

**Patient Flow Analysis
for Windows (WinPFA)**

DATA COLLECTION MANUAL



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Introduction

This *Patient Flow Analysis for Windows (WinPFA) Data Collection Manual* complements other Centers for Disease Control and Prevention (CDC) manuals (see http://www.cdc.gov/reproductivehealth/Products&Pubs/PFA_support/Instructions.htm) that provide instruction on Patient Flow Analysis (PFA). Like the others, this manual is a primer, covering the more fundamental issues faced by users new to WinPFA and PFA 2.0. Specifically, this manual outlines all PFA study steps and describes general data collection methods, but it also introduces some advanced aspects of PFA for users who have a moderate amount of PFA experience and would consider using more sophisticated PFA study designs. These advanced presentations are contained in “More Advanced PFA Study Design” sections throughout the manual.

The final manual in this CDC series, *Interpretation and Use of the WinPFA Reports and Graph* will be available in late 2006. After users complete data collection and data entry, this manual will orient users to the formulas used for the (statistical) reports, the significance of these data, and how clinics can apply the data from the reports.

A Note to All PFA Users Much of the terminology found in this manual is unique to PFA and WinPFA; for definitions, please see the glossary (pp. 94-96).

A Note to Experienced PFA Users Those experienced in PFA 2.0 should cautiously note that WinPFA, unlike PFA 2.0, does not make use of codes during data entry. Nonetheless, for data collection, codes can be easily understood substitutes for the multiple-character labels (which use a maximum 30 characters). To exploit the advantages of the labels:

- Make a studied selection of which optional variables to include in your study, and
- Define precisely the values (or descriptions) corresponding to each variable; then
- Define, if desired, a simple coding scheme using one or more characters.

Along with the new 4-character staff ID, data collection becomes more transparently understandable for staff—traditionally, your primary data collectors. Consequently, data entry with WinPFA is more error-free than PFA 2.0.

A New PFA Convention: 30-Second-Duration Events

With WinPFA’s new convention, all documented events with starting time equal to the end time are now 30 seconds in duration. The (statistical) reports and the graph and all timed clinic events reflect this new convention. For example, for an event that starts at “5:55 pm” and ends at “5:55 pm,” WinPFA documents the data base as “5:55.00 pm” and “5:55.30.” By contrast, PFA 2.0, which documents these times as “5:55” and “5:55,” identifies this time span as 1 minute in duration. In other words, for PFA 2.0, this event is equal in duration to an event starting at “5:55 pm” and ending at “5:56 pm.”

What are the implications of this new convention? Most important, it provides improved precision in describing the actual duration of events documented as having the same

starting and ending times. If, for example, your study identifies 100 such events, some likely last for 50-59 seconds, others 1-10 seconds, and still others last between 10 and 50 seconds, an average 30 seconds—the basis for this new convention.

Additional Assistance For more advanced levels of understanding of Patient Flow Analysis, training is available from CDC as well as several consultants around the country. Please contact CDC for information:

Services Management, Research & Translation
Applied Sciences Branch
Division of Reproductive Health
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention
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What Is Patient Flow Analysis for Windows?

Patient Flow Analysis for Windows (WinPFA) is software that tracks client flow and the use of personnel in health service clinics. Managers can use WinPFA to collect data for statistical documentation and graphical representation of a clinic session. You may use these data to identify problems in client flow, determine personnel and space needs, and track clinic costs per client visit. The PFA tool helps you assess the effect of clinic systems on client flow. Additionally, with its expanded cost- calculation features, WinPFA provides a broader basis for evaluating systems change in clinics.

Your health service organization can use WinPFA to measure the performance of individual clinics, design new clinics, improve the clinic pattern, and review personnel needs to increase clinic effectiveness. The results could include:

- Reduced client waiting time (and frustration) in the clinic
- More equitable distribution of staff workload
- Greater staff satisfaction with the overall delivery of services to the client
- More clients might be served at the same, or even reduced, cost.

Users with PFA 2.0 experience should note that the former restrictions on various aspects of study design due to inherent limitations of PFA 2.0 are virtually eliminated. WinPFA's sole remaining restriction limits studies to 24 hours, but during the same calendar day. Markedly contrasting with PFA 2.0, WinPFA has the capacity to document visits by more than 1 million clients and track more than 90 services delivered by more than 1 million staff. With WinPFA, your challenge is to design a study that makes prudent use of the expanded capacity, but does not burden the clinic, its staff, or its clients with a too-demanding study protocol that intrudes on normal clinic operations.

Output

The WinPFA Graph

Historically, PFA users have come to rely on the graph's visual power in two ways: first, as an aid in identifying bottlenecks and other systems problems in the clinic; second, to summarize the PFA study analysis in a quickly understandable way for the clinic staff, manager, and administrator. The graph for WinPFA will meet these two user needs. However, with that graph not available until late 2006, users might need to continue to rely on PFA 2.0 for the graph.

How to Produce the Graph. for a WinPFA Data Set: After designing and implementing a study using the WinPFA data collection methodology, to produce the graph with PFA 2.0, you need to follow these steps:

- If the study involved more than 199 clients and more than the PFA 2.0 equivalent of 50 staff registers, you will need to select a sample of clients and staff representative of the session. Be sure to choose staff who delivered services to the clients you selected.

Note: In PFA 2.0 each staff register represents one staff person delivering a single service; if that same person delivers a second or third service, in PFA 2.0 that person requires a second and a third register. In WinPFA, by contrast, staff require only one register each, despite being able to deliver a range of tasks.

- Complete data entry of those clinic, client, and staff data from your WinPFA study that PFA 2.0 will accept. Also, input Reason for Visit, Task Assigned, and Subclassification data under the PFA 2.0 labels. Save all remaining data; you will enter them in WinPFA after importing the data set you have created in PFA 2.0.
- Generate your graph, appointment table, and legend.
- Next, follow the instructions in the Patient Flow Analysis for Windows (WinPFA) Data Entry Manual for importing PFA 2.0 data sets.
- Before completing entry of your remaining data in WinPFA, (for example, noncontacts, unavailables, user-defined variable data—see the Glossary for these and all PFA and WinPFA terminology), do not make any changes to your WinPFA labels unless you likewise make those same changes in each client and staff register you imported. For example, wishing to take advantage of the 30-character length that WinPFA allows for the labels, you might consider editing the task “BP” to “Blood Pressure and Pulse Check”; if you make that edit, then you must navigate to each client’s record imported into WinPFA from PFA 2.0, proceed to the “Contact” tab, and change every contact that still shows “BP” for the task—in short, changes made in the WinPFA labels do not result in automatic changes in the client or staff records.
- Complete entry of your remaining data to generate the (statistical reports).

The PFA 2.0 Graph

Although future editions of this manual will describe here the WinPFA graph, with that graph as yet unavailable, we instead offer an overview of the PFA 2.0 graph.

PFA 2.0 generates a graph that gives a 2-dimensional representation of the clinic session. Figure 1 shows a *representation* of the graph, the following paragraph explains. This graph is fairly easy for staff persons to understand and allows problems in clinic management to be visualized. The upper portion depicts patients' visits; the lower portion presents the services delivered by staff persons during the clinic session.

The patient visit lines describe an individual patient's visit, each visit consisting of one or more service contacts. These are shown as one or more uppercase alphabetic characters with each representing 1 minute of service time. The time between service contacts is represented by dashes, with each representing 1 minute of non-service time. For example, in the graph for study XX001471 (from a small family planning clinic), below the horizontal time line running from 5:30 pm to 9 pm, Patient 1's visit is presented. Arriving at approximately 5:55 pm, Patient 1 receives 1 minute of service R; R, according to the legend, represents the Reception service. From 5:56 through 6:30, Patient 1 receives no services. From 6:31 through 6:34, Patient 1 receives 3 minutes of L, which the legend translates as Laboratory. The remainder of patient 1's visit, in chronologic order, consists of more non-service time, 1 minute of O (Other non-specified service), additional non-service time, 4 minutes of concurrent services A (Assist Clinician) and P (Physician). Patient 1's visit is completed by 3 more minutes of non-service time, one more minute of the O service, 1 minute of non-service time, and 2 minutes of E (Education).

There are additional 1-character symbols. At the end of Patient 1's visit line, the first, an A, represents patient 1's Reason for Visit; the second, also A, codes patient 1's Subclassification. The legend again translates these aspects of patient 1's visit: the Reason for Visit is annual (examination); the Subclassification is pill (that is, the patient's preferred method of family planning). Reason for Visit is self-explanatory. Subclassification, not as clear, allows patients to be grouped into as many as seven subpopulations. In this clinic, patients are grouped by preferred family planning method; other commonly used groupings include patient's gender and age. The graph also uses these symbols: < to mark the patient's appointment time; ' (apostrophe), found under the service codes, marks when the service contact started; N, after the patient number, indicates the patient had no appointment

The service lines, below the patient lines, depict the type, number, and length of service contacts that staff persons have with patients. Unlike each patient line, which represents the full range of services a patient receives, each service line represents only one service as delivered by only one staff person. Other staff persons' delivery of the same service would be represented by additional service lines. Staff persons who deliver two or more services would have a line for each corresponding to a specific service delivered.

Besides identifying when staff persons deliver services, these lines also identify staff time not identifiable with any patient. For example, in the graph for study XX001471, the first service line describes delivery of Assist Clinician services. As explained above, non-service periods are represented by dashes, periods of service by upper case alphabetic codes. The staff person who delivered this service is identified as V, the first character in the left margin. V may be the clinic's aide, Vivian. Vivian may also deliver another service in this clinic, for example, education. When this occurs, she needs a second register that identifies Vivian with the letter M (or any other letter you care to assign).

Figure 1, a sample of the graph produced by the PFA 2.0 software, consists, from top to bottom, of a horizontal time line (here running from 5:30 pm through 8:50 pm); followed by a series of horizontal lines each describing an individual client's clinic visit represented by waiting periods and service periods; then completed by additional lines each describing an individual staff member's workday represented by service periods and periods of no service. Please note that the landscape shape of the graph, as produced by the software, requires its vertical placement here.

The Report

Besides the graph, the WinPFA system produces a summary and seven data reports. Each report contains information about key aspects of the clinic session.

- Summary Presents an overview of data presented in Reports 1 through 6. [*Note: Overall Clinic Session costs are shown here only and not in the other reports. Also note that, if you document staff travel costs, WinPFA includes them among the session's prorated share of the annual costs.*] No data from Reports 9, 10, or 11 appear in the Summary.
- Report 1 Documents clients' Time of Arrival relative to their appointment time. Data are reported by client Reasons for Visit and Subclassification. Report 1 can help determine how well the appointment system is being managed and how clients are responding to that system.
- Report 2 Examines client time in clinic by Reason for Visit and Subclassification. Report 2 is divided into three sections: clients' time in clinic by Reason for Visit (RFV) and Subclassification (SUB); clients' service time by RFV and SUB; and clients' noncontact service time by RFV and SUB. Each section includes the number of clients per category, the mean client time in minutes, the median client time in minutes, the minimal and maximum client times by category, and the mean proportion of client times by category spent receiving services (with data for contact services and noncontact services). These data are useful for modifying or developing an appointment schedule.
- Report 3 Documents the time clients spend waiting between service "events" (contact, client noncontacts, staff noncontacts) and displays the average (that is, mean) waiting time by both event and staff's official designation. These data identify bottlenecks in the client flow.
- Report 4 Compares the time allowed by the clinic for staff to provide service with the actual time the staff spend delivering contact and noncontact services. Data are broken down by task (that is, contact) and by staff's official designation. Managers can use this information to gain insight into how service responsibilities are distributed among staff members. These data may allow them to identify changes that would help remove bottlenecks at key service-delivery stations.
- Report 5 Further describes clients' service time, combining contact and noncontact service times and assists with decisions about modifying or developing appointment schedules.

- | | |
|-----------|--|
| Report 6 | Describes client service minutes by task (both contacts and non-contacts) by RFV, by SUB, and by RFV and SUB combined. |
| Report 7 | Calculates costs per client by service, RFV, and SUB, if you document personnel and other clinic expenses. |
| Report 8 | Lists the length of each staff member's clinic day. the cost to the clinic for each minute of provided service. the number of contact and noncontact clients served, the number of contact and noncontact service minutes delivered, and the proportion of the clinic day each staff spent with clients. |
| Report 9 | Displays by staff person and by designation the amount of time available to provide services to clients, the number of clients served, and the clients-per-hour ratio. |
| Report 10 | Presents the actual client flow by RFV, that is, the sequential order of services, from most-to-least-common sequence, received by the clients. <i>[Note: See "Client Timeline" in the "Tools" drop-down list for a listing by client of the contacts and noncontacts.]</i> |
| Report 11 | Uniquely analyzes data from the 4 user-defined fields. Data for the first 3 are displayed as frequency lists. Data in the fourth field, the only purely numeric field, are sums, averages (mean and median), and minimum and maximum values. |

In your WinPFA studies, you may choose to include or exclude cost data. If you include costs, you may further elect to limit the data to either staff expenses only or overall clinic expenses (that is, personnel plus non-personnel overhead costs). To understand the implications of these decisions, you should review WinPFA's cost calculations which appear in the summary report and reports 7 and 8. You will document the data used in the cost calculations in the Staff Window, "Compensation" (Tab #2) and in the Clinic Window, "Operating Costs" (Tab #2). Figure 2 presents a sample Summary Report.

Figure 2, a sample of WinPFA's Summary report, which targets persons such as clinic administrators who might desire an overview of clinic operations and is one of 13 offered by WinPFA; for the Summary, WinPFA extracts most data from the other 12 reports and orders them as Subreports A through G. Subreport A displays brief 2-3-word descriptions for the clinic session as selected by study organizers and planners. Subreport B consists of a line listing of data which describes a range of clinic characteristics, including number of appointments, number of clinic events (that is, the sum of adding total contact events, total non-contact event, and unavailable events), and the duration of the session from the clients' perspective and the staffs' perspective. C captures data specific to client visits. D offers a general summary of the staff's workday. E presents a more detailed picture of the workday by quantifying the duration among all staff for contacts and non-contacts, then

presenting their mean duration per staff member and individual client and then offers the portion of the overall staff workday accounted for by each event type. E, also focusing on the staff workday, presents total service time, total workday, total unavailable time, total available time, and total non-reported time (that is, the measure of the extent to which the study failed to account for the full range of workday activities). Subreport F breaks clinic costs down by client reason for visit category; note that for each category, this report presents two consecutive rows of data: row 1 offers contact service costs and non-contact known in-session costs; row 2 offers distributed costs, personnel costs, pro-rated annual costs, and aggregate costs for the reason for visit category; Subreport G reports similar costs but broken out by staff funding source.

