CHAPTER

25

Evaluating a Protocol Budget

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1. INTRODUCTION

Preparing and evaluating a budget for a protocol or clinical trial can be done for different purposes. It could be to obtain financial support for your own research through a grant application, a pharmaceutical company may have offered to pay you to conduct a protocol at your site, or maybe it is the reverse—you are the one who is going to be paying other researchers to conduct a protocol at their sites. From any of these perspectives, it is important to gather complete information in order to sufficiently prepare a protocol budget. With that in mind, preparing a budget should focus on evaluating the protocol to determine what the requirements of the protocol are and what the resource requirements will be at the clinical trial site where the protocol will be implemented. Once you have established those requirements, you will be able to develop a comprehensive budget. This chapter describes the different requirements that should be considered and then a method for establishing a protocol budget.

2. REQUIREMENTS

In order to evaluate the protocol requirements, you need to determine exactly what is going to be done as part of the protocol. Once that is completed, you should be able to determine what resources the site will need in order to implement the protocol. The items in Table 25-1 are discussed in this section since they are the most common requirements that should be included when you evaluate the protocol and site resource requirements, especially if it is for a clinical trial.

2.1. Duration

In terms of the duration, you will need to know how long the protocol is going to last—days, weeks, months, or years. It is also important to consider whether or not duration is based on the accrual rate, if it is divided into steps or phases (e.g., a treatment phase and a follow-up period), and, if it has different steps or phases, whether they are of equal intensity. There is a difference between a duration that is 48 weeks versus a duration that is 48 weeks after the last subject is enrolled. If it takes 24 weeks to enroll that last subject, the protocol duration has just changed from 48 weeks to 72 weeks. Increasing the duration by 50% will impact your budget remarkably.

2.2. Subjects

The research subjects to be enrolled in the protocol are considered in both the protocol requirements and the site resource requirements. In terms of the protocol, you will want to consider the following:

- How many will be enrolled?
- How many will you need to screen to achieve the target enrollment?
- How long will it take to achieve the target enrollment?
- What are the eligibility criteria? How is that going to impact your recruitment?
- What are the subjects signing up for? How many study visits are required? What other commitments or special procedures are required that might impact your recruitment?

TABLE 25-1 Requirements

Protocol	Site Resources
Duration	Subjects
Subjects	Clinical
Screening	Laboratory
Clinical	Study product
Laboratory	Data management
Study product	Travel
Toxicity management	Personnel
Data management	Equipment
Monitoring	Supplies
Travel	Regulatory
	Subcontracts
	Indirect costs

From the perspective of site resources, the focus of areas to consider related to the research subjects is different, although it is based on the protocol requirements. It will include consideration of the following:

- How large is the site's population base?
  Does it represent the population affected by the disease? Does it include racial or ethnic minorities? Women? Children? Other special populations (e.g., intravenous drug users, pregnant women, and prisoners)?
  Based on eligibility criteria, how many people in the pool of patients are potentially eligible?
  How many people will need to be screened for every enrollment?
- What will you need to do to recruit subjects for enrollment, and how will you reach out to them?
  Do you have a strategy or plan to recruit subjects? This is especially critical for recruiting women, minorities, and other special populations.
  Will you need to advertise your protocol to recruit for it? This may include such things as public service announcements, newsletters, and informing primary care providers, public health clinics, or hospitals.
  Do you need to get institutional review board (IRB) approval for your recruitment methods?
- What will you need to do to keep your subjects in the protocol? Recruiting subjects is not enough; you also have to consider retention.
  Do you have a strategy or plan to retain subjects once they have been enrolled? If it is a long-term study, this is especially important.
  Does your plan contain financial incentives? It is not uncommon for subjects to be reimbursed for travel expenses, receive food or formula, be provided with child care during visits, or receive compensation for painful procedures.
  Would these incentives be considered coercive?
  Do you need to get IRB approval for your retention methods?
- Do you plan to involve the community, and what do you expect the involvement to be? Community involvement may contribute to the success of your recruitment and retention, whereas lack of community support may contribute to the failure of recruitment and retention, so this needs to be carefully considered.
  What support will you need to provide to the community so that it is more knowledgeable about your protocol (e.g., information about the disease and education about research)?
  How will you address a community that may have knowledge and experience ranging from the layman to technical expertise?
  In what kind of forum will you do this?
  Do you need to provide any financial support for community involvement? Refreshments, free parking, and printed materials may be necessary.
  What do you expect to get out of your community (e.g., input into protocol and assistance with recruitment and retention)?

