rates.
- ✿ Less violence in schools.<sup>5</sup>
- ✿ Reduced number of households living in substandard housing.
- ✿ Increased real household earnings.
- ✿ Reduced household dependency on welfare.

For some programs, customer satisfaction with the *results* of a service can be considered as an end outcome. For example, satisfaction ratings of customers' experiences with parks, recreational activities, libraries, and cultural programs, or children's satisfaction ratings of the homes in which they are placed by child welfare agencies are likely to be considered by many citizens as end outcomes — even though those programs have aims that go beyond satisfaction, such as a library's mission to increase public access to information.

Many programs produce *both short-term and long-term end outcomes*. Education is a classic example. Educational programs produce early improvements in student learning, but they also help students obtain employment, and higher salaries, later on. Employment, ability to support a family, and reductions in welfare dependency are long-term outcomes of education programs. Information on long-term end outcomes such as posteducation employment and earnings, however, will not be available early enough to guide program personnel on the success of most of their current activities. Short-term end outcomes need to be tracked to encourage ongoing program improvement. Short-term outcomes related to learning and dropout rates, for example, are outcomes of key concern to education managers, staff, and parents — and can be considered end outcomes for this reason.

Box 4 summarizes a number of other issues related to the relationship between intermediate and end outcomes.

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**Box 4**  
**Other Issues Related to the Relationship  
Between Intermediate and End Outcomes**

Intermediate outcomes, by definition, occur before — and are expected to help lead to — the end outcomes. *Thus, intermediate outcomes are important to program managers and usually provide more timely information than end outcomes.* For example, customers complete employment counseling programs (intermediate outcome), which is expected to occur after completion of the program. For long-term end outcomes for which data may not be available for many years (such as reduction in adverse health effects due to smoking and achieving rewarding careers), the program can usefully focus on short-term ends (such as reducing smoking and improved learning and skills). Much evidence exists that both reduced smoking and improved learning and skills directly affect the long-term end outcomes and intermediate outcomes.

*Early occurrence of an outcome does not necessarily mean that it is not an end outcome.* For example, family counseling programs hope to produce more stable and happier families in the short run as well as in the long run. Some treatment actions produce quick ends (purification of drinking water), while others require many years before water quality improves significantly (clean-up of rivers).

Another important advantage of including intermediate outcomes is that programs *almost always have more influence over intermediate outcomes than they do over end outcomes.*

For example, many federal programs (such as education, health and human services, housing and community development, and employment programs) provide assistance to states, local agencies, and/or nongovernmental organizations rather than directly to citizens. Changes sought by the federal programs and made by these other organizations can be considered intermediate outcomes. The federal programs have more direct influence on these outcomes than on the end outcomes, which are also affected by many other factors (such as family circumstances and motivation). The same is true of state programs that work through local governments, and of local government programs that work through the business or private/nonprofit community.

*Intermediate outcomes usually are related to the particular way that the service is delivered by the program, whereas end outcomes typically do not vary with the delivery approach.* For example, a government attempting to improve the quality of rivers and lakes can use many ways to achieve this, such as providing funding for wastewater treatment, providing technical assistance to certain classes of businesses, and encouraging lower levels of government to pass stricter laws and ordinances. Each such approach would have its own intermediate outcomes. However, regardless of the approach, end outcomes, such as the quality of rivers and lakes, apply.

### *Efficiency and Productivity*

The ratio of the amount of input to the amount of output (or outcome) is labeled *efficiency*. Flipping this, the ratio of the amount of output (or outcome) to the amount of input is labeled *productivity*. These are equivalent numbers.

Efficiency and productivity have traditionally related costs to outputs (labeled *technical efficiency* by economists). However, to the extent that the performance measurement system provides data on *outcomes* (sometimes called *allocative efficiency* by economists), it provides a much truer picture of efficiency and productivity. This is because focusing on output-to-input ratios carries with it the temptation for managers to increase output at the expense of results and service quality.

Examples of outcome-based productivity indicators:

- ✿ Number of persons gaining employment after completing an agency's training program per dollar of program cost (or per program employee-hour).
- ✿ Number of customers who reported that the service received had been of significant help to them per dollar cost of that service (or per employee-hour).

Flip these ratios over and they become efficiency indicators.

For example, if 160 customers reported being significantly helped, and the program cost \$96,000:

- ✿ Efficiency =  $\$96,000 / 160 = \$600$  per customer helped.
- ✿ Productivity =  $160 / \$96,000 = 1.67$  customers helped per \$1,000.