Figure 2 Sample Summary Report

WinPFA Summary Report
5/3/2006

C:\WinPFA\Reports\10-17xxModifiedDataSet1 Modified for STD
Demo_Summary.Rpt

Date of Study Tue, January 1, 1991

The data shown below in this report provides an overview of the clinic session documented by your PFA study. These data, as well as the data found in the body of the report, are dependent on your study design and your ability to carry out that design; for study design considerations and data collection procedures, please see the Patient Flow Analysis for Windows(WinPFA) Data Collection Manual; to request a draft copy send an e-mail to pfa@cdc.gov.

Summary A Clinic Characteristics

Comments
URBAN
CONVENIENCE HOURS
F
FAMILY PLANNING
G
M
PFA v2.0 Data set XX001471 Imported DBL-V TEST DATA SET

Summary B Introduction

Number of Appointments made; 23
Number of Appointments kept; 13 56.52%
Number of Staff; 6
Clients Served InSession; 15
Clients Served Not InSession † 2
Number of Contacts; 105
Number of NonContacts; 21
Number of UnAvailables; 21

Number of Events; 147
 Published Clinic Hours 6:30:00 PM to 7:30:00 PM
 Earliest Time in the Data Set 5:55:00 PM
 Latest Time in the Data Set 8:48:00 PM
 Earliest Time, Client 5:55:00 PM
 Latest Time, Client 8:48:00 PM
 Earliest Time Available-To-Serve 5:55:00 PM
 Latest Time, No-Longer-Available-To-Serve 8:47:00 PM

† Clients Served this session but not registered in this session

Summary C
 Client-Oriented Data

Client Activity	Duration (Minutes)	% of Total Time in Clinic
Contact Time	15.93	15.88%
Non-Contact Time	4.80	4.78%
Unavailable Time	1.07	1.06%
Gross Waiting Time	78.53	78.27%
Total Time in Clinic	100.33	100%

Summary D
 Staff-Oriented Data; Average Work Day

Service Type	Duration Per Staff Minutes	% of Total Minutes	% of Staff Delivering
Contact	52.67	88.76%	100.00%
Non-Contact	6.67	11.24%	66.67%
Total	59.33	100.00%	

Summary E

Staff-Oriented Data; Service Delivery Duration

Activity	Total Duration (Minutes)	Duration (min)		% of Total Workday
		For The Average Staff	Client	
Time Delivering Contact Service;	316.0	52.67	21.07	51.30%
Time Delivering Non-Contact Service Known In This Clinic;	24.0	4.00	1.60	3.90%
Time Delivering Non-Contact Service UnKnown In This Clinic;	12.0	2.00	0.80	1.95%
Time Delivering Non-Contact Service UnKnown Not In Clinic;	4.0	0.67	0.27	0.65%
Total Service Time;	356.0	59.33	23.73	57.79%
Total Workday;	616.0	102.67	41.07	100%
Time UnAvailable;	18.0	3.00	1.20	2.92%
Time Available;	598.0	99.67	39.87	97.08%
Non-Reported; Time;	242.0	40.33	16.13	39.29%

Summary F
 Cost by Reason for Visit

Reason For Visit				
Contact Service Costs	Non-Contact Known InSession	Distributed Costs	Personnel Costs	ProRated Annual Costs
				Session Costs
Annual		\$12.74	\$0.00	
		\$9.00	\$21.73	\$54.08
				\$75.81
Initial		\$27.84	\$0.00	
		\$14.39	\$42.23	\$86.53
				\$128.76
Medical		\$3.73	\$2.34	
		\$3.60	\$9.67	\$21.63
				\$31.30
Total for All Reasons for Visit		\$44.31	\$2.34	
		\$26.99	\$73.63	\$162.24
				\$235.87

Summary G
 Personnel Cost by Funding Source

Funding Source	Contact Service Costs	----- Known InSession	Non-Contact UnKnown InSession	----- Not InSession
	Distributed Costs	Personnel Costs		
X	\$44.31	\$2.34	\$1.05	\$0.49
	\$26.99	\$75.17		
Total for All Funding Sources	\$44.31	\$2.34	\$1.05	\$0.49
	\$26.99	\$75.17		

The PFA Process: Planning and Implementation

Although the graphs and (statistical) reports are the most tangible products of the PFA system, it is the social dynamic among staff, both before and after the PFA study, which often proves more far-reaching and beneficial. The PFA process does not assume that simply doing a study will solve all the problems. Instead, PFA catalyzes change in the way a clinic does business by responding to the staff's concerns. Ideally, the PFA process will result in a renewed customer orientation and desire on the part of staff to see clients happier and themselves less burdened.

This process brings together different departments within the clinic to solve shared problems. In this sense, PFA can be an excellent team-building tool, creating (1) greater communication between departments, (2) better understanding of other departments' goals and needs, (3) focused clinic-wide goals and objectives, and (4) continuity in client care. For the process to be successful, cooperation and participation of all levels of the clinic organization are needed.

This section of the manual focuses on the PFA process and the unique roles played by staff. First is a discussion of the study coordinator, the leader of the PFA team. Top management's part in the PFA process is discussed next, then that of the PFA team in analyzing the output to identify barriers to service and implementing changes.

The Study Coordinator

The study coordinator serves as the impetus for change and is responsible for generating interest in the PFA process and keeping momentum and cooperation alive. This person is also responsible for carrying out the study. The study coordinator should be selected with great care. The staff must perceive this person as unbiased and receptive to their needs and ideas.

The clinic manager is often given the role of the coordinator by default. Yet, this may not be the best choice. Because of the position's pivotal role, choose someone highly motivated with effective communication and people skills. When selecting the coordinator, consider the following:

- Does this person have the skills needed?
- Can this person realistically devote the necessary time to the activities generated by the study?
- Will this person be able to view the PFA findings objectively?
- How does the staff perceive this person?

Management's Role

Realistically, change will not take place without management's approval and active involvement. Therefore, recruiting top management's help is essential. Equally true, however, is that even if top management feels strongly about doing something, if necessary support staff (the real implementers) are not on board with the idea, change is unlikely. These pieces must be brought together before success can be achieved.

First, assess the clinic's needs and determine if PFA can help. PFA will be extremely useful if the goal is to improve service to the client. If the clinic suffers from long client waiting times, overburdened and often-unhappy staff members with client-flow and paper-flow problems, change can begin with PFA.

However, PFA may not be the clinic management tool needed, or, not be the only tool needed. For example, if management wishes to evaluate the performance of personnel, PFA's comprehensive systems approach might not provide meaningful information. Additionally, using PFA in this manner may could compromise its role in building a team.

If management decides to use PFA, they and the study coordinator should reach an agreement defining their role and responsibilities. Permission for the study to proceed is not enough. Management must also commit to the process of change, buying into it to the same degree as staff. Indeed, staff usually need to know that management is committed to the process of change and long-range clinic improvements for the benefit of both clients and staff. In their commitment of both time and resources, the basis for management's involvement can be as informal as a verbal agreement or as formal as a memorandum.

The PFA Team

PFA's findings can help facilitate communication and promote staff involvement in the decision-making process. An effective way to begin is to form a team including representatives of each clinic department. This team will analyze study results and identify obstacles to client services, and work with staff to implement change.

The process of team building is as important as which staff members are on the team. An effective approach requires that key individuals in each department be identified and recruited. These persons should have organizational skills, knowledge of the clinic, and the respect of their peers.

Members of the PFA team might initially perceive their departments as having unique wants or needs. For example, administration may want a well-run, cost-effective clinic, or the clinicians may feel a need to provide clients with quality care without enormous amounts of paperwork. But, ultimately, as the team members exchange views and information, all come to learn that what everyone wants is a clinic in which clients receive quality care in a time-efficient manner and where staff feel fulfilled and appreciated.

Preparing for a PFA Study

This section describes the steps to be taken by the study coordinator when running a PFA. The material is presented in the order in which the steps are executed: (1) defining the study variables, (2) planning the logistics of the study, and (3) briefing the staff.

The Study Variables

Background: Careful selection of “Codes and Labels” is a key step in planning a study that yields useful data for decision making. The importance of the “Codes and Labels” to the study design is in its anticipation of the complete range of possible answers to nearly all questions the study will pose about the clinic. (The only questions which “Codes and Labels” does not affect are those requiring a quantifiable answer; for example, duration of services or cost and other financial data. Note that an optional study variable, the “User-Defined Numeric Value,” has no corresponding labels; instead, its values are limited to the range of integers (that is, whole numbers) between -1,000,000 and 1,000,000.

For example, a typical study may wish to know, “Why are the clients visiting the clinic today?” Or, in other words, “What are the clients’ *Reasons for Visit*?” If clients themselves were to answer, they might respond:

- “Because the clinic made me an appointment for my annual examination”
- “Because they told me I’d need to begin with an initial examination.”
- “I’ve got a medical’ problem.”

With clinic staff and clients often viewing the clinic from similar perspectives, staff would likely agree that “annual,” “initial,” and “medical” define the complete range of possible answers to our question (expressed in abbreviated form): “Reason for Visit?” These are precisely the “answers” that ought to become “Labels” as documented in “Codes and Labels.”

Three Definitions: Variables, Labels, and Codes. For PFA, “Reason for Visit” is one of more than 50 variables that a study can document about the clinic, the staff, and the clients. Each variable (or question), just like “Reason for Visit,” has a potential range of “answers.” In PFA, these “answers” are the “Labels.”

What are “Codes?” Used optionally and during data collection only, a “Code” is a symbolic or shorthand way of representing each “Label.” Possible single-character codes for the above labels could be “A,” “I,” and “M.” (or “«,” “£,” and “¶”), although multiple-character codes might be easier for your staff to use. The three code-label pairs corresponding to “Reason for Visits” are the fullest possible range of answers to the question, “Why are these clients visiting the clinic today?”

Before Selecting the “Codes and Labels.” To anticipate the fullest possible set of answers to the questions you study is designed to examine, you must decide what questions to ask. But before making this decision, first examine three factors that potentially bear heavily on the feasibility of implementing the study:

- The staff's PFA experience
- The data needed to evaluate your clinic system
- The costs of the study for the clinic.

Staff's PFA Experience Ultimately, successful PFA studies depend on the staff's familiarity with data collection. Staff with PFA experience are more likely to know their responsibilities; consequently, they will have confidence in their ability to collect data. This allows more complex designs to be feasible. On the other hand, a staff with limited PFA experience suggests a simpler and more controllable design for a less complex study.

Motivated to evaluate their clinic system, other users may design studies that inadvertently fail to take into full account that the staff's PFA responsibilities are in addition to their daily clinic duties. This can lead to two difficulties. First, if their duties preclude full compliance with the study design, then the study may yield incomplete, unreliable, and inaccurate data. Such data can lead to poor decisions about the clinic system. Second, if staff's enthusiasm to produce reliable PFA data lessens their attention to their usual clinic duties, then the clinic may render service of lower quality.

The objective of your study is to capture a picture of the *usual* clinic routine. Clearly, meeting this objective requires preventing the PFA study from influencing clinic operations. According to anecdotal reports, this influence can go beyond diverting staff's attention from their usual clinic routines. A PFA study can also bring about a curious and likely short-lived phenomenon, often labeled "the Hawthorne Effect." In brief, during the study, staff perform their duties "much more efficiently" and "with unusual enthusiasm." Their performance alters in response to their sense that the real purpose of the study is to evaluate their on-the-job performance, or, in other words, that the study is designed to focus on *their* performance rather than on the clinic's.

Three strategies may assist you in correcting such staff perceptions and in addressing their concerns:

- During the study design stage and during the staff orientation, emphasize that only *normal* clinic operations will allow PFA to reliably capture an accurate picture of how the system is functioning
- Before conducting the actual study, do one or more practice studies to allow the collection of PFA data to become more integrated into the daily clinic routine
- After each PFA study, demonstrate how application of the study data yields systems improvements.

The Data. During the study design stage, you begin to pilot the study toward collecting the volume and types of data required to evaluate the clinic system. With an eye to producing these data, you select the study variables and, in turn, the corresponding codes and labels. Often, though, the volume of data alone appears to determine the study's complexity of the study with less complex studies yielding fewer data and more complex studies producing more. Prudent study design pays at least equal attention to the data collection process itself.

You may view the data collection process as consisting of three elements:

- Who will collect the data?
- How they will do it?
- When they will do it?

But, do not neglect a fourth, possibly more fundamental element: *How to make data collection efficient*. An efficient study adheres to one overriding principle: **Collect only the data that you will use**. (In other words, do not take the “it-would-be-nice-to-have-such-and- such-data” approach.) To understand the practical application of this principle, examine WinPFA's reports and graph and also consider the following examples:

- If your study is to focus only on client waiting time, do not collect data on clinic costs (see “Operating Costs,” Clinic Register, tab #2).
- If your study is to focus only on how staff spend their workday, do not collect client “subclassification” and “user-defined” data.
- If your study is to focus only on education sessions for groups of clients, your design should explicitly exclude client non-contact and client-unavailable but should include staff noncontact and staff -unavailable data.

Costs Like all other tools used in evaluating clinic operations, PFA studies will accrue costs to your clinic. Because of this, the costs for materials, equipment, and staff time demand your close attention during the PFA study design stage. For most studies, materials and equipment costs, if limited to existing onsite computers and printers, will likely be relatively low. Much of the cost burden will be attributable to staff time.

Your staff's time commitment to PFA studies varies according to the role each member assumes. The small number of staff who assist in designing the study may use their colleagues for critiquing the preliminary designs. Smaller numbers of staff will educate others about data collection procedures and their responsibilities during data collection. Virtually all staff, or, at least those seeing clients, will document and collect study data. Finally, fewer staff will analyze and present study data to the clinic. After the study, all will work together to carry out the improvement plan deriving from the PFA study process.

The cost of staff commitments depends on three factors: their time, their rate of pay or remuneration, and how much PFA experience they have. Because staff time varies through each phase of the study, costs likewise vary for the following reasons:

- Core staff with an up-to-date understanding of the full range of clinic operations and operational protocols are the “PFA Team” which guides the study from beginning to end. This team often consists of clinic managers or supervisors of professional staff, who traditionally earn moderate to higher pay.
- The roles of the highest-paid staff, whether physicians, physician's assistants, nurse practitioners, or nutritionists, are often confined to data collection, helping overall costs to remain moderate, ***unless data collection is unusually demanding or especially time consuming***.

- Similarly, lesser-paid staff's time commitment is traditionally limited to data collection, *although their experience alone may dictate their being crucial players on the PFA Team.*
- With data entry and analysis usually managed by a portion of the PFA Team, costs again are kept to a moderate level.
- All staff ought to attend a data-for-action analysis session in which they review the study results and chart a course of action for improving clinic operations. Costs for a short discussion are generally moderate.

