THE USEFULNESS OF A STANDARDIZED FORM FOR THE PROCESS ANALYSIS STAGE: A CASE STUDY

Lorraine E. Ferris
University of Toronto
Sunnybrook Health Science Centre, Toronto
Susan Rosenstein
East York Health Unit, Toronto

Abstract: Process analysis is useful in determining how, why, and under what conditions a program succeeds or fails in creating certain outcomes. Process analysis is conceptually appealing because the results can be used for program replication, improvement and pruning. As well, process analysis aids in the identification of confounding variables operating in a program that may effect outcomes. Unfortunately, a major practice obstacle in conducting process analysis is determining measures and methods for collecting process data. This article describes the Standardized Tracking Form (STF) used to record information useful for process analysis. A case study of how the STF is used by a health unit is presented and discussed.

Résumé: L'analyse d'un processus est utile pour déterminer comment, pourquoi, et dans quelles circonstances un programme réussit ou ne réussit pas a réaliser certains résultats. Ce concept est attirant parce qu'on peut utiliser les résultats pour la réproduction, l'amélioration, et la modification du programme. En plus, l'analyse d'un processus assiste a l'identification des variables non definis qui pourraient influencer les aboutissements d'un programme. Malheureusement, un obstacle considérable rencontré dans l'analyse d'un processus est la dét´rmination des mésures et des methodes par lesqualles on rassemble les données d'un processus. Cet article décrit le "Standardized Tracking Form" (STF) — le formulaire standardisé pour l'examen d'un processus — qu'on utilise pour enregistrer les renseignements utiles dans l'analyse d'un processus. Une étude de cas qui montre comment un département de santé emploie le STF est préséntée et discutée ci-dessous.

Process analysis examines information gained from the on-going monitoring of process variables during the implementation and operation phases of a program. The process analysis attempts to

understand and document the day-to-day realities intrinsic to the program. These realities affect the program's internal dynamics and actual operation. The focus of process analysis is to answer the question "what happened" by focusing on "what is happening" (Deutscher & Gold, 1978). Process analysis investigates how a product or outcome is produced instead of examining the actual product itself (Patton, 1986). For example, the questions addressed by process analysis may include: What activities are happening in the program? Do the various activities within the program fit together? Why are these specific things happening in the program? What obstacles are experienced by staff in the implementation of the program? Process analysis yields more information than that available by simply monitoring the functioning of a program (Mullen & Iverson, 1986). Consequently, results from process analysis are an important source of information for the replication, improvement, and pruning of a program (Green & Lewis, 1986).

Process analyses are appealing for a number of reasons. First, despite careful program planning and design, unforeseen circumstances that shape programs or modify initial plans can still occur. For example, programs can be influenced by the people who provide the program or who are the recipients of the service. As well, there will always be important nuances that give the program its character which may not have existed or been identified during the planning and designing of the program. Second, program staff may not spontaneously review with admininstrators all obstacles which cause them to modify their activities. This situation may arise for a variety of reasons including no forum for staff to discuss these issues, not perceiving the obstacles to be important, or not viewing the changes to the program as being significant. This information may be essential, however, in understanding why a program did not work or for documenting information necessary to replicate a program. Third, the utility of process analysis in understanding results of an outcome evaluation is substantial. (An outcome evaluation examines how effective a program is, or what effects it has achieved.) Since process analysis determines how, why, and under what conditions a program succeeds or fails in creating certain outcomes, it provides the opportunity to identify confounding variables. Confounding variables can play havoc in programs and can, if undetected, lead to misleading conclusions about program outcomes (Suchman, 1967; Green & Lewis, 1986; Weiss, 1972).

Although process analysis is conceptually appealing, the major obstacle in practice is determining measures and methods for collecting data to answer the question "what is happening?" There is no one instrument used for this purpose; often a number of sources are used to capture the

essence of what is happening. The challenge is to find a balance between practice issues that focus on pragmatics and evaluation issues that focus on preciseness.