Efficiency and productivity ratios can be calculated for any *output* indicator. For *outcome* indicators to be incorporated into these ratios, however, the outcomes need to be expressed as something to be maximized. Let us take crime as an example. "Cost per reported crime," though easy to calculate, makes no sense as an efficiency indicator (although it does make sense in the context of measuring the

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total costs of crime to a community). The output to be maximized here is *crimes prevented*. "Cost per crime prevented" would be a highly desirable indicator. Unfortunately, valid data on crimes prevented by a program are virtually never available on a regular basis. (Estimation of number of crimes prevented, if it is to yield reliable information, requires ad hoc studies that are usually quite costly, and even then the estimates are likely to be highly uncertain. This measurement problem applies to most prevention programs.)

Efficiency ratios using outputs are common. Thus far, however, efficiency ratios using outcomes are rare. This is partly because few outcome data have been developed in the past by public or private agencies. With the growth of more outcome-based performance measurement systems at all levels of government and in the private, nonprofit sector, more use of outcome-based efficiency ratios is becoming possible.

### *Characteristics of the Workload*

If agencies are to make full use of their performance data, information on the amount of work coming into a program (sometimes called *demand*) and key characteristics of that work (such as those relating to its difficulty) needs to be collected and linked to outcome information. Thus a program that processes applications wants information on the complexity of the incoming workload. A program working with business customers wants information as to each business's industry classification, size, and location. A road maintenance program needs to be concerned with the amount and type of traffic and soil conditions for specific road segments. A hospital needs information on the severity of illness of its patients to help it interpret changes in outcomes of patients.

Similarly, programs that use a variety of service delivery approaches need to have information on the particular approach used to produce particular outputs and outcomes. The number and types of assistance provided to customers with similar problems may vary. Programs may use private contractors for some of their work and their own employees for other, similar work. Programs need to

know which work was done using which service approach and then link the outcomes to each approach.

### *Explanatory Information*

Programs should be encouraged to provide explanatory information (qualitative or quantitative) to help readers of their performance report properly interpret the data — especially for outcomes that were poor or much better than expected. In some instances, this will be information about internal factors (e.g., the program unexpectedly lost funds or key personnel during the reporting period). In other cases, the explanations will identify external factors over which the program had little or no control (e.g., a major change in economic conditions or highly unusual weather conditions).

### *Impacts*

A number of analysts have begun to use the term *impact* to refer to data that estimate the extent to which the program actually *caused* particular outcomes.<sup>6</sup> For example, an indicator of impact would be labeled something like the following: Number of expectant teenage mothers who, *because of the program*, had healthy babies. (Without the program, they would have lost their babies or had babies with substantial health problems.)

However, *the outcome data likely to be obtainable from ongoing performance measurement systems will seldom, if ever, reveal the extent to which the program has caused the outcome.* Other factors — over which the program has only partial control — will inevitably be present. For example, some participants may stop unhealthy habits because of pressure from family and/or a health care professional, not because of the program. In-depth studies, such as formal program evaluations, may at times be able to estimate the program's impact on some outcomes reasonably well. When available, those data should also be included in the program's performance report.

Because of the time and cost required to obtain impact data, such information is likely to be available only infrequently on any given program (or group of programs).

## **Output or Outcome? Indicators That Are Particularly Difficult to Categorize**

Many service attributes are easy to classify, but some are not. Here are some typical attributes that have caused healthy debates.

### *Customer Participation*

The number of customers participating in a program is an ambiguous indicator because it depends on the particular situation in which it is used.

- ✿ If attendance is mandatory, the number of participating would be, at best, output information.
- ✿ For programs in which participation is voluntary, and which include activities aimed at attracting customers (such as employment training program and professional development activities), participation can be categorized as an intermediate outcome because it depends on the program's ability to attract participants. Similarly, the program's ability to retain participants until the activities are completed is another intermediate outcome. Completion is more important than participation, because it indicates that the activity has been sufficiently attractive for customers to have stuck with it until the training program's end.
- ✿ For public programs such as parks, recreational facilities, libraries, and public transit, and for private programs such as those of boys' and girls' clubs (all activities in which participation is voluntary), the number of participants can be considered an intermediate outcome. (Examples of outputs are the number of programs or classes held, number of bus miles, and amount of reading materials purchased.) A good case can also be made that participation is an end outcome of such programs if enjoyment of the activity is hoped to be a major product of such programs.

### *Customer Satisfaction*

A guiding principle in the search for outcomes, as stressed earlier, is to identify elements of direct concern and value to the public and to direct customers. Since customer satisfaction and similar service attributes, such as courteousness and accessibility, fit this description, they are categorized here as outcomes.<sup>7</sup> Elected officials and donors certainly treat them as outcomes.

What kind of outcome are these? They are usually *intermediate* outcomes because they cannot take the place of measuring the actual condition of customers after receiving the service. For example, customer satisfaction with the employment and training services they receive is not ultimately as important as whether these customers find employment. (But is not *satisfaction with their jobs* also a major value to these customers?)