As your staff gain experience with PFA studies, the cost burden is likely to change. For studies that attempt only to replicate earlier studies, costs for all phases, except possibly for the data-for-action session, ought to lessen. By contrast, costs for more complex studies that seek to describe a greater portion of the staff's workday and the clients' visits are likely to increase for all phases of the study.

The Challenge: How to Achieve Balance? If the PFA study is to provide true assistance for evaluating and designing clinic operations, you must strive to ensure that the study does not overwhelm the clinic's routine. Clearly, most initial studies divert staff attention from their service-delivery responsibilities. Additionally, all studies incur some expense. Your challenge is to cautiously balance these realities against the potential that your study data will provide a quantifiable basis for bringing about improvements in clinic operations.

Consider these recommendations:

- View the PFA process as a learning curve: Start small, keep things manageable.
- Build PFA skills and knowledge using a measured approach, identifying all studies, no matter how uncomplicated, as opportunities for staff to accrue enough experience to become comfortable with their assigned data collection responsibilities.
- Use multiple studies to convince staff that their efforts produce valid data only if service delivery is as normal as possible.
- Schedule the study on a "typical" day.
- Before the study, debate actively if there is a clear need for all the data required by the study design.
- After the study, evaluate what other data might be needed to produce the desired improvements in clinic operations.
- If trained data-collection staff (or alternative technologies) are to handle the more costly staff's data collection responsibilities, provide sufficient training to ensure communication that is adequate for data accuracy and quality.
- Before implementing changes, be skeptical if data do not "look right"; overly trusting acceptance of such data will likely lead to poor decisions about improvements to clinic systems.

Codes and Labels Selection in WinPFA. See the list of WinPFA variables in Appendix A., noting which are mandatory and which optional. Many are text variables; others are

number, time, or currency variables and one is a date variable. Of these, only the text variables have corresponding codes and labels.

After selecting the optional variables you wish to include in your study (or limiting your study to only the mandatory variables), be sure that the values or labels associated with all the variables comply with WinPFA's specific formatting requirements. For these formatting requirements, see the following:

- **Text Variables:** Except for ' (apostrophe), "" (quotes), and * (asterisk), text variables may consist of values or labels that use any 30 characters. Example: allowable is the task value "-1 Service Stop"; disallowable is "Nurse's 'Aide*")

Note: Use of these 3 characters will not cause WinPFA's data validation procedure to generate an error message. Nonetheless, their use alters the syntax of SQL queries used in the generation of the reports and results in the fatal Run Time Error #3075, "Syntax Error."

The three Exceptions:

- "Staff ID": This variable may consist of up to four alphabetic or numeric characters; Example: WAB2
- "Client ID Number": This variable may use up to nine numeric characters; Example: 296409964
- "Comments": This variable may consist of up to 100 characters; Example: "Rockport WIC clinic session, voucher pickup only"

Note: WinPFA does not perform any mathematic calculations with any numbers used as values or labels for any text variable.

- **Number Variables:** With one exception, these variables may consist of whole numbers up to 9,999,999.
The Exception: "Fringe Benefits" (staff register) accepts decimal fractions.

Note: WinPFA runs calculations for reports with these values, unlike the numbers used for text variables.

- **Date Variable:** WinPFA's single date variable documents the date of the study using the format, MM/DD/YEAR (eight total characters); Example: 11/20/2002
- **Time Variables:** Documenting the hour, minute, and AM or PM of a range of clinic events, time variables use the format H:MM and am vs pm; Example: "7:15 am"

Note: All times must be within the same calendar day.

- **Currency Variables:** Documenting a range of financial data, maximum amounts vary from \$9.99 for “Reimbursable Mileage Rate”(Staff register) to \$10,000,000 for “Total Annual Cost Minus Staff Salary” (Clinic register).

How to Use Codes or Labels During Data Collection. Having staff document codes used in place of labels during the data collection phase may facilitate the process. It’s your choice whether you use single-character or multiple-character codes. But if temporarily replacing labels with codes is to work, you must be sure that staff have a clear understanding of the codes and that they all use the same coding scheme.

Remember, though, that for data analysis and presentation purposes, labels offer what codes cannot: a clear description for staff- or client-specific events or outcomes in the clinic. Therefore, while your study might allow staff to document with codes, your attention to developing meaningful labels will make for a more understandable presentation of study findings.

Using codes or labels during data collection depends on a number of considerations, including:

- Is staff more comfortable with codes or with labels?
- Do codes or labels offer greater likelihood of more legible documentation?
- Which will give greater ease of documentation?
- Does one assure greater completeness of documentation?
- Are there any related quality assurance issues?
- Are client privacy and confidentiality involved?

Planning Issues

After selecting any optional variables your study might incorporate and defining the corresponding codes and labels for all the variables, you, the study coordinator, and the PFA team will make decisions about your data collection procedures. Again, your discussion offers another opportunity for building a team.

You must decide:

- When and how will clients be entered on the sign-in sheet?
- Who will distribute Client Registers as clients arrive?
- How will the Client Registers be routed through the clinic?
- When will staff members receive their Staff Registers?
- Which staff members will determine the “Reason for Visit” and “Subclassification?”
- How will the study document staff noncontacts events?
- How will the study document staff-unavailable events?
- How will the study document client noncontacts events?
- How will the study document client-unavailable events?
- Will the study use any of the user-defined fields?
- How will the study collect the Client and Staff Registers?
- How will the study synchronize clocks and watches?

When and how will the clients be entered on the sign-in sheet?

To ensure that the data collection includes all relevant client information, you must determine when and how clients will enter the clinic. This information will guide the PFA team in assigning an ID number to clients and will also document their arrival time. Without the correct arrival time, if clients take a number when first entering the clinic and then wait to be called by the reception or registration staff, WinPFA's calculation of the client's waiting time before registration or reception will be inaccurate.

Who will distribute Client Registers as clients arrive?

The question of who will distribute the Client Registers (Register 3) at the start of the study is important in assuring the study intrudes minimally on normal clinic operations. Having reception or registration workers initiate Client Registers could burden these staff and cause delays. To avoid this, the study coordinator or another member of the PFA team should assist or perform this task.

Normal client flow should also be a consideration. If clients can come into the clinic through more than one entrance, multiple locations within the clinic will be needed to initiate their Client Registers. For example, a client, instructed to go directly to the lab for the next visit (a "lab-only" visit), returns to the clinic and goes directly to the lab. Unless you set up an alternate study registration area in or adjacent to the lab, such clients will not be registered. Establishing alternate PFA study registration sites will enable the team to enroll clients no matter their entry points into the clinic. Therefore, if clinics have more than one entrance, the team must allow for registration at each entrance.

How will the Client Registers be routed through the clinic?

Once you and the PFA team determine who will distribute the Client Registers, the management team needs to decide how to route these registers through the clinic. In most clinics, the simplest procedure is to attach the register to the client's clinic record so that the register moves from station to station with the client.

More Advanced PFA Design. If the record and client proceed through the clinic separately or if the record does not reach some stations, there are two options for documenting client service time:

- The PFA team decides that clients could reliably carry the register to all stations. Staff would then receive each client's register, document the service provided, and return the register to the client, who would proceed to the next station.
- If the team views this as too unreliable, it could place a log at each station where the record with attached Client Register is not predictably arriving. The log would require staff ID, client ID number, identification of the specific service ("Task") provided, and service start and end times. Each staff person at these stations would document the service (or services) provided and leave the log at the station. These data would later be edited into each client's register.

When will staff members receive their Staff Registers?

The Staff Registers (Register 2) should be distributed the morning of the study to avoid their being misplaced. However, distribution could be a problem in a clinic with a large staff or if employees are on flextime. In such situations, the study coordinator can distribute the registers through departmental supervisors or during the briefing (see page 32).

Which staff members will determine the “Reason for Visit” and “Subclassification?”

Two approaches are possible for determining a client’s “Reason for Visit.” The more traditional approach bases this on the services actually received. But, because clients often receive services other than those called for by the type of appointment, the “Reason for Visit” recorded at registration may be incorrect. It thus makes more sense for the clinician who sees the client to document the “Reason for Visit.” Or, better still, the study coordinator, assisted by clinic staff, might review clients’ medical records after all services are rendered, then document the “Reason for Visit” on the client register. An alternative view is the “Reason for Visit” should reflect the intended services and not those actually received. Advocates of this approach believe the PFA should document accurately those instances when clients are scheduled for services other than those they receive. Obviously, under this approach, the “Reason for Visit” (and possibly “Subclassification”) can be determined as the client’s visit begins, for example, at registration.

“Subclassification,” optional data for PFA studies, can be defined in so many ways that potentially any staff member could document it. For example, in the family planning clinic, “Subclassification” may further specify the client’s “Reason for Visit” (annual) by identifying the client’s preferred family planning method as “pill” or “diaphragm.” Because this method might be clear only when seeing the clinician, the study design could have the nurse, physician’s assistant, or nurse practitioner documenting the “Subclassification.”

Some family planning clinics need to know the number of male clients receiving service. “Subclassification” may be used in such clinics to identify the client’s gender. Obviously, all staff providing direct service would be able to document this variable, so the study design could have clerical staff responsible for documenting “Subclassification.”

WIC clinics often need to know how many members of the extended families accompany clients during a single day. “Subclassification” could be used to document how many family members accompany the WIC participant: “No family members,” “One family member,” “Two family members,” etc. For those WIC participants who receive nutritional counseling, the study design could have nutritionists document “Subclassification.” For participants who receive food vouchers and no other services, the staff members distributing the vouchers would document the “Subclassification.”

Note: Alternative means of subclassifying include using the User-Defined Codes and Labels (see page 30). The major advantage to using the “Subclassification” variable instead is that 3 of the 11 reports present analyzed data according to both “Reason for Visit” and “Subclassification” categories. By contrast, the User-Defined Codes and Labels generate data only in Report 11 with data presented as frequencies. This report presents only User-Defined Numeric data as sums and averages (arithmetic mean).

How will the study document staff non-contact events?

Staff may use the staff register’s supplementary pages to document the noncontact services. Using their own supplementary “NonContact” form, except for two additional items (see below), staff can follow the same procedure they use to document contact services. They note their own staff ID code and the “Noncontact” services (among those identified as “Tasks”) they are delivering along with the starting and ending time of the task. The additional data are:

- **The Client’s ID Number, if known**
- In-Session (Yes or No): To document, you will assess which of the following three possible client situations apply:
 - Clients whose ID numbers are known to the staff: ***In-Session = Yes (or checked)***
 - Clients whose ID numbers are not known: Staff often serve clients in the clinic without knowing their ID numbers. For example, staff who assemble sets of blank medical record forms for that day’s session (call this task “Assemble Medical Record”) cannot know which set end up with any particular client: ***In-Session = Yes (or checked)***.
 - Clients who have no ID number: Not in the clinic the day of the study, these are people, who, for example, phone the clinic to inquire about the clinic’s hours of service and are served by staff who answer the phones (call this task “Answers phone calls”): ***In-Session = No (or unchecked)***

Remember that like all optional data, Non-Contacts are not necessarily critical to all PFA studies. To assess how critical Non-Contacts might be, you ought to examine a number of issues including those described starting on page 19: Staff’s PFA Experience, The Data, and Costs. Two other key issues must be considered:

- The study’s objectives: If, for example, a major objective to gain a thorough understanding of how staff spend their workday, then these Non-Contact data are probably critical.
- Whether to document clients’ nonresponsiveness to staff’s attempts to verbally summon them for service. “Client Non-Responses” (a term used by many clinic staff) or “Calls” (PFA 2.0 terminology), if occurring frequently enough, can contribute to increased client waiting time and to bottlenecks before service stops. Documenting such clinic events as staff “Non-Contacts” may be a viable alternative to the more difficult attempt to document these events as client “Unavailable” periods (see below, page 29).

How will the study document staff-unavailable events?

Staff may use their staff registers' supplementary "Unavailable" pages to document interruptions (for example, lunch, breaks, personal phone calls) in their workday that preclude them from delivering either contact or non-contact services. Note that WinPFA does not count such documented interruptions toward calculation of the length of the staff's work day. Using their own supplementary "Unavailable" form, staff can document:

- The reason they are not available (taken from the study's agreed upon list of Unavailable descriptions applying to staff)
- The starting and ending time of the interruption.

You should emphasize to staff the importance of documenting only as they begin the unavailable period rather than documenting in advance of the event (particularly the case with "Lunch," an event most staff look forward to!).

How will the study document client noncontact events?

"Client Noncontacts" describe events the clinic requires that clients do in order to ensure the completeness of their clinic visit. A typical client noncontact event is completing a set of clinic forms. Failure to document these events could contribute to the study quantifying waiting times for the client's next service appearing longer than what the client truly experienced. The 20 minutes that clients take to complete the forms would be included in the waiting time occurring before the staff "complete intake" at the client's next scheduled clinic stop.

Whether the study design should include such events depends on a range of factors, beginning with those identified in the discussion above on inclusion of staff noncontact events. An additional consideration is that, unlike documenting staff noncontacts, documenting client noncontacts can be procedurally more complicated.

Note: Keep in mind that WinPFA does not permit client "Noncontact" events to run concurrently with any of this client's "Contact" events.

Staff may use the client register's supplementary noncontact pages to document the client noncontact events. The only bits of data required are the "Noncontact" events (identified among the "Tasks") a client performs at the direction of clinic staff, their starting time, and their ending time.

Traditional data collection done by staff becomes more complicated here if staff are too physically distant to easily observe the client proceeding to "perform" the "Noncontact." To illustrate, several client "Non-Contact" events are listed below plus a short description of why documentation may be difficult, with possible solutions suggested:

- "Completing Forms": Unless staff directly observe the client's completing such forms, documentation of starting and end times will not be 100% accurate. Instead, staff could document the starting time as the moment when they direct

the client to complete the forms and the end time as when the client returns the completed forms to the staff.

- “Providing a Urine Specimen”: Again, difficulty of direct observation is the barrier. Additionally, if the restroom is not located close to the clinic, the event will be documented as lasting longer than it actually did. Among the documentation options here is having the client glance at the clock before entering and after exiting the restroom, then reporting those times to the staff as they deliver their specimen.
- “Viewing a Video”: Unlike the two previous examples, where there are measurable outcomes to the “Noncontact,” client compliance could be the issue. Staff could establish the starting time of the event as when they turn on the VCR-TV; the video’s known duration allows calculation of the ending time.
- “Posttreatment Observation”: Client compliance again may be an issue. Indeed, a client’s waiting 10 minutes could be compromised by a range of events, including:
 - The client exiting the waiting area or departing the clinic to conduct personal business.
 - The client experiencing an allergic reaction to an injected antibiotic
 - A clinic staff person summoning the client to receive other services.