This article describes a standardized form designed to gather information useful for process analysis. It was developed as one source for tracking "what is happening" in a program and is expected to be used in conjunction with other tools. The *Standardized Tracking Form* (STF) is maintained by staff throughout the cycle of program planning and operation. The major focus of the paper is on the STF's practical use. A case study of how the STF is being used in a school health program in a local health unit is presented and discussed.

THE STANDARDIZED TRACKING FORM

Overview

In developing the STF, several issues were considered. To have appeal to program administrators and staff, the STF needs to perform well in the field setting by being easy to master and use. The STF must be versatile so that all types of information concerning a program may be documented, as well as be flexible enough to record pertinent information from different programs. Yet, the STF must have some element of standardization or the details will not be easily amalgamated with records from other personnel or programs. In terms of its performance, the STF must be able to track the difference between what was planned and what actually happened in the program, while being detailed enough to provide information on the process that led to the failure or success of a program.

Description of the STF

The STF is an open-ended, semi-structured form that requires its users to record program information using three specified concepts: *Input, Output, and Outcome* (IOO) (See Appendix). *Input* refers to the actual tasks that need to be completed in order to accomplish a specific program objective. What input other than resources, is required to meet specific objectives? Or said another way, what tasks must be put into the program in order to meet specific objectives? There can be, and often will be, many actual tasks planned to meet an objective. Thus, there will be many "inputs." *Output* examines what resources are required to meet each actual task. What resources must be taken out of the program in order to accomplish the tasks? These resources, for example, can be in

the form of money, personnel, supplies, services, or anything else required to output the planned task. *Outcome* refers to what actually happened or what the actual task truly looked like when it was completed. If a planned task is never completed, then the outcome would show that the activity was never performed.

The Inputs and Outputs are written during the planning of a program while Outcomes are written during the implementation and operation of a program. It is important that the information in the STF is not altered after its completion. For example, let's suppose that one of several activities planned to address a specific activity is never completed. In this case, it is important that the historical information concerning the activity remain in the STF. When the "outcome" is written showing that the activity was never completed, the original entry on the STF which indicated the inputs and outputs to address this objective as well as the "outcome" should not be eliminated; the historical record should remain. This basic rule should apply for all the various types of entries on the STF.

The IOO process is completed for *each* program objective. There are no limitations in the number of IOO entries for an objective. The number of entries will vary depending on the tasks that need to be completed. For each IOO entry, the more detail provided, the more reliable and valid the information. Unnecessary detail, however, will distract from the more important details and be too time consuming to write and analyze.

The STF can be completed by an individual or by a team. It is important that those most familiar with the task(s) write the applicable IOO. If different staff members are responsible for different tasks, then the STF will be completed by a team; otherwise one individual should complete the STF. Sometimes, different staff will write the Inputs/Outputs than those who write the Outcomes. If staff terminate during the program, new staff should assume the responsibility of completing the STF.

Lowering Staff Resistance to Maintaining STFs

In developing the STF, several criteria were considered important if staff resistance was to be lowered. First, the STF will need to be considered by staff as worthwhile and hence, important to support. The worth of the STF can be emphasized in human service organizations, for example, by focusing on its usefulness in offsetting the ramifications of high staff attrition rates. The primary value of the STF is in assisting new staff to gain a clearer understanding of, and appreciation for, activities within a program. Rather than learning about components of a program through

interactions with remaining staff, who may or may not have been involved with the program, the new staff member may glean this information from the STF. In these cases, the main advantage is that the STF was maintained by staff directly involved in the implementation and operation of the program.

Second, the STF will need to have some immediate benefits for staff and administrators. Immediate benefits for staff could be seen by accurate decision making and project ownership. Because staff can use the information from the STF for advocating for additional resources, performance appraisal, and future programming, the documentation increases in its inherent value. Administrators can return to STFs to substantiate requests for tangible and intangible resources. Communication between staff and managers can also be improved by having regularly scheduled discussions on the results of the STF.