2.3. Screening

Before a subject can be enrolled into a protocol, screening is usually required to determine that the person is eligible. Screening may range from interviewing the person about his or her history to specific clinical and laboratory evaluations. The protocol may require special clinical or laboratory tests, and it may also have a time constraint on when the screening data are obtained in relation to enrollment in the protocol (e.g., within 45 days prior to enrollment). If a laboratory test or procedure is done outside a protocol-required time constraint, it may need to be repeated. Who will bear that cost? If screening involves tests and examinations that are considered to be part of routine care, then the investigator may be expected to bill the person's insurance for reimbursement. If the person is uninsured or the insurance company denies it, who will bear that cost? It is essential to know who will be paying for the costs related to screening, what it will include, and if it will cover the costs of screening everyone or only those who are successfully enrolled in the protocol. Again, you will need to closely estimate how many potential subjects you will need to screen to achieve the target enrollment. The budget related to screening is extremely important because it may have a major impact on your resources. If you have to screen a large number of people to achieve your targeted enrollment, it could be very expensive.

2.4. Clinical

If the protocol involves a clinical trial, then you will need to consider the budget in terms of both the protocol requirements and the site resource requirements. In terms of the protocol, you will need to know what evaluations are required. The protocol will specify how many study visits are to occur and what is to occur during those visits. However, the protocol may not specify how long each visit will last and who will need to conduct the visits. This is something you will need to determine based on the protocol requirements in order to adequately budget for it. You will also need to consider if each visit is the same or if they have varying intensity. Typically, study visits are more intense at the beginning of a study, especially in multiyear studies. Year 1 may have more intense visits and more frequent visits than the following years. Thus, a visit that lasts only 30 minutes versus one that lasts several hours will have a different impact on the cost. Visits conducted by a physician, nurse, midlevel practitioner, or some combination of care providers will also impact the cost. In addition, you will need to consider if there are any special procedures (e.g., lumbar puncture, biopsy, magnetic resonance imaging, computed tomography scan, and timed blood sampling for pharmacokinetic studies) that will need to be done as part of the protocol so they can be incorporated into the budget as well.

After determining the clinical protocol requirements, you will need to assess what site resources are required to fulfill those requirements. There are several possible features of site resources related to the clinical aspect of the protocol that will impact the budget. The first one is location. This includes considerations such as if it is a single-site or multisite trial; if it will be done in urban or rural areas; if it will be done in one country or multiple countries; and whether it will involve university, private, or public facilities.

The second feature is infrastructure. You will need to know where you will see subjects for their study visits and what infrastructure you will need to perform the evaluations. Can the study visits be conducted in an office or do you need an examination room? Do special services or facilities, such as inpatient care, radiology, special procedures, and emergency or resuscitation equipment, need to be accessible? The costs associated with this variety of clinical resources will differ. Other considerations include the following:

- Is the existing space sufficient?
- If multiple sites are involved, is the infrastructure consistent across the sites?
- Can the laboratory support both routine and special laboratory tests?
- Are any alterations or renovations required?

If you are conducting clinical trials in resource-poor countries, an accurate assessment of infrastructure is very important because it does not exist as we think of it in many places. For example, does the clinical area have an area for hand washing or can a hand sanitizer be used? Does the pharmacy have air conditioning and humidity controls as well as secure doors and windows? If you have to build infrastructure first, it can become a major expense.

2.5. Laboratory

Another requirement you may need to consider is the protocol and site resource components related to the laboratory. In terms of the protocol, you will need to know what laboratory tests are required. This includes the number and type of laboratory tests to be done at each visit, whether they are routine safety tests or special research tests, if any serial studies will be required, the type of specimens (serum, plasma, cells, and tissue), what will need to be done with the specimens when they are collected (processing, shipping, and storage), if the tests will be done in real time or later in batches, and what laboratories will be used (local, commercial, and research). Again, the laboratory testing may vary in intensity, so you will need to carefully evaluate the requirements for each visit.

Once the protocol requirements are determined, the budget will need to reflect the site resources that are necessary to support the laboratory protocol requirements. This means it will be necessary to evaluate the site's capacity related to laboratory. If there are any limitations to that capacity, determine how they will be corrected and the cost of doing so. This includes obtaining specimens, processing specimens, preparing specimens for both storage and shipping, and whether the laboratory participates in certification or quality assurance programs to ensure that validated results are being obtained. Costs associated with obtaining specimens include those for needles, gloves, tubes, and possibly personnel time. The budget for processing specimens will depend on what will be done at the site and could include a centrifuge, reagents, supplies, equipment, and support for equipment maintenance contracts. If a site is to ship specimens, the budget will need to include funds for packing materials; ice packs, dry ice, or liquid nitrogen; transportation; and training for shipping hazardous materials. If the shipping is international, the budget may also need to include the use of special couriers to refresh dry ice and escort

packages through customs. If the site is to store specimens, then the site will need to have access to freezer space and an ability to track and retrieve specimens. Therefore, the budget may include refrigerators, freezers, a computer, backup generators, and alarm systems.

2.6. Study Product

If the protocol involves the use of a study product (drug, vaccine, microbicide, device, etc.), you will need to determine the protocol requirements with regard to what type of product it is, how many there will be, the route of administration (intravenous, injection, oral, topical, etc.