The solution could be an informal, yet controlled observation: Seat the client in an area of the clinic close to where staff provide services and near the client’s next stop. Staff can, then, periodically, monitor the client’s compliance and document the noncontact’s start and end times.

How will the study document client unavailable events?

Staff may use the client register’s supplementary pages to document the interruptions during the client’s visit when the client is not available to receive any services. ***Note that WinPFA does not count such documented interruptions toward calculation of the duration of the client’s clinic visit.*** Of the range of possible noncontact and “unavailable” events, the “Client Unavailable” event is probably the most difficult to document accurately, primarily because the client alone controls this event. By contrast, rigorous quality assurance provided by the PFA team helps assure accurate staff data. Similarly, PFA team or staff involvement with the client can assure faithful documentation of client noncontacts.

The clinic and staff, not attempting absolute control of clients’ every minute in the clinic, instead concern themselves with periods when clients are available. Of course, client unavailability, like staff unavailability, bears directly on when the staff can provide service. But, whether the study design should identify and record such events depends on a range of factors that include those noted above in the discussions on inclusion of staff noncontact and client noncontact events.

An additional factor is the elusive nature of these events as well as their possible relative infrequency. Clinic staff often become aware of a client’s unavailability only when

attempting to provide service: They summon the client for service, but she or he does not respond:

- Is the client temporarily in the restroom?
- Has the client departed the clinic not to return?
- Is the client taking children to the childhood immunization clinic next door?

Typically, during such events, only the clients know where they are and what they are doing. If such events are of low frequency in your facility, then you may reasonably decide to forego collecting “Client Unavailable” data.

But, if mandated by the study design, your challenge in documenting these events is to devise ways for staff to be aware of where their clients are and why they are unavailable. Effective strategies include the following:

- Ensure that the clinic orientation (possibly during a client’s first visit), emphasizes the major objective of providing efficient, rapid service with minimal waiting time and explains that clients can assist the clinic by informing staff if they will not be available to receive services during their visits.
- Post signs throughout the clinic that reinforce how clients can contribute to the clinic’s providing quality service.
- Use automated signs to signal clients in a confidential manner that they are next to be served. This can help lessen client’s periods of unavailability and emphasizes clinic efficiency.
- Train staff to thank clients and provide positive reinforcement to those who “report out” and “report in.”
- Understand that most clients’ busy schedules require occasional telephone contact with family and others. Ensuring the availability of public phones may limit clients straying from your facility.
- Allow for child care in the design of your physical plant; diaper-changing stations located off the main waiting area allow clients to meet important family responsibilities.

Will the study use any of the user-defined fields?

Staff may use the four user-defined fields of the client register to document additional information on clients, beyond what typical studies can document using “Subclassification.” These four fields provide a feature unique among the WinPFA variables because they allow users to tailor these them and their captions to make data collection more specific to the clinic’s needs. Note, however, that due to the widely variable ways in which users may use these fields, WinPFA’s data analysis for each field’s data is restricted to:

- Frequencies for the first three user-defined variables
- Calculated sums and averages (both mean and mode) for the single User-Defined Numeric field.

Before you tailor them, these fields bear these captions:

- User Defined Alpha 1
- User Defined Alpha 2

- User Defined Alpha/Numeric
- User Defined Numeric.

The first three document only text-type data using up to 30 permissible keyboard characters, including numbers. For example, numbers are used as text in the ICD (The International Statistical Classification of Diseases and Related Health Problems) system, in which, “305.1” refers to “Tobacco Dependency.” On the other hand, “User Defined Numeric” uniquely requires numbers. This restriction allows WinPFA to analyze these data arithmetically (that is, running sums and averages).

Sample user-defined fields, found in “Labels Illustrating Use of User-Defined Fields” which WinPFA provides, use these captions:

- “Client’s Age is in this Range”
- “Is Partner in Clinic?”
- “ICD 9 or 10”
- “Lykert Rating on Satisfaction”

The corresponding possible selections (that is, “values”) for “Client’s Age is in this Range” are:

- “10-14 years”
- “15-19 years”
- “20-24 years”
- “25-29 years”
- “> 29 years.”

How will the study collect the Client and Staff Registers?

Normally, the Client Register stays with the client’s clinic record until removed by the study team at the end of each client’s visit. Similarly, staff members usually keep their own Staff Registers until turning them in to the PFA team at the end of the clinic or at the end of their shift. Nonetheless, registers can be misplaced. To avoid this, the study coordinator should collect Client Registers during the clinic session. This will provide a final opportunity to visually edit the data and to correct illegible, incorrect, or missing information while contacts can still be easily remembered by clinic staff.

How will the study synchronize clocks and watches?

Watches must be synchronized to reduce time-related inaccuracies in the study data. Before the day of the study, identify as “master clock” the clock most clearly visible to the staff members and the one they usually refer to during their workday. Then, on the day of the study as staff members receive their Personnel Registers, have them reset their watches by this master clock. Admittedly, resetting some digital timepieces may be difficult. But with non-synchronized time will likely result in WinPFA documenting the order of events differently than how they occurred. Working with staff to overcome this is worth your while.

Two alternative or complementary strategies to the use of personal timepieces are for staff who deliver services within view of their LAN-connected to use the LAN clock as

the master clock and for staff members whose telephones have a digital time readout to use this as their master clock.

Consider two other aspects of synchronization:

- First, be sure to instruct staff members to glance at their synchronized timepieces (whether watch, computer monitor, or telephone) before they document this time on either the Client Register or their own Staff Register
- Second, because digital timepieces allow staff members to identify times most efficiently and accurately, you might wish not to use other timepieces.

Briefing the Staff

Briefing the staff is actually a 2-step process. The first briefing introduces PFA and the “who, what, where, when, and why” of the study. In your second briefing, ideally held within 24 hours of the study, the staff learns how studies generally run and about the specific of your upcoming study. At this briefing, we recommend that the study coordinator distribute sample registers to illustrate the staff’s responsibilities for documentation.

As mentioned earlier, staff perception of PFA will have a profound effect on its potential to catalyze change. The first briefing is often the staff’s first introduction to PFA. *Consequently, **emphasizing staff’s attendance would be wise strategy.*** The study coordinator should be prepared to answer detailed questions on PFA. The briefing should emphasize the study will be used to improve clinic efficiency and not to evaluate staff. Not only does the study coordinator need to demonstrate knowledge and competency in the use of PFA, he or she may also need to gain the staff’s trust. ***Always remember that one of the benefits of PFA is that its potential for giving staff a sense of empowerment and ownership.***

The second briefing is often the staff’s first opportunity to learn about the study design. Because staff know how the clinic functions on a daily basis, this briefing is your opportunity to learn whether staff see the design as feasible. ***Our advice: Solicit their critiques of the design, then listen to and heed their suggestions.*** Remember you want a successful study and you want staff buy-in. The study coordinator should be respectful of personnel concerns voiced by the staff but should not be pulled into departmental disputes. Doing so would likely jeopardize the coordinator’s neutral stance and the success of the study. The coordinator should acknowledge concerns but should not attempt to resolve them during the briefing. The analysis session, instead, is the appropriate forum for identifying problems and developing solutions.

Registers

The PFA study uses six registers to collect information about a clinic session. Five of these require preparation before the PFA study begins. If members of the PFA team prepare these registers, they will reinforce their understanding of how data collection works. Additionally, they can begin to focus on the orientation of clinic staff. This will likely begin with a review of the registers and how to complete them. Among other details, the team will explain that the registers' heavily outlined boxes in bold type require an alphabetic entry and the thinly outlined boxes require numeric entries. They will also prompt staff to make all entries in pencil and to document accurately and legibly.

The registers are discussed here in the order in which they are used in the PFA study: WinPFA Codes and Labels (Registers 6A-J), Staff Worksheet (Register 5), Staff Register (Register 2), Client Sign-In Sheet (Register 4), Client Register (Register 3), and Clinic Register (Register 1). Please see Appendix B for a complete set of registers in English. For a downloadable version, visit CDC's PFA webpage (http://www.cdc.gov/reproductivehealth/Products&Pubs/PFA_support/index.htm),

WinPFA requires you to document a number of study variables for each register by entering into each text field an item from a list of possible labels associated with each variable. During data collection, you may enter either a label or, in place of the label, a code. Decisions you will make about data collection include:

- Will the study document any optional variables?
- What are the most meaningful descriptions for each set of labels (or which codes will be easiest for your staff to use)?

While you may optionally use codes *during data collection*, WinPFA requires labels for data entry. To gain a sense of the labels' role during and beyond data entry, first review selected WinPFA reports generated from the "10-17xxModifiedDataSet1.pfa" Next consider how you would like to see your study data presented in the reports. Then select one of WinPFA's sample Codes and Labels sets, choosing the one that most closely describes your clinic. Finally, edit the descriptions in this Labels set to meet the needs of your clinic's study design.

For more information about the graph and analyzed output, see *Interpretation and Use of the WinPFA Reports* (available in late 2006). This CDC instructional guide will orient users to the formulas used for the (statistical) reports, the significance of these data, and how clinics can apply the data from the reports.

Code and Labels Lists (Register 6)

The extensive "Code and Labels Lists" provide labels for all text-type variables (that is, those consisting of text—a string of characters without mathematic value) and, at your option, codes to be used instead of the labels. Beginning with the Designation variable

and running through the “User-Defined Fields,” the lengthy lists of labels or codes allow you to document all staff- and client-related events in the clinic session.

Note: WinPFA also uses the variable “Pay Period” for computing personnel costs; for example, salary per year=Year. As defaults, you cannot change them.

Staff, consequently, need to have in their possession lists of all the variables they will document. Consider the following distribution scheme for these lists:


- All staff will need, at a minimum, the “Task” list.
- Staff uniquely documenting other required variables will need the “Reason for Visit” list.
- Depending on the study design, all staff might also need the “Unavailable” list (to document their break time).
- Staff uniquely documenting optional variables according to the study design could need the “Subclassification” and the four “User-Defined” lists.

More Advanced PFA Study Design For variables with especially long lists of code-labels combinations (for example, the “Tasks”), we recommend you individualize the list according to each staff person’s range of clinic responsibilities with a shortened variant of the original list consisting only of those Labels (or Codes) the individual is likely to need during the course of the study. Often, this reflects job function. For example, the long 32-item task list shown in Figure 3 for a study in a sexually transmitted disease clinic presents a range of tasks, which include the only five tasks that disease intervention specialists (also known as “DIS,” “Epis,” or “Field Investigators”) are likely to perform. Providing each DIS an individualized list limited to the following tasks will allow them to glance at it as they begin to document the services they deliver:

- Client Interview
- Client Counseling
- Partner Interview
- Client Referral, and
- Assist Client Registration

Figure 3, a sample Task List consists of two columns: first, a set of codes (corresponding to the descriptions from the second column), which staff optionally can use to document more rapidly the services they deliver using the data collection form shown in Figure 7; second, descriptions for the full range of services that study organizers and planners understand staff members might provide during a clinic session.

Figure 3 Sample Task List

		<h2>Patient Flow Analysis for Windows</h2>	
*Data Set Name:		June 2003 Study at Centro Piloto	
Task Labels		Task Labels	
Code**	Label ***	Code**	Label ***
DemoA	Take Demo Info	BimanX	Bimanual Exam
Register	Register Client	NodesY	Check Inguinal Nodes
Record	Assemble Record	Tx-Orals	Prescribe Oral Meds
Video	Orient to Video	Tx-Shot	Prescribe Injectable
Numbers	Set Out Client Numbers	Tx-O	Prescribe Other
Video On	Turn on Video	Ix	Client Interview
Direct	Direct to Class	Counsel	Client Counseling
D-E	Do Data Entry	Ix-Pard	Partner Interview
Educate	Provide Education	Ref	Client Referral
Post	Post Test Data	Asst-Reg	Assist Client Registration
Phone	Answer Phone	Monitor	Monitor Injection
BP	BP	Blood	Draw Blood
Prep	Prep Patient	H-Couns	HIV Counseling
STD HX	Take STD History	Wet-Prep	Wet-Prep Test
Med HX	Take Med History	GSS	Gram-Stain Smear
PE	PE	DKF-T	Darkfield Test

*Required; ** optional; *** mandatory with a 30-Character Maximum (*but no apostrophes, no quotes, no asterisks*)

Descriptions of Codes and Labels

Although WinPFA allows an unlimited number of descriptions, it allows no codes. However, for data collection purposes, you may opt to use codes in place of the descriptive labels. Later, before doing data entry, you will translate each code back into its corresponding descriptive label.

Note: WinPFA allots 30 characters (including spaces) for each Description, with the restriction that users may not use ‘ (apostrophe), “ ” (quotes), or * (asterisk). The use of these characters will result in WinPFA being unable to analyze the data correctly or possibly result in WinPFA terminating operation.

Designation

The “Designation” label traditionally describes the range of staff job titles or educational qualifications. Because “Designation” is optional in PFA studies, study designs should anticipate whether its use will provide any useful data in the reports (only reports 3, 4, and 9 use this label).

Task/Event

“Task” labels describe the range of tasks the staff collectively may perform during the studied clinic session. They cover both “Contact,” “Noncontact” and “Unavailable” events. A list of commonly used tasks appears in Appendix C, Study Coordinator’s Checklist.

Staff members who deliver multiple services during a single service contact (for example, taking a medical history, providing education, and giving treatment) might need to document each individual task, depending on the study design. To do this, staff must note their ID, the task (using either the description or the corresponding Code), and the task’s “Start Time” and “End Time”.

More Advanced PFA Study Design For users who elect to use descriptive labels during data collection, the following tip might benefit both data collection and data entry: After you have established your lists of contact and non-contact tasks and unavailable descriptions and after data collection, you will document these lists in the Task/Event tab. WinPFA alphabetizes all items documented under this tab, resulting in a mix of contacts, noncontacts, and unavailable descriptions. To aid data entry, you might consider allocating, for example, A through H for contact tasks, I through N for noncontacts, and O through Z for unavailables. But, note, this approach could inadvertently force you to accept some awkwardly idiosyncratic descriptions. For example, how would you replace “Registration,” a possible contact description, with a word or phrase that begins with A through H?

Here's a better way: Append to each category of task descriptions the same ***numeric*** prefix. WinPFA orders descriptions that begin with numbers before those starting with alphabetic characters. For example, if you assign the prefix "1" to all contacts, "2" to all staff noncontacts, "3" to all client noncontacts, "4" to all staff unavailables, and "5" to all client unavailables, WinPFA places your group of contacts before the non-contacts (grouped staff first, then client), followed by the unavailables. This approach allows for more accurate data entry when first establishing the Codes and Labels, and also speeds data entry in the Staff and Client windows by reducing you're your extended search through Task/Events' drop-down list of specific descriptions.