Lowering staff resistance can only be realized by training staff through examples and having management show their support for the STF. The training should focus on how information from the STF is worthwhile in replicating, improving, and pruning various programs as well as demonstrating how the documentation is used to improve communication between program staff and administrators. Training sessions should also provide the necessary hands-on experience to give staff a chance to gain confidence in accurately completing the STF. Management support is best demonstrated by providing staff with the adequate amount of time to complete the STF. As well, management should periodically discuss how the findings will be utilized.

THE CASE STUDY

Description of the Program

The *Tobacco Free High School Project* is a one-year research and community-based tobacco education and cessation program for high school students.[1] A number of research and health promotion initiatives have become a part of Tobacco Free. The overall goal of the program is to collaborate with the schools to create internal environments supportive of non-smoking behaviour. For the purpose of this case study, the program objectives that will be addressed are to coordinate and implement tobacco awareness and prevention campaigns for both smokers and non-smokers. The two main activities that were planned to meet these objectives were a school "kick off" assembly and Tobacco Free Week. Table 1 highlights sections of the IOO process for this objective.

Table 1
Activity 1: Kick Off Assembly

Input (actual tasks)	Output (resources required)	Outcome (what actually happened)
Distribution of contest entry cards to promote contest	cards designed ($50)	Two-sided cards displaying rules and slogan were designed ($50)
	cards printed (1600 at $150)	1600 cards were printed, four per page, at $150 Only 1000 cards were necessary. This included the extras required for the 140 students who participated in the contest. Although none of the entrants brought the cards with them, we felt it was beneficial to distribute them in this fashion for promotional purposes. More accurate estimation could have saved $56.
	volunteer to distribute cards	Committee members distributed the cards when students left the assembly.
Development of promotional materials	design and order banners ($100)	3 banners were designed and ordered ($90): The Hot Air Challenge-Are You Full of It?, Tobacco Free, and Quit and Win Contest. Cost saving of $10.
	design and order tee shirts (100 at $1000)	100 tee shirts ordered; Tobacco Free on the sleeve; Hot Air Challenge—Are you full of it? with logo on the back. 20 used for prizes. Drama students, committees, and staff received them. Total cost was $1000.
	design and order mirror/buttons (500 at $300)	500 mirror/buttons designed and ordered with tobacco free logo on it. Total cost was $450 ($150 cost difference due to failure to include cost for artwork)
Demonstrate Quit and Win Contest	someone to demonstrate contest	The committee responsible for the Quit and Win Contest had planned a way to tell students about the contest during the assembly. However, that morning, a student showed up an hour before the assembly indicating that he had written a RAP. It was terrific and very appropriate. The committee approached him about performing on stage at the assembly. The result was that this unplanned resource was a huge success.
		The RAP was so successful that a video was produced on a different occasion and used throughout the remainder of Tobacco Free.

Table 1
Activity 1: Kick Off Assembly

Input (actual tasks)	Output (resources required)	Outcome (what actually happened)
Drama presentation	drama teacher approached	One of the teachers on the planning committee contacted the drama teacher. There was no time or interest in participating in the assembly.
	students to perform the play	Not necessary.
Contact football team to participate in the FITJIT	football coach	A teacher on the committee approached the football coach to see if there was interest in having the football team participate in uniform in the FITJIT. There was no interest, primarily because of the difficulty and cost associatedwith using and re-cleaning already cleaned football uniforms.
Organization of RAP Contest	information meeting about the organization of the RAP Contest	An information meeting was scheduled; no one showed up.
	auditions	An audition was held; no one showed up. As a result, the committee members planned an alternative event for the assembly. The new event, called "Talking Tobacco", was planned and transferred to the health fair, as a part of Tobacco Free Week. It involved a table top display where students could voice their opinions about pre-determined questions on tobacco use *while on video tape.*

Process Analysis

The STF performed well in the field setting and was versatile enough to record valuable information. This was established by its success in providing information useful in detecting differences between what was planned and what actually happened in the program. From the IOO, three areas of evaluative concern are highlighted: costing, staffing, and reasons for discrepancies between planned and actual activities.