For certain services — recreational activities, libraries, and marital counseling, for example — customer satisfaction can be an end outcome. Even here, though, satisfaction is seldom the only outcome sought. In virtually all cases where customer satisfaction is important, other outcomes must also be included to obtain a comprehensive picture of a service's performance.

### *Response Times for Service Request*

Some people label response time as an output and others label it as an intermediate outcome. Because response time is usually of direct concern to customers, I include it in the intermediate outcome category. By the same logic, the level of satisfaction customers have with the response times to their requests is also an intermediate outcome.

## **Relationship Among Types of Performance Information**

Diagramming the continuum of relevant factors for measuring performance using a logic model (outcome-sequence chart) is a highly

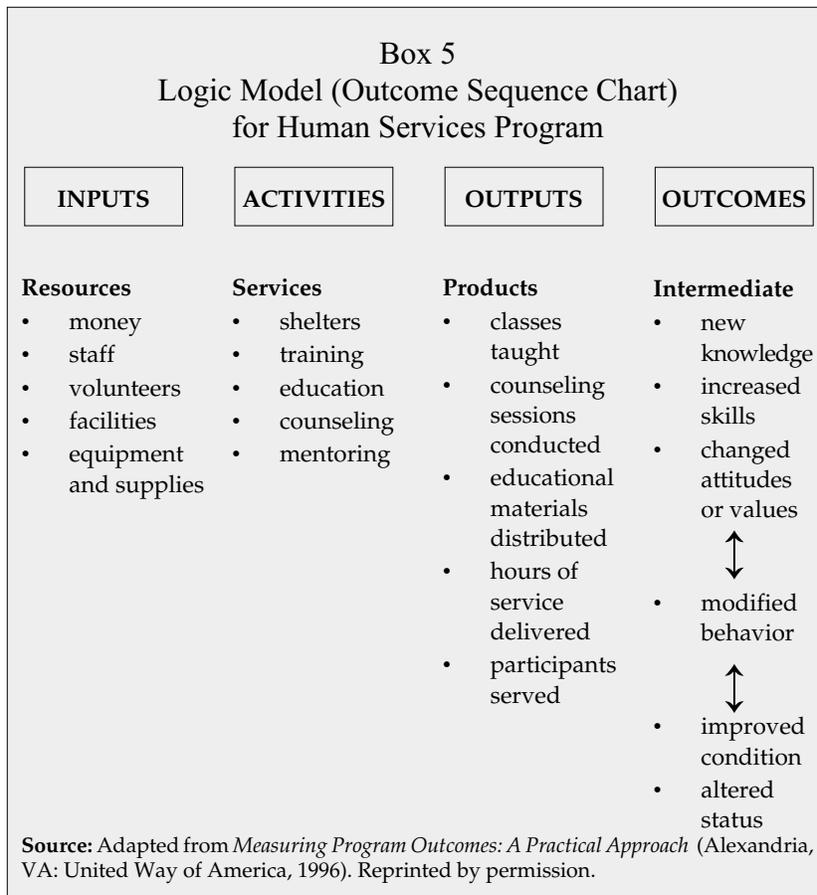
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useful way to summarize the flow across the information categories just discussed. Box 5, based on material developed by United Way of America, displays such a system.

A consistent set of definitions categorizing various types of performance information — to be used across all programs — is the cornerstone of any performance measurement system. All too often, confusion among programs within an agency occurs due to unclear, inconsistent use of terms.

Definitions — or labels — perform the crucial function of enabling users of performance information to distinguish reliably among categories of data that have different implications and different uses. Numerous labels have been used over the years to



categorize performance information. Which particular set of labels an agency or program chooses is not the primary issue. The primary issue is to be able to determine which items should be regularly tracked. Appropriate labels help with that.

## Endnotes

- 1 The words *indicator* and *measure* are essentially interchangeable, but *indicator* seems preferable. The word *measure* is ambiguous because it can also mean either an action taken to improve a situation or the act of measuring.
- 2 The word *effectiveness* has been used by some governments in place of *outcomes*. However, *effectiveness* implies more a casual linkage than usually warranted by the data, so the word *outcome* seems preferable and is more often used (such as in the federal Government Performance and Results Act of 1993).
- 3 Texas Governor's Office of Budget and Planning, Legislative Budget Board, *Instructions for Preparing and Submitting Agency Strategic Plans: Fiscal Years 1999-2003*, Austin, January 1998, p.39.
- 4 From the perspective of an individual state or local government, completion of its own plan is an output.
- 5 Some may prefer to consider this an intermediate outcome needed to achieve improved learning.
- 6 Some agencies have used the word *impact* to refer to social outcomes, as distinguished from outcomes to individuals. Such social outcomes are better considered as broad end outcomes.
- 7 Some analysts view them as outputs, which demeans their importance. Fortunately, even these analysts often agree that these service characteristics should be measured and tracked.