This approach aids data collection as well. Imagine that you are giving the staff your lists of contacts, noncontacts, and unavailables descriptions. Anticipating their reaction to these dismayingly long lists, you wonder how to make things simpler so that staff can understand when to use each one. Here's what to do:

- Print at the very top of the contact list the title, "#1: Use These When You Are Delivering Services"
- Use a corresponding title for your other lists
- Emphasize the numbers during the staff's PFA orientation: "Most of the time, you'll be using your #1 list. When you are providing a service, but not face-to-face with the client, use your #2..."

The use of numbers as prefixes offers an additional advantage. Because these numbers differentiate the types of events, you may use the same descriptive label in more than one list. If your staff call a service by a particular word or phrase, regardless of whether it's delivered directly or behind the scenes, the number prefix allows their continued normal usage.

Unavailable

Unavailable periods are when staff and clients cannot deliver or receive services. For example, staff might be taking a break, and clients, making personal phone calls.

Note: Unavailable periods are not included when calculating the duration of the staff's workday or the length of the client's visit.

Reason for Visit

Before defining the client's Reason for Visit (RFV) using a 30-character word or phrase, you must assume one of two perspectives: First, a retrospective view; that is, according to the collection of services the client actually received. These may not be the same ones as implied by the RFV identified at the beginning of the visit or when the client made their appointment. Second, a prospective view; that is, using the appointment information or the reason the client cited for making the visit. This might correlate poorly with the services the client actually receives.

With both approaches, the labels must be specific to the clinic studied and clearly understandable. You need to exercise caution when determining how many reasons for visit the study will document. Too many in a single study can cause the reports to be less meaningful statistically.

Reports 1, 2, 6, and 7 present the data by Reason for Visit. Review these reports during the study design stage in order to understand how WinPFA makes use of Reasons for Visit in the analysis.

Subclassification

Using “Subclassification” (Subclass) is optional, but it gives you the opportunity to further specify or refine the visit type, the client, or, possibly, a specific aspect of the visit. Examples of Subclass are age, sex, and trimester of pregnancy. During the study design review **Reports 2, 6, and 7**, which present data by Subclass to understand how WinPFA will use Subclass in the analysis.

User-Defined Alpha 1 (UDA1)

Documented in the Client register, the optional “User-Defined Alphabetic 1” variable allows you to define an additional variable, name it with a specific caption, and assemble a corresponding list of labels. For example, if this variable’s caption was “What is the Client’s age?” a possible UDA1 descriptive label might be “19-25 years range.” Note that the 30 characters allotted for the descriptions may be any keyboard character except the three restricted ones noted above under Codes and Descriptions. Use of any UDA requires modification of the UDA’s caption in your Client data collection registers and also in WinPFA. This means you edit the UDF Captions in the Codes, Labels, and Captions window.

Only Report 11 presents UDA1 data. Review this report while designing your study to understand how WinPFA presents this variable in the analysis.

User-Defined Alpha 2 (UDA2)

UDA2 operates exactly like UDA1 (see above) and provides a second optional client variable. For example, if this variable’s caption was “Is Sex Partner in Clinic?” a possible UDA2 descriptive label might be “Yes.” Maximum size of these labels is 30 characters. Your modification of this caption will appear in the Client register.

Only Report 11 presents UDA2 data. Review this report while designing your study to understand how WinPFA presents this variable in the analysis.

User-Defined Alpha-Numeric (UDAN)

UDAN operates exactly like UDA1 and UDA2, allowing a third optional client variable. For example, if this variable’s caption was “What is the Client’s ICD-10?” a possible

UDAN descriptive label might be “301.5” Maximum size of these labels is 30 characters. Your modification of this caption will appear in the Client Register.

Only Report 11 presents UDAN data. Review this report while designing your study to understand how WinPFA presents this variable in the analysis.

User-Defined Numeric

Of the four user-defined variables, only the UD Numeric Value documents data that are true numbers (that is, WinPFA can add, subtract, multiply, and divide them). Numbers documented in this field are used by WinPFA to make arithmetic and statistical calculations. Because this field accepts only numbers, you do not need to define a drop-down list of descriptive labels as with the other UD variables. Acceptable numbers range from -1,000,000 through 1,000,000. For example, if this variable’s caption was “Client Satisfaction Rating?” the label, “1” (on a Lykert scale of client satisfaction) is a possible response.

Only Report 11 presents UD Numeric data. Review this report while designing your study to understand how WinPFA presents this variable in the analysis.

UDF Captions

This feature, not a true study variable, allows you to tailor a caption for each of the four user-defined variables. The captions may consist of any 30 characters.

Because these are not true variables (which would encompass a definable range of values), the captions are **used only as column headings in Report 11.**

Clinic Source of Funds

This variable allows you to characterize the source of funding for individual staff. Your descriptive labels may consist of any 30 characters. Examples: “100% Fed”; “50 Fed, 50 State”; “Local \$\$ Only”; “100% Foundation Grant”; and “Mixed Fed-State-Local.”

You will find these data are reported **only in Summary Report G.**

Staff Worksheet (Register 5)

This register is used to organize the data needed to complete individual Staff Registers (Register 2).

Staff ID

For the four permissible characters making up the Staff ID, you may use the same characters you use for the descriptions of the Labels: keyboard characters (for example, *, @, !, ?), characters from the extended ASCII set (for example, ¥, ©, ¶), and others. Note, however, that all alphabetic characters, regardless of how they are keyed, will be upper case. We recommend you take advantage of the likelihood that most staff are used to initialing paperwork by using their initials as the first three of the four permissible characters; the fourth character you may choose to restrict, using it only to differentiate among staff with like initials. WinPFA allows a virtually unlimited number of Staff IDs.

Your study coordinator should list all personnel who are assigned to work in the clinic on the day of the PFA study. Enter the name, staff ID, official designation (professional status), and the primary clinic task for each staff member in the spaces provided.

The following information is required to calculate personnel cost: the budget or source of funds from which the employee is paid, the employee's gross salary, the number of days of paid holiday, vacation, and sick leave the employee earns in a year, the percentage used to calculate fringe benefits (usually available from an administrator), the number of hours in the employee's normal workweek, and any paid expenses. Volunteers should be assigned a salary equal to that of a paid employee in the same position.

Official Designation

This variable describes the professional status of each person working in the clinic. Professional status reflects how staff members have been trained, not which task they perform. For example, a clinic manager who registers clients in the morning would have an Official Designation of "manager" and "registration" for the Primary Clinic Task. Unlike Task Assigned, Official Designation appears only in Reports 3, 4, and 9. Here it may differentiate types of staff who perform the same task; for example, both nurses and physicians might be task-coded as clinicians.

As with all Labels, the 30 permissible characters for each Official Designation label may be the same you use for the descriptions of the Labels: keyboard characters (for example, *, @, !, ?), characters from the extended ASCII set (for example, ¥, ©, ¶), and others. Official Designation appears in Reports 3, 4, and 6.

Primary Clinic Task

Document here the task which the staff member will spend the most time delivering during the course of the clinic session. See the Codes and Labels Task List for this information.

The remaining data, identified by the column headers Source of Funds through Hours in Workweek, and Paid Expenses are required so that WinPFA can calculate personnel costs. Use the Labels you have established in your Codes and Labels sheets to complete the text-type variables here. Also enter the staff member's gross salary per pay period (for example, year, month); the number of days of paid sick, holiday, and vacation leave; fringe benefits as a percentage of gross salary, not including leave; the number of hours in the employee's workweek, and the amount of paid expenses covering this workday. Be sure to assign a salary for volunteers equal to that of a paid staff member in the same position.

Figure 4 illustrates use of the variables "Clinic Source of Funds" through "Primary Clinic Task."

Figure 4, a sample Staff Worksheet provides study organizers and planners a single form for collecting data specific to individual staff members. Each staff member's row provides space for documenting: their name, their assigned ID, their official designation, their primary task, the source of funds for their position, their gross salary, the pay period (to which the documented gross salary corresponds), total sick and vacation days earned, hours worked per week, aggregate paid expenses, and a "Yes" or "No," indicating whether to apply the WinPFA algorithm for distributing costs. Please note that the landscape shape of the worksheet documented with sample data and the desire to make the worksheet easily viewable requires its vertical placement here.



Patient Flow Analysis

Staff Worksheet-5

*Data Set Name: June 2003 Study at Centro Pioto

Comments: None

Staff		Official Designation	Primary Clinic Task	Source Of Funds	Gross Salary	Pay Period	Day of Paid Sick & Annual Plus Holidays	Fringe Benefits	Hours Normal Work Week	Paid Expenses	Distribute Cost? (✓ = Yes)
Name	ID										
Veronica K	VK	Health Educator	HIV Counsel	State	2000 Bs	Month	40	29.9%	38	0	✓
Vickie P	VP	Clerk	HIV Counsel	City	2000 Bs	Month	40	29.9%	38	0	✓
Alberto S	ASCI	Ob-Gyn	Consult	USAID	2000 Bs	Month	40	29.9%	38	0	✓

Figure 4 Sample Staff Worksheet

Staff Register (Register 2)

All staff members who are expected to have face-to-face contact with clients during the clinic session must have their own Staff Register. Additionally, you may elect to have a supply of registers ready for those not anticipated to have any client contact. This allows WinPFA to include their personnel costs in the clinic's cost calculations. Supplementary pages for this register allow staff to document their non-contact services and their unavailable periods. Figure 5 shows the Staff Register for the clinic receptionist.

Figure 5, a sample Staff Register, kept by staff members during the study to remind them of their personal identification code (used with the data collection form shown in Figure 7), is the form where these staff document the beginning and end of their workday; prior to data entry, study organizers copy remuneration and compensation data from the form shown in Figure 4 to this form.

Figure 5 Sample Staff Register



Patient Flow Analysis for Windows

Staff Register – 2
Page One

*Data Set Name: June 2003 Study at Centro Piloto

MEMBER (Tab #1)

*Staff ID (text; ≤4 characters):

Official Designation (text; ≤30 characters):

*Primary Clinic Task (text; ≤30 characters):

*Time You Are First Available to Serve Clients:

*Time You Are No Longer Available to Serve Clients:

<u>VP</u>
<u>Clerk</u>
<u>Reception</u>
<u>8:00 AM</u>
<u>4:00 PM</u>

[Note: UnAvailable periods must fall Between Time You Are First... and Time You Are No Longer...]

COMPENSATION: Travel Status (Tab #2)

Miles Traveled (≤ "300" mi):

Mileage Rate (≤ "\$9.99"/mi):

Time in Travel Status (minutes) (≤ "300" min):

<u>0</u>
<u>0</u>
<u>0</u>

COMPENSATION: Salary (Tab #2)

Source of Funds for Member's Salary (text; ≤30 characters):

Gross Salary (≤ "\$2,000,000") :

Days of Paid Sick & Annual Earned Plus Holidays (≤ "75" days):

Fringe Benefits (≤ "100%"):

Hours in a Normal Work Week (≤ "100" hours):

Paid Expenses (≤ "\$500"):

Distribute Cost:

<u>city</u>	
<u>\$2000</u>	<u>Month</u> (Per) <u>Pay Period</u>
<u>40</u>	
<u>29.9%</u>	
<u>38</u>	
<u>0</u>	
<input checked="" type="checkbox"/>	✓=Yes, distribute costs

The Study Coordinator enters each staff member's Staff ID and distributes the registers during orientation or, preferably, as the staff arrive for work on the day of the study. Distribution should take place as close to the study time as possible to reduce the chances of the registers being misplaced. Because staff members do not need to know their Official Designation and Primary Clinic Task to fulfill their study responsibilities, the study coordinator may enter these data after the study.

Note: *Many PFA teams elect to include salary and other data sometimes considered to be very personal on Staff Registers only after completing the study.*

Time You Are Ready to Serve Clients

Your instructions to staff on documenting this variable depend on your study design:

- Design Type 1: Studies documenting any staff non-contacts occurring *before* the same staff deliver the usual contact services require that staff enter the time they begin to deliver the non-contact service as the *"time...ready to serve clients."*
- Design Type 2: Studies not documenting any staff non-contacts **before** the same staff deliver the usual contact services require that staff members enter the time they become available to deliver that first contact service or the time they are scheduled to see their first client as the *"time...ready to serve clients."*

Note that staff may understand that their availability depends on whether they have other clinic duties. But, if these duties—gathering supplies or information, preparing their work area, documenting a prior client's visit, performing administrative duties, etc.—are documentable noncontacts according to the study design, you should instruct staff per Design Type 1.

Time You Are No Longer Available to Serve Clients

Despite being still available to deliver either contact or non-contact services, staff members should understand the time when clients no longer require the staff's services to be the *"time...no longer available..."* Note that staff may associate this point in their work day with a variety of clinic events; for example, there are no more clients, other staff members are already delivering all the required client services. there are no more clients in the waiting room. If, however, staff have other responsibilities to fulfill and document as staff noncontact services, their *"time...no longer available..."* is when they complete all such responsibilities.

Note: *This time is not necessarily the end of the workday nor the scheduled end of the clinic*

Break Times

Unlike PFA 2.0, WinPFA does not view "break times" as unique clinic events. Instead, "break times" are one of the "staff unavailable" events. To document, follow the tutorial on page 27.

If in Travel Status in Order to Work in this Clinic

If staff members travel to work from another workplace, receiving reimbursement for their travel expenses, WinPFA will calculate the associated travel costs. Staff members themselves or the clinic's administrator may provide the necessary data for such staff members' Personnel Registers.

Source of Funds for Your Salary

In highly integrated clinics, a number of different sources might be used to fund staff positions. WinPFA acknowledges this reality, allowing personnel costs to be distributed according to their funding source. Clinic staff rarely know this information; instead, they rely on the clinic administrator, who usually has more ready access to such data.

Gross Salary, Etc. (Days of Paid Sick [Leave] & Annual Earned [Leave] Plus Holidays, Fringe Benefits, and Hours in a Normal Work Week, Paid Expenses

WinPFA offers two levels of cost calculations. One, duplicating what PFA 2.0 allowed, is based solely on most costs related to personnel. The second includes both personnel costs and non-personnel-related overhead costs. On the basis of these data, WinPFA calculates a range of related costs, including the cost for each visit type. Please keep the following points in mind when entering these data: "Gross Salary" is a dollar amount per unit of time (see Appendix D for the 10 permissible time units); "Days of Paid Sick [Leave] & Annual Earned [Leave] plus Holidays" is the total of these two items; Fringe Benefits, a percentage of Gross Salary, cannot include Days of Paid Sick & Annual Earned plus Holidays if these data are already entered in the previous field. Using "Hours in a Normal Workweek," WinPFA calculates personnel costs per minute of service time available when Gross Salary is defined for time periods equal to or greater than 1 week (for example, per week, per month). This figure may vary for each staff member. Again, the clinic administrator usually has the most ready access to such data.