Costing. The IOO captured a very serious costing issue, the delay in overall funding. This delay jeopardized one of the major objectives of the program; that of teaching and facilitating classroom discussions (see Table 1). An outcome evaluation of this program lacking this crucial

information would have led to invalid conclusions. Subsequent replication of this program would also have been at risk without this information.

The IOO showed that costs were both over- and under-estimated. For example, the displays were overestimated by $300 (see table 1), while the additional staff costs associated with health fair tables were underestimated by $400 (see table 2). Larger scale costing errors, paired with stringent budgetary restrictions, could have seriously affected the program outcomes. If costing errors had resulted in program changes or were contributory factors leading to unsuccessful program outcomes, the IOO should have recorded these events.

Table 2
Activity 2: Tobacco Free Week

Input (actual tasks)	Output (resources required)	Outcome (what actually happened)
Development of lessons	Coordinator to develop content	Lesson plans were not developed due to delay in funding for the project, and specifically, for the coordinator. Instead, this activity is planned for the next school year.
Organize the physical space for the health fair	volunteers to "person" tables	Students from the committee signed up to "person" the tables. However, because of the complexity of the contest, this was not enough coverage. Representatives from the Health Unit, clerical and nursing, were called in to assist. Additional cost $400 for salary support.
Develop two display components for the Health Fair	development of displays on monetary cost of smoking ($300) and on second hand smoke ($300)	Two displays were planned. However, the coordinator was able to combine both ideas into one display. Cost saving of $300.
Organization of video interviews	video camera and interviewer	Originally planned as an adhoc interview in hallways, this event became a collection of interview segments. This event changed because of the failure of the RAP contest in the kick off assembly. It was a successful alternative.
Award the prizes	prizes	Only 3 students who actually quit smoking came for the prize draw. We felt that the poor turnout was due to the draw being held during the last week of school, the fact that students knew they would have to submit to a saliva cotinine test, and/or because they forgot the date for the draw.

Staffing. Analysis of the IOO shows that the number of volunteers required to be at the health fair tables was more than that estimated (see table 1). Underestimating staffing requirements not only affects costing, but if staff are recruited from other program areas or from a different program altogether, there may be other repercussions. First, the other activities that are the responsibility of the recruited staff could be in jeopardy. The effects of staff absence from their respective activities or programs would be tracked by their STFs. Second, recruiting staff who are not familiar with the program introduce an extraneous program issue. Program evaluators should be advised that some (or all) program staff were unfamiliar with the activity so that this event can be taken into consideration for the outcome evaluation.

Reasons for Change. The most useful information captured in the IOO was the reasons for the differences between what was planned and what actually happened. In this case study, failure of activities were clearly recorded so that program evaluations could monitor the effects. For example, the drama classes and football team had decided against their original decision to participate in the assembly, so their involvement in this activity was eliminated (see table 1). The RAP Contest failed because no one participated in the information meetings, nor did anyone audition. The "Talking Tobacco" activity was used as a replacement, however, and was highly successful (see table 1 and 2). Information such as this is essential for program replication, improvement, pruning and evaluation.

CONCLUDING REMARKS

Determining measures and methods for collecting data to answer the question "what is happening" in a program is difficult. The STF described in this article provides one approach to documenting these events. The form is easy to use and to master, versatile so that all types of information can be recorded, and flexible enough to record pertinent information from different programs. In terms of its performance, the STF was shown to be useful in tracking the difference between what was planned and what actually happened in the program, and detailed enough to demonstrate the reasons for this discrepancy. The information provided in the STF should be verified through a variety of methods and analyses. For example, flow charts, interviews, minutes from meetings, and other forms of program documentation could be used for this purpose. As well, information from the STF should be used to guide a more targeted in-depth examination of "what happened." If the purpose of the

evaluation is for program improvement or replication, this activity is essential. Purposeful or random selection of cases to address worrisome issues detected in the STF is one method that could be employed. Another method, particularly if the program is large and diffuse, is retrospective or prospective studies designed to provide a more detailed examination of actual or potential problems.

NOTE

1. The Tobacco Free High School Project is sponsored by the East York Health Unit, East York, Ontario and is externally funded by Health and Welfare Canada.

REFERENCES

Deutcher, I., & Gold, M. (1978). Traditions and rules as obstructions to useful program evaluation. In N. Denzin (Ed.), *Studies in symbolic interaction* (Vol. 2). Greenwich, CT: JAI Press.

Green, L.W., & Lewis, F.M. (April 1981). Issues in relating evaluation to theory, policy, and practice in continuing education and health education. *Mobius, 1*, 46–58.

Green, L.W., & Lewis, F.M. (1986). *Measurement and evaluation in health education and health promotion*. Palo Alto, CA: Mayfield Publishing Company.

Mullen, P.D., & Iverson, D.C. (1986). Qualitative methods. In L.W. Green & F.M. Lewis, *Measurement and evaluation in health education and health promotion*. Palo Alto, CA: Mayfield Publishing Company.

Patton, M.Q. (1986). *Utilization-focused evaluation*. Newbury Park, CA: Sage.

Suchman, E.A. (1967). *Evaluation research: Principles & practice in public service and social action programs*. New York: Russell Sage Foundation.

Weiss, C.H. (1972). *Evaluation research*. Englewood Cliffs, NJ: Prentice-Hall.

Appendix
The Standard Tracking Form (STF)

Name of Program _____

Objectives: Are there clearly defined objectives? [ ] yes [ ] no

How many objectives does the program have? _____

Describe the objective addressed in this STF: _____

_____

_____

_____

_____

_____

Key Words for Objective: _____

INPUTS

Name of Program _____

Key Words for Objective: _____

Number of Pages of the *Inputs* form: _____

[1]   Inputs refers to the actual tasks that need to be completed in order to accomplish the above objective.

[2]   Itemize each of the tasks in the order that they need to be completed. Designate tasks which need to be addressed together with a letter after the number (i.e., 2a; 2b; 2c).

[3]   Provide a brief description of the task.

[4]   Attach additional pages if necessary.

Note: Please refer to the example if you require clarification or see the appropriate person in your program.

Number	Task	Brief Description	Start Date/Completion Date	Your initials

OUTPUTS

Name of Program _____

Key Words for Objective: _____

Number of Pages of the *Outputs* form: _____

[1]   Outputs are the resources required to meet each of the tasks identified in the *Inputs*. Resources can be in the form of money, personnel, supplies, services, or anything else required to ouput the planned task.

[2]   Record the resources needed to meet the tasks previously identified. Use a new *Outputs* form for each of the tasks. For example, you will have all the tasks listed in the *Input* form but a different sheet of the *Output* form for each task listed.

[3]   Attach additional pages if necessary.

[4]   Record your initials or and the date after each entry. (Groups please use GROUP instead of initials.)

Note: Please refer to the example if you require clarification or see the appropriate person in your program.

Task Name and Number _____

Brief Descriptionof Necessary Resources:

Finances (attach budget if necessary)

_____

_____

_____

_____

_____

Personnel:

_____

_____

_____

_____

Supplies:

_____

_____

_____

_____

Services:

_____

_____

_____

Other (describe)

_____

_____

_____

_____

OUTCOMES

Name of Program _____

Key Words for Objective: _____

Number of Pages of the *Outcomes* form: _____

[1] Outcomes refer to what actually happened or what the actual task truly looked like when it was completed.

[2] Record the outcomes of each of the tasks identified in the *Inputs*. Use a new *Outcomes* form for each of the tasks. For example, you will have all the tasks listed in the *Input* form but a different sheet of the *Outcomes* form for each task listed.

[3] Attach additional pages if necessary.

[4] Record your initials or and the date after each entry. (Groups please use GROUP instead of initials.)

Note: Please refer to the example if you require clarification or see the appropriate person in your program.

Task Name and Number _____