Distribute Costs

Documenting this variable as "Yes" for any staff member signals WinPFA to distribute costs for the portion of that person's day when she or he is not providing service. (For additional information about distributed costs, see Appendix E.) Although you do not need to complete this variable during the data collection phase of your study, you do need to take Distributed Costs into account while designing the study. If documenting "Yes," then you will need to complete this before the data entry phase.

Staff Members Who Change Tasks

PFA users may easily document staff members' changing from one task to another. In the "task" field enter the descriptive label corresponding to the service being delivered. Note that the range of possible "tasks" will likely vary according to the breadth of the staff's

usual job responsibilities. It, could therefore be useful to give each staff member a short list of the descriptive labels for the “tasks” that they might provide.

Client Sign-In Sheet (Register 4)

This register identifies clients, optionally, by name along with the client’s time of arrival and appointment time, and assigns to each a PFA study number. Figure 6 presents a sample Client Sign-In Sheet with five clients entered.

Figure 6, a sample Client Sign-in Sheet, is the form for clients to annotate their arrival and appointment times; for study organizers, this form, additionally, assigns each client his or her own unique WinPFA study identification number.

Figure 6 Sample Client Register



Patient Flow Analysis for Windows

Client Sign-in
Sheet- 4
Page No. 1

All Clients: Please print your name on the first line and enter the time that you arrived and the time of your appointment.

Clinic Location: Centro Piloto

Date: 6/2/2003

Time: 8:30

Patient Number	Name	Time of Arrival	Appointment Time
1	<i>Louise Rowan</i>	8:35	8:30
2	<i>Amy Morris</i>	8:30	8:30
3	<i>Ralph Suiter</i>	8:45	8:45
4	<i>Margie Gillespie</i>	8:45	8:45
5	<i>Mark Pritchard</i>	9:00	9:00
6			
7			
8			
9			
0			
1			
2			
3			
4			
5			
6			
7			
8			
9			
0			

Place the sign-in sheet as near as possible to where the client flow begins. Unless they sign in routinely, clients might not clearly understand the study's requirement for them to sign into the clinic. Staff not assigned clinic duties may assist clients with this procedure.

Staff not assigned clinic duties or a member of the PFA team can help by directing the clients as they explain briefly the purpose of the study. Because this initial point in the client contact is often the reception area—one of the busiest locations in the clinic—it could be useful for the study coordinator to remain in the reception area during this early stage to manage this aspect. As clients enter the clinic reception area, they sign in and document their arrival and appointment times. Note that their appointment time might be different from that shown on the records. For clients without appointments, the PFA team will enter zeroes before beginning data entry.

Client Register (Register 3)

Client registers identify each client’s service contacts, including which staff person delivered the service and its length. Supplementary pages for this register allow for documenting client’s noncontacts and the client’s unavailable periods. is an example of a completed client register with several contacts.

Figure 7, a sample Client Register, is the form where staff document client visit data, including arrival and appointment times, reason for clinic visit, and contact service event information (additional “continuation” forms allow documentation of non-contacts and unavailables).

Figure 7 Sample Client Register



Patient Flow Analysis for Windows

Client Register- 3

***Data Set Name: June 2003 Study at Centro Piloto**

***Client ID Number (≤999,999,999)**

***Reason for Visit (text; ≤30 characters):**

Subclassification (text; ≤30 characters):

Time of Appointment:

***Time of Arrival:**

Is Partner in Clinic? (text; ≤30 characters):

Is Client Tobacco Dependent? (text; ≤30 characters):

Not Used in this Study (text; ≤30 characters):

Not Used in this Study (text; ≤30 characters):

1
Regular Check-Up
Clerk
8:00 AM
7:44 AM

Client Service Contacts (Tab #2)

#	Staff ID	Task	Start	End
1	VP	Register Client	<u>8:00 AM</u>	<u>8:00 AM</u>
2	VP	Orient to Video	<u>8:00 AM</u>	<u>8:00 AM</u>
3	VK	Provide Education	<u>8:00 AM</u>	<u>8:00 AM</u>
4	VK	Take Med History	<u>8:00 AM</u>	<u>8:00 AM</u>
5	ASC1	Consult	<u>8:00 AM</u>	<u>8:00 AM</u>
6	VP	Make Reappointment	<u>8:00 AM</u>	<u>8:00 AM</u>
7				
8				
9				
10				
11				
12				
13				
14				
15				

***Required Data**

This register follows the client's movement or flow through the clinic visit. It must reach each service station no later than the client to ensure that staff have it in hand to accurately document the contact time. The Client Register is often attached to the client's chart or, alternatively, carried by the client from station to station.

In the traditional PFA design, the clinic receptionist initiates the register at reception, ensuring that the client number corresponds to the client number on the Client Sign-In Sheet. The receptionist then enters the client's arrival time and, from the clinic records, the appointment time. The Reason for Visit and Subclassification can be documented here or after the visit is completed. Depending on the receptionist's workload (or other staff assigned the responsibility of documenting data on the Client Register), PFA team members may need to provide assistance.

Each staff member who serves the client enters his or her ID in the appropriate box, calls the client, and enters the descriptive label for the task they are delivering along with the start time of the contact. When the contact is completed, each staff member enters the end time.

Client ID Number

Assign each client a unique identifier. With WinPFA allowing nine numeric characters for the ID, you might consider using other unique multicharacter client identifiers already used by the clinic. To avoid duplicating IDs, number these registers before the study begins.

Reason for Visit

Because WinPFA requires this variable, your study design needs to answer two data collection issues:

- Which staff members will determine the clients' Reason for Visit?
- Will you define the Reason for Visit retrospectively or prospectively?

Subclassification

If you opt in your study designs to include this variable, then the only data collection issue is: Which staff members will determine the clients' "Subclassification?" For a discussion of this issue, see "*Which staff members will determine the Reasons for Visit and Subclassification?*" on page 25.

Time of Appointment

Because WinPFA requires this variable, you must decide which staff will document the clients' "Time of Appointment." Clinics usually maintain this information in an accessible database. The most logical candidates for documenting this are staff with ready access to the database whose study responsibilities are moderate and whose work stations are less likely to become bottlenecked.

Time of Arrival

For this required variable, you must decide two issues:

- Who will document the clients' "Time of Arrival?"
- How will you define "Time of Arrival?"

Usually, once the second question is answered, the first becomes clear. At most clinics where clients quickly check in after entering the facility, studies document the "Time of Arrival" as the time the reception contact begins.

But, at other clinics, there are barriers to check-in. They can include poor signage within the clinic, language barriers, and client confusion about how to enter the facility. If your observations suggest that such barriers exist, this impeded client flow suggests an alternative definition of "Time of Arrival." The location where most clients begin to encounter barriers may open a new perspective on clinic operations and the point for clients' "Time of Arrival."

So, who documents "Time of Arrival?" In the first scenario, where the "Time of Arrival" coincides with the first service contact, whoever documents "Reception" could easily document the client's "Time of Arrival." In the second scenario, depending on the physical distance between identifiable barriers to the beginning of the client flow and the location of the first service contact, PFA team members will probably need to assist clinic service staff with this data collection responsibility.

Time of Departure

Include this optional variable in your study design only if you and the PFA team decide that a precise definition of the client's departure time would aid in evaluating the client flow. Otherwise, WinPFA automatically calculates "Time of Departure" to be 1 minute after the final service contact.

User-Defined Alpha 1, User-Defined Alpha 2, User-Defined Alpha-Numeric, User-Defined Numeric

Include these optional variables in your study design if you believe they would provide useful additional client-related data. For a discussion of these variables, see "*Will the study use any of the user-defined fields?*" on page 30.

About Client Non-Response (“CALL” Situations). On occasion, clients do not respond when summoned by staff. Your study design should anticipate such events by prescribing whether staff will document client non-response as a staff non-contact or as a client unavailable event. Documenting non-response as a staff non-contact allows a more precise characterization of the staff’s workday and the clinic’s desire to serve the client.

On the other hand, documenting this event as a client unavailable period will be useful only if you are able later to quiz clients to learn the reason for their unavailability. Recognizing that client nonresponse may signal that the client has departed the clinic, possibly not to return, an investment of additional staff time to pursuit of the reason for the unavailability may not provide data useful to evaluating the clinic system.

Nonetheless, if staff determine that a client is no longer available to receive services for the duration of the clinic session, then their register should be returned to the study coordinator with the terse notation: “Left clinic.”

Note on Timepieces. If staff members are using analog clocks or watches (that is, the kind with hands for the hour, minute, and second), they must record all times to the nearest minute. Using digital timepieces allows staff members to capture times more precisely with less effort. For contacts shorter than 1 minute, staff members may record end times that are the same as the start time. All times must correspond to those of the standard U.S. 12-hour clock. WinPFA will not accept 24-hour military or international time.

Clients Who Are Seen by More Than One Staff Member at a Time

WinPFA allows studies to document clients receiving concurrent services delivered by two or more staff persons. This includes two or more contacts occurring at the same service station as well as a single contact running concurrently with one or more staff noncontacts being provided to the client. Each staff person simply records his or her own ID, the service provided, and the start and end time on the next available line of the Client Register or the Staff Non-Contact Sheet.

Staff Members Who See More than One Client at a Time

PFA studies can also document service delivered to more than one client at a time. At many clinics, educational sessions routinely have staff serving many clients concurrently. As with one-client contacts, staff members simply record their ID, the service provided, and the start and end times on each client’s register.

Clinic Register (Register 1)

The Clinic Register allows studies to characterize the clinic itself. The study coordinator and PFA team complete this register during or after the study, although the Data Set Name should be established before the study begins.

Figure 8 is an example of a completed Clinic Register (Register 1).

Figure 8, a sample Clinic Register, is the form study planners and organizers use to document clinic-specific data prior to data-entry; required data include study name, date of the session, and starting and ending time; optional data consisting of client visits per year, unduplicated clients per year, service hours per year, aggregate published hours for the year, and total annual costs less staff remuneration, allow WinPFA to calculate the session's prorated share of the clinic's yearly costs.

Figure 8 Sample Clinic Register



Patient Flow Analysis for Windows

Clinic Register - 1

***Data Set Name: June 2003 Study at Centro Piloto**

Scheduled Time of Clinic		Total Annual Operating Costs (all items "per Year")	
*Date(Mon/Day/Year):	<u>06 /02/2003</u>	Visits (≤ "500,000"):	10,000
*Start	<u>08: 00 AM</u>	Unduplicated Clients (≤ "500,000"):	
*End	<u>09: 00 PM</u>	Service Hours (≤ "8,800"):	
Number of Appointments (≤ "9,999"):		Published Hours (≤ "8,800"):	
		Annual Costs Minus Salary (≤ "\$50,000,000"):	\$25,000

Description/Comment (≤ 256 characters):

Fully staffed walk-in session at this urban health center; run daily by the MOH and delivering primary care.

***Required Data**

Data Set Name

Each PFA study has a unique data set name, composed of up to and including 255 characters. Traditional PFA data set names consisted of the two-character state postal code, plus three numbers that code the hierarchical levels of the organization's structure. Usually, the sixth and seventh characters represented the clinic site and the last number identifies the ordinal number (first, second, etc.) of the PFA study. For example, the first of two studies at the same Georgia site could be named GA000001; the second, GA000002.

WinPFA makes use of Windows file-naming conventions, permitting 255 characters. Consequently, you may name studies in a more overtly meaningful way; for example, "June 2003 Study at Centro Piloto" or "Beeville WIC 2003 Baseline Study June 2 2003."

Scheduled Time of Clinic

Enter the date of the study and the published or advertised hours of the clinic noting both the start and end times.

Description/Comment

Optional data up to 200 characters entered in the Description/Comment field appear only on the Summary Page of the (statistical) report (Figure 9). In addition to a description of the clinic, you may choose to document abnormal occurrences that could affect the study or you can use this field to further describe the data. For example, it may be noted under Description/Comment that the clinic was short one clinician the day of the study, resulting in abnormally long waits at the clinician station. Such data can be useful later during later analysis. For examples, please see the report (Figure 2) and the Sample Clinic Register (Figure 8).

Figure 9 Clinic Characteristics in the Report

C:\WinPFA\Reports\June 2003 Study at Centro Piloto_Summary.Rpt
Date of Study Tue, June 3, 2003

The data shown below in this report provides an overview of the clinic session documented by your PFA study. These data, as well as the data found in the body of the report, are dependent on your study design and your ability to carry out that design; for study design considerations and data collection procedures, please see the Patient Flow Analysis for Windows(WinPFA) Data Collection Manual.

Summary a
Clinic Characteristics

Comments

Fully staffed walk-in session at this urban health center; run daily by the MOH and delivering primary care.

Figure 9, a sample “Clinic Characteristics” coming from the Summary Report, reports data entered in the “Comments” field; typical “Comments” data describe the clinic facility, the clinic session, or other information not otherwise documented in the data collection.

Visually Editing the Data

As the completed registers are returned to the study coordinator, check them for legibility, accuracy, and completeness. Do this while events are still fresh in the staff members' minds to ensure the accuracy of your corrections.

Here are a few general hints for visual editing:

- Verify that documented data meet all WinPFA requirements.
- Verify that documented data meet the study design requirements.
- Make sure that all cost-calculation data from the staff and clinic registers make sense (for example, 100,000 visits per year in a clinic that sees 50 clients per day would be unrealistic).
- Be sure that descriptive labels documented by staff agree with those identified in your study design.
- Check that staff-documented labels are among the labels your study design anticipated for each type of event (for example, "lunch break" as a "contact" event?).
- Review all fields for legibility.

Clinic Register (Register 1)

Be sure that the Data Set Name includes only characters allowed by Windows for naming files. Generally "/" (forward slash) and "\" (back slash) are not permissible. Be sure the *Scheduled Clinic Hours* and *Earliest and Latest Time in the Data Set* fields are complete. Consulting clinic records, complete the *Number of Appointments Scheduled* field and, optionally, the *Description/Comment* field.

Personnel Register (Register 2)

Make sure the *Staff ID*, *Primary Clinic Task*, *Time You Are Ready to Serve Clients* and *Time You Are No Longer Available to Serve Clients* fields are all complete. If your study design requires an *Official Designation*, be sure this field is complete. For staff whose non-service time costs you wish to allocate as "distributed costs," be sure that this field is checked on those staff members' registers.

Client Register (Register 3)

Ensure that all fields on the first part of the register before *Client Service Contacts* and required by your study design are complete. Under *Client Service Contacts*, no data are required if the client received no services. However, for all contacts, the staff ID code, task, start and end times must be complete. Check that the time of arrival is no later than the start time of the first contact. Also, be sure that each contact's end time is no earlier than the contact's start time. Additionally, verify for clients with appointment that the appointment box is checked.

Most Common Errors

WinPFA provides field-level error checking and data validation, which must be run before generating any reports. This results in nearly error-free data entry. Nonetheless, identifying and correcting the following frequently made errors will allow quicker data entry:

- Incomplete Operating Costs data, when clinic costs are to be calculated (see Register 1).
- Not documenting the number of appointments scheduled, particularly when clients in the study had an appointment (see Register 1).
- Missing Staff ID (see Register 2).
- Staff unavailable periods are outside the period defined by *Time You Are First Available...* and *Time You Are No Longer Available...* (see Register 2).
- Staff's contact and noncontacts services conflict with their unavailable periods (compare Register 2 with Register 3).
- Client's Time of Arrival (and Time of Appointment, if applicable) is missing (see Register 3).
- Client's *Time of Arrival* is later than first contact's *Start Time* (see Register 3).

Using the Data

Now that you have completed the PFA study, the really hard work of converting the information to something useful begins. First comes data entry, for which the WinPFA Data Entry Manual will be extremely helpful. Then comes data analysis, which will require a great deal of information sharing between the PFA team and the staff. These two groups together will assess the information provided by the graph, statistics, appointment table, and other outputs.

The third manual in this series, *Interpretation and Use of the WinPFA Reports and Graph* (available late 2006), will provide assistance by orienting users to the formulas used for the (statistical) reports, the significance of these data, and how clinics can apply the data from the reports. Understanding these reports is critical before you, the PFA team, and the clinic's staff and management can begin to make changes to the clinic's systems.

We hope that you found this manual helpful. Although it is intended to supplement knowledge gained from a PFA training session, some users will conduct PFA studies without formal training. Please contact the CDC for additional assistance or to offer critical comments on this manual.

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Appendix A. Description of the Variables

Description of the Variables

The following table lists all variables which WinPFA uses to document client-flow studies. Descriptions for each variable include the variable’s name, a reference to the register using the variable, if the variable is mandatory or optional, and prescribed formatting requirements for the labels associated with the variable.

Two additional explanatory notes:

- The labels corresponding to the variables “Pay Period” and “Distribute Cost.” cannot be altered by the user. These are hard-coded into WinPFA. However, because users, in designing their PFA studies, will need to document these items (if “Pay Period” or “Distribute Costs” variables are to used), they are listed here to prompt the user to include them in planning and implementing studies.
- The “Unavailable” variable is listed twice, under Staff/Unavailable and again under Client/Unavailable. If you anticipate markedly contrasting reasons for staff’s compared with clients’ unavailability, then in planning and implementing studies, you will need different labels tailored to staff’s and to clients’ circumstances.

This table, which describes the WinPFA variables, is organized into four columns: Column 1 lists each variable name used in the WinPFA software; for each variable, columns 2 through 4 list this information: the WinPFA window which includes the variable (for example, the Client Window); whether documenting the variable is mandatory or optional; the required formatting (i.e., generally, the number of permissible characters) when the variable is a date, a clock time, a number, a dollar amount, or a short text or phrase.

Variable Name (caption title)	Register/Register Sub-Unit Where Found	Optional (O) or Mandatory (M)	Formatting Requirement for Labels
Scheduled Time of Clinic Date	Clinic/Characteristics	M	date; MM/DD/YYYY
Scheduled Time of Clinic Start [Time]	Clinic/Characteristics	M	time; HH:MM AM or PM
Scheduled Time of Clinic End [Time]	Clinic/Characteristics	M	time; HH:MM AM or PM
Number of Appointments Scheduled	Clinic/Characteristics	O	Numeric Only; 9999
Description/Comment	Clinic/Characteristics	O	text; 200 characters; all characters permitted
Total Visits per Year	Clinic/Operating Costs	O	Numeric Only; 500,000
Total Unduplicated Client per Year	Clinic/Operating Costs	O	Numeric Only; 500,000

Total Service Hours per Year	Clinic/Operating Costs	O	Numeric Only; 8,800
Published Service Hours per Year	Clinic/Operating Costs	O	Numeric Only; 8,800
Total Annual Cost Minus Staff Salary	Clinic/Operating Costs	O	Currency Only; \$50,000,0
Staff ID	Staff/Member	M	text; 4 characters; all characters permitted
Official Designation	Staff/Member	O	text; 30 characters; all characters
Primary Clinic Task	Staff/Member	M	text; 30 characters; all characters permitted
Time You Are First Available to Serve Clients	Staff/Member	M	time; HH:MM AM or PM
Time You Are No Longer Available to Serve Client	Staff/Member	M	time; HH:MM AM or PM
Miles Traveled	Staff/Mileage Rate	O	Numeric Only; 99,999
Mileage Rate	Staff/Mileage Rate	O	Currency Only; \$9.99
Time in Travel Status (minutes)	Staff/Member	O	Numeric Only; 99,999
Source of Funds for Member's Salary	Staff/Member	O	text; 30 characters; all characters permitted
Gross Salary	Staff/Member	O	Currency Only; \$2,000,00
Pay Period	Staff/Member	O	Hard-coded; user may not alter
Days of Paid Sick & Annual Earned Plus Holidays	Staff/Member	O	Numeric Only; 999
Fringe Benefits (%)	Staff/Member	O	Numeric Only; 100%
Hours in a Normal Workweek	Staff/Member	O	Numeric Only; 120
Paid Expenses	Staff/Member	O	Currency Only; \$9,999
Distribute Cost	Staff/Member	O	Hard-coded; user may not alter
Reason Unavailable	Staff/Unavailable	O	text; 30 characters; all characters permitted
(Non-Contact) Task	Staff/Non-Contact	O	text; 30 characters; all characters permitted
In-Session?	Staff/Unavailable	O	Hard-coded; user may not alter
Client ID Number	Client/Client	M	Numeric Only; 999,999,99

Reason for Visit	Client/Client	M	text; 30 characters; all characters
Subclassification	Client/Client	O	text; 30 characters; all characters permitted
Time of Appointment	Client/Client	O	time; HH:MM AM or PM
Time of Arrival	Client/Client	M	Time; HH:MM AM or PM
Time of Departure	Client/Client	M	time; HH:MM AM or PM
User-Defined Alpha 1 (or your variable name)	Client/Client	O	text; 30 characters; all characters permitted
User-Defined Alpha 1 (or your variable name)	Client/Client	O	text; 30 characters; all characters permitted
U-D Alpha/Numeric (or your variable name)	Client/Client	O	text; 30 characters; all characters permitted
User-Defined Numeric (or your variable name)	Client/Client	O	Numeric Only; ± 1,000,000
Contact	Client/Contact	O	text; 30 characters; all characters permitted
Reason Unavailable	Client/UnAvailable	O	text; 30 characters; all characters permitted
(Non-Contact) Task	Client/Noncontact	O	text; 30 characters; all characters permitted

Appendix B. Data Collection Registers (English)

The following graphic illustrates the Client Sign-in Sheet: At clinics where clients sign in to the clinic as they begin their visit, the study organizers can temporarily replace the usual sign-in log with this form which allows documentation of each client's WinPFA client ID, arrival and appointment times.

The following graphic illustrates the Staff Register: Kept by the individual staff member during the study, the Staff Register reminds the staff member of his or her personalized identification code (used with the Client Register) and is the form where he or she documents the beginning and end of the workday; prior to data entry, study organizers complete the form by entering remuneration and compensation data.



Patient Flow Analysis
for Windows

StaffRegister - 2
Page One

*Data Set Name: _____

MEMBER (Tab #1)

*Staff ID (text, ≤ 4 characters):	
Official Designation (text, ≤ 30 characters):	
*Primary Clinic Task (text, ≤ 30 characters) :	
*Time You Are First Available to Serve Clients:	____ : ____ __ M
*Time You Are No Longer Available to Serve Clients:	____ : ____ __ M

[Note: UnAvailable periods must fall Between Time You Are First... and Time You Are No Longer...]

COMPENSATION: Travel Status (Tab #2)

Miles Traveled (≤ "300" mi):	
Mileage Rate (≤ "\$9.99"/mi):	
Time in Travel Status (minutes) (≤ "300" min):	

COMPENSATION: Salary (Tab #2)

Source of Funds for Member's Salary (text, ≤ 30 characters):		
Gross Salary (≤ "\$2,000,000") :		(Per) Pay Period *
Days of Paid Sick & Annual Earned Plus Holidays (≤ "75" days):		
Fringe Benefits (≤ "100%"):	____ . ____ %	
Hours in a Normal Work Week (≤ "100" hours):		
Paid Expenses (≤ "\$500"):		
Distribute Cost:	<input type="checkbox"/>	✓ = Yes, distribute costs

*Required Data

The following graphic illustrates the Staff Register, page two: Kept by the individual staff member during the study, this second page of the Staff Register is where he or she documents both non-contacts and unavailable periods.



Patient Flow Analysis
for Windows

Staff Register - 2
Page Two

*Data Set Name: _____

*Staff ID (text; ≤ 4 characters)

UNAVAILABLE (Tab #3)**

Reason Unavailable (text; ≤ 30)	Start	End
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M

NON-CONTACT (Tab #4)**

In Session?	Client ID#	Task (text; ≤ 30)	Start	End
			__ : __ M	__ : __ M
			__ : __ M	__ : __ M
			__ : __ M	__ : __ M
			__ : __ M	__ : __ M
			__ : __ M	__ : __ M
			__ : __ M	__ : __ M
			__ : __ M	__ : __ M
			__ : __ M	__ : __ M
			__ : __ M	__ : __ M
			__ : __ M	__ : __ M
			__ : __ M	__ : __ M
			__ : __ M	__ : __ M

*Required Data;

**Must Fall Between "Time You Are First..." and "Time You Are No Longer..."

The following graphic illustrates the Client Register, page one, with unedited user-defined field names: Circulated throughout the clinic accompanying the client to each service station, the upper half of this form is used by staff to document Client ID, arrival and appointment times, reason for visit, subclassification, and individual client data for the UD fields as required by the study planners and organizers; the lower half documents the ID of staff providing service, the contact service provided, plus starting and ending times of the service. This version of the Client Register maintains the original default captions for the UD fields (for example, User-Defined Alpha 1).



Patient Flow Analysis for Windows

Client Register - 3
Page One

*Data Set Name: _____

*Client ID Number (≤ "999,999,999"): _____

*Reason for Visit (text; ≤ 30 characters): _____

Subclassification (text; ≤ 30 characters): _____

Time of Appointment: _____ M

*Time of Arrival: _____ M

Time of Departure: _____ M

User-Defined Alpha 1 (text; ≤ 30 characters): _____

User-Defined Alpha 2 (text; ≤ 30 characters): _____

User-Defined Alpha/Numeric (text; ≤ 30 characters): _____

User-Defined Numeric (± "1,000,000"): _____

Client Service Contacts (Tab #2)

#	Staff ID	Task	Start	End
1			__ : __ M	__ : __ M
2			__ : __ M	__ : __ M
3			__ : __ M	__ : __ M
4			__ : __ M	__ : __ M
5			__ : __ M	__ : __ M
6			__ : __ M	__ : __ M
7			__ : __ M	__ : __ M
8			__ : __ M	__ : __ M
9			__ : __ M	__ : __ M
10			__ : __ M	__ : __ M
11			__ : __ M	__ : __ M
12			__ : __ M	__ : __ M
13			__ : __ M	__ : __ M
14			__ : __ M	__ : __ M
15			__ : __ M	__ : __ M

*Required Data

The following graphic illustrates the Client Register, page one, with blank user-defined field names: Circulated throughout the clinic accompanying the client to each service station, the upper half of this form is used by staff to document Client ID, arrival and appointment times, reason for visit, subclassification, and data for the UD fields as required by the study planners and organizers; the lower half documents the ID of staff providing service, the contact service provided, plus starting and ending times of the service; for users who wish to tailor the captions for the UD fields, in this version the captions are left blank.



Patient Flow Analysis for Windows

Client Register - 3B
Page One
(blank UD field names)

*Data Set Name: _____

*Client ID Number (≤ "999,999,999")

*Reason for Visit (text; ≤ 30 characters):

Subclassification (text; ≤ 30 characters):

Time of Appointment __ : __ M

*Time of Arrival __ : __ M

Time of Departure __ : __ M

_____ (text; ≤ 30 characters):

_____ (text; ≤ 30 characters):

_____ (text; ≤ 30 characters):

_____ (text; ≤ 9 characters):

Client Service Contacts (Tab #2)

#	Staff ID	Task (≤ 30)	Start	End
1			__ : __ M	__ : __ M
2			__ : __ M	__ : __ M
3			__ : __ M	__ : __ M
4			__ : __ M	__ : __ M
5			__ : __ M	__ : __ M
6			__ : __ M	__ : __ M
7			__ : __ M	__ : __ M
8			__ : __ M	__ : __ M
9			__ : __ M	__ : __ M
10			__ : __ M	__ : __ M
11			__ : __ M	__ : __ M
12			__ : __ M	__ : __ M
13			__ : __ M	__ : __ M
14			__ : __ M	__ : __ M
15			__ : __ M	__ : __ M

*Required Data

The following graphic illustrates the Client Register, page two, continuation page for contacts: After users exhaust all space on page one of the Client Register, they use this continuation page (often printed on the reverse side of page one) to document additional contact service events.



Patient Flow Analysis
for Windows

Client Register - 3
Page Two

*Data Set Name: _____

*Client ID Number (text; ≤ " 999,999,999")

Client Service Contacts (continued)

#	Staff ID	Task (text; ≤ 30)	Start	End
16			__ : __ M	__ : __ M
17			__ : __ M	__ : __ M
18			__ : __ M	__ : __ M
19			__ : __ M	__ : __ M
20			__ : __ M	__ : __ M
21			__ : __ M	__ : __ M
22			__ : __ M	__ : __ M
23			__ : __ M	__ : __ M
24			__ : __ M	__ : __ M
25			__ : __ M	__ : __ M
26			__ : __ M	__ : __ M
27			__ : __ M	__ : __ M
28			__ : __ M	__ : __ M
29			__ : __ M	__ : __ M
30			__ : __ M	__ : __ M
31			__ : __ M	__ : __ M
32			__ : __ M	__ : __ M
33			__ : __ M	__ : __ M
34			__ : __ M	__ : __ M
35			__ : __ M	__ : __ M
36			__ : __ M	__ : __ M
37			__ : __ M	__ : __ M
38			__ : __ M	__ : __ M
39			__ : __ M	__ : __ M
40			__ : __ M	__ : __ M

*Required Data

The following graphic illustrates the Client Register, page three, for client non-contacts and unavailables: Circulated throughout the clinic attached to the Client Register, staff use this form to document all Client Non-Contact and Unavailable events, as required by the study planners and organizers. The only data staff document here are the event name (for example, "Client Reviews Video") and the event's starting and ending time.



Patient Flow Analysis
for Windows

Client Register - 3
Page Three

*Data Set Name: _____

*Client ID Number (text, ≤ " 999,999,999")

UnAvailable (Tab #3)**

Reason Unavailable (text, ≤ 30)	Start	End
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M

Non-Contact (Tab #4)**

Task (text, ≤ 30)	Start	End
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M
	__ : __ M	__ : __ M

*Required Data

**Must Fall Between Arrival and Departure Times

The following graphic illustrates the Codes and Labels form with optional codes and mandatory description for unavailable events: Study organizers and planners use this form as an organizing tool for documenting the only unavailable labels needed for the study; column 1 lists the codes which correspond to the label descriptions in column 2.

The following graphic illustrates the Codes and Labels form with optional codes and mandatory description for the for the user-defined fields: Study organizers and planners use this form as an organizing tool for documenting their self-tailored captions for any user-defined fields used in the study; column 1 lists the default captions which the new captions column 2 replace.



Patient Flow Analysis for Windows

WinPFA Codes and
Labels-6G

*Data Set Name: _____	
User-Defined Field (UDF) Captions	
Default Captions	**New Captions
User Defined Alpha 1 Caption	
User Defined Alpha 2 Caption	
User Defined Alpha/Numeric Caption	
User Defined Numeric Value	

***Required; **Text of Your Choice with 30-Character Maximum**

The following graphic illustrates the Codes and Labels form with optional codes and mandatory description for any variable with text labels: Study organizers and planners use this generic form as an organizing tool for formalizing any variable which staff document using either codes or labels.

The following graphic illustrates the Staff Worksheet: Study organizers and planners use this form to document data they will later include on each staff member's individual register; the column headers, "Staff" through "Distribute Cost?" describe the full range of data for each staff member.

The following graphic illustrates the Clinic Register: Study organizers and planners use this form prior to data entry to document a range of clinic-session-specific data; required data include study name, date of the session, session starting and ending time; optional data include the information WinPFA uses to calculate the session's prorated share of the clinic's yearly costs.



Patient Flow Analysis
for Windows

Clinic Register - 1

*Data Set Name: _____

Scheduled Time of Clinic		Total Annual Operating Costs (all items "per Year")	
*Date(Mon/Day/Year):	____/____/____	Visits (≤ "500,000"):	_____
*Start:	____ : ____ M	Unduplicated Clients (≤ "500,000"):	_____
*End:	____ : ____ M	Service Hours (≤ "8,8000"):	_____
Number of Appointments (≤ "9,999"):	_____	Published Hours (≤ "8,8000"):	_____
		Annual Costs Minus Salary (≤ "\$50,000,000"):	_____

Description/Comment (≤ 256 characters):

*Required Data

Appendix C. The Study Coordinator's Checklist

Study Coordinator's Checklists

Planning and Organizing the Study

- Decide on the date of the PFA.
- Decide how Client Registers will move through the clinic.
- Decide how to synchronize clocks and watches.
- Decide when and how clients will enter the study (placement of the sign-in sheet).
- Determine which staff members will participate in the study.
- Decide when staff members will receive their Staff Registers.
- Decide whether to use your Codes or the Labels during data collection.
- Decide whether to use the User-Defined variables.
- Decide who will determine the Reason for Visit and Subclassification.
- Decide how the study will document staff and client non-contacts events.
- Decide how the study will document staff- and client-unavailable events.
- Decide how to collect the Client and Staff Registers at the end of the study.
- Decide on use or avoidance of the new convention of less-than-1-minute events.

Preparing the Registers

Personnel Worksheet (Register 5)

- List all staff.
- Assign Personal ID codes, Official Designations, and Primary Tasks and other data.
- Optionally, complete the cost data.

Personnel Register (Register 2)

- Enter the staff member's name and Personal ID.
- Develop staff-person-specific list of the descriptive labels for the tasks each staff is likely to document during the study (AKA "cheat sheets"); include codes, if you will use them during data collection.

Client Register (Register 3)

- Number the registers before the study begins.
- If using the User-Defined variables, rename the UD field captions.

Briefing the Staff

- Give general instructions, being sure to emphasize the need to print legibly.
- Explain the roles of the Study Coordinator and the PFA team.
- Explain that staff need to seek out the PFA team if they have questions.
- Explain how all timepieces will be synchronized.
- Explain where staff will receive their registers before the study begins.
- Explain where staff will leave their registers after the study ends.
- Demonstrate documenting the Staff Register, Staff Non-Contacts and Unavailables.
- Describe use and demonstrate how staff will document client-related events.
- Identify which staff will initiate the Client Registers and who will provide assistance to these staff.

- ___ Demonstrate documenting the Client Register (including Reason for Visit, Subclassification, Arrival, Appointment and Departure times), Contacts, Client Non-Contact, and Unavailable events; urge staff to use their “cheat sheets.”
- ___ Explain and demonstrate documenting “CALL situations” as Staff Non-Contact events.
- ___ Promise staff the date they will learn the results of the study.

Running the PFA

Before the Clinic Session

- ___ Synchronize the clocks and watches.
- ___ Distribute the Personnel Registers.
- ___ Place sign-in sheets and Client Registers at predetermined sites and instruct the staff.

During the Clinic Session

- ___ Be available for questions.
- ___ Record events that are not recorded on the PFA registers but influence client flow.
- ___ Visually edit Client Registers as you collect them.

Wrapping Up the Study

- ___ Collect and visually edit the remaining Client Registers.
- ___ Reconcile collected Client Registers with the sign-in sheet.
- ___ Collect the Personnel Registers, enter remaining data, and visually edit again.
- ___ Reconcile collected Personnel Registers with the Personnel Worksheet.

Appendix D. Pay Period: The Hardcoded Variable

Pay Period: The Hardcoded Variable

For the “Pay Period” variable, WinPFA hard-codes the following values which describe the basic unit of time during which a staffer earns her or his salary (for example, \$500 per week). You must select one of the following as you document a staff person’s salary in the Compensation tab of the Staff Window:

Year
Month
Semi-Monthly
Fortnightly
Week
Day
Hour
Session
Patient
Minute

The graphic above presents key data which allow users to express staff salary for a given unit of time (for example, \$X per *year*). As shown, these units run from “Year” through “Week” to “Minute.”

Appendix E. Distributed Costs

Distributed Costs

Definition: WinPFA users may identify as “distributed” those costs associated with the portion of a staff’s workday when, according to your PFA study, the staff has no client contacts or non-contacts; for example, when the service site manager is performing administrative tasks as opposed to seeing clients.

Note: WinPFA, additionally, treats the clinic’s prorated share of the annual clinic costs and any costs associated with staff travel as distributed costs.

Once you identify them as “distributed,” WinPFA allocates these costs to all clients enrolled in the study.

Here is the rationale underlying this distributed cost methodology:

- Under nearly all circumstances, during this portion of the workday, the staff--despite not delivering any Contact or Non-contact services--serves not only the clinic as a whole but also all its clients;
- Were these costs assigned to only those clients seen by the staff, the visit costs for these clients might be disproportionately burdensome; this is particularly the case when this staff’s workday includes only occasional client services;
- Equal allocation of these costs among all clients is fairer to the client and produces study cost data that are more representative of the clinic.

WinPFA versus PFA. WinPFA and PFA use the same method to calculate individual distributed costs. However, WinPFA and PFA differ in regard to which staff may contribute to distributed costs:

- WinPFA allows users to decide which staff (that is, all, some, or none)
- PFA restricts users to only staff using the “M” (the designated manager task code) and those staff whose workday include no direct client service.

A Note of Caution. Compared with PFA, WinPFA permits the user complete freedom in designating which staff contribute to the clinic’s distributed costs. But what do we know about this methodology? What mix of staff—all staff, or selected staff according to job function, or staff who rarely see clients, or only the most highly paid staff?—should contribute their distributed costs to produce the soundest strategy for calculating costs?

Because of these questions, users might approach use of this methodology with these considerations in mind:

- Because PFA’s more restrictive method of designating staff as contributors of distributed costs is more time-tested, applying similar restrictions to WinPFA may be the preferred, prudent, short-term approach until additional experience is gained interpreting the WinPFA reports.
- WinPFA users should make use of local resources, including their organization’s financial management staff, who can contribute to this aspect of your study design.
- For serial WinPFA studies, contributors to distributed costs should consistently be the same staff, to allow meaningful comparisons of data between studies.

Glossary

This table, defining common PFA and WinPFA terminology, consists of two columns: first, the term; second, the definition.

Client non-contact	“Client non-contact” is a clinic event during which the client, as part of the clinic visit, performs activities as directed by clinic staff; for example, the client completes a set of forms.
Client register	“Client register” is the WinPFA data collection form used to document information about an individual client; the information starts with the client’s ID number and runs through contacts; data may include non-contacts and unavailable events.
Client unavailability	“Client unavailability” is a clinic event during which the client cannot receive or participate in contact or noncontact events due to being unavailable; for example, the client departs the clinic to escort a child to the pediatric clinic or the client returns home to retrieve documentation the clinic requires.
Clinic operations	“Clinic operations” refers to the clinic’s full range of activities (also referred to as “events”) and associated support systems.
Clinic register	“Clinic register” is the WinPFA data collection form used to document information about the clinic session you are studying. The information begins with the study name and runs through hours of operations and may include operating cost data.
Clinic routine	“Clinic routine” refers to the predictable pattern of events (often described in the clinic’s protocol) occurring during any clinic session and includes the manner and methods of service delivery.
Clinic session	“Clinic session” refers to the occasion (or date or time frame) when the clinic delivers services to clients. A session may encompass the entire of a calendar day; if spanning only a portion of the day, terms used include “afternoon session” and “morning session.”
Code	“Code” is an abbreviation you might use during data collection in place of the multiple-character label documented during data-entry; for example, the code “M” (or “MED”) may refer to the “Medical” reason for visit.
Contact service	“Contact service” describes the face-to-face delivery of service from a staff person to a client.
Data	“Data” are the discrete bits of information you collect about the clinic, the staff, the clients, and the events in which they participate during a clinic session.
Date variable	“Date variable,” documented on the clinic register, describes the date you conducted your PFA study.
Designation	“Designation” describes a staff person’s educational background or job training; for example, the “designation” of staff who provide nursing services may be “Family Nurse Practitioner,”

	“RN,” or “LPN.”
Distributed Costs	See Appendix E

Event	“Event,” an activity you document during a clinic session, can refer to a staff person’s providing a service to a client, a staff person’s being unavailable to provide service, a client’s being unavailable to receive services, or the client’s performing an activity as required by the clinic.
In-session	“In-session” identifies whether the recipient of a staff non-contact service is a client of the session being studied (“In-Session” = Yes) or is not among the session’s clients (“In-Session” = No).
Label	“Label,” one of the possible values for a WinPFA text variable, is defined by the user and described using 30 or fewer characters; for example, “Medical” as a label for the “Reason-for-Visit” text variable.
Non-contact service	“Non-contact service,” describing the non-face-to-face delivery of service from a staff person to a client, implies that the client may be unaware that the staff is providing the service or, if aware of the service, is unaware who is delivering the service.
Number variable	“Number variable” refers to those WinPFA variables that you must document with a number; WinPFA uses these documented numbers to perform calculations; for example, in the Operating Costs portion of the clinic register, “Total Visits per Year” is a number variable.
PFA team	“PFA team” is the group, traditionally comprising a range of clinic staff (and possibly others who are not staff) who design and implement the PFA study and then analyze and present the study data to the clinic staff. Additionally, the PFA team may be charged with carrying out system changes.
Physical plant design	“Physical plant design” refers to the clinic’s floor plan plus furniture and equipment planned so as to allow delivery of services.
Reason for Visit	“Reason for Visit,” referring to the client’s understood reason for presenting at the clinic, implies a predictable collection of services received by all clients of the same RFV category; for example, a “Class and Voucher Pick-Up” reason for visit in a WIC clinic may imply an order of services consisting of “Check-In,” “Nutritional Education Class,” and “Delivery of Vouchers.”
Register	“Register” is the WinPFA (or PFA) data collection form.
Service time	“Service time” refers to the discrete period of time, with identifiable beginning and end times, when a staff person provides a service to a client.
Staff register	“Staff register” is the WinPFA data collection form you use to document information about individual staff; the information begins with the staff’s ID and runs through the time they are no longer

	available to serve clients, and continues with their compensation, non-contact services, and their unavailable periods.
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Staff unavailability	“Staff unavailability” refers to discrete periods when staff identify they are not available to deliver services.
Study coordinator	“Study coordinator” leads the PFA team.
SUB	“SUB” is the abbreviation for Subclassification.
Subclassification	“Subclassification” allows you to document more detailed information about client visits; for example, to specify the client’s demographic characteristics or additional medical information (for example, family planning method). Alternatively, you may opt to document such information with the user-defined variables. But since WinPFA offers more analyzed data based on subclassification than for any of the UD variables, your use of the subclassification variable may yield better information.
Text variable	“Text variable” refers to those WinPFA variables the values for which you must document with a word or phrase of 30 or fewer characters.
UD	“UD,” the abbreviation for “user-defined” refers specifically to the User-Defined variables.
Unavailable	“Unavailable” describes periods when staff cannot provide service or when clients cannot receive services.
User-Defined Alpha	“User-Defined Alpha” is an optional variable that you may define and whose values you describe using 30 or fewer characters; for example, for the variable, “Is Partner in Clinic?” values may be “Yes,” “No,” and “Unknown.”
User-Defined Alpha-Numeric	“User-Defined Alpha-Numeric” is an optional variable which operates like the “User-Defined Alpha.”
User-Defined field	“User-defined field” refers to the last four variables on the first page of the client register; you may name these optional variables according to your data needs. See also “Subclassification.”
User-Defined Numeric	“User-defined Numeric” is the fourth of four optional variables you may define; unlike the other three UD variables, the values for the UD Numeric consist solely of numbers (as opposed to text); WinPFA makes calculations using the UD Numeric values. For example, for the variable “What is Client’s Age?” values may be any positive or negative whole number (that is, integer).
Variable	“Variable” is the formal reference to WinPFA’s field names. Because what you document for the field may be any of a broad range of values or descriptions, the field is not fixed and, therefore, is variable. For example, “Reason for Visit” is a variable with these possible corresponding values: “Annual,” “Initial,” and “Medical” (see “10-17xxModifiedDataSet1.pfa” data set which comes with WinPFA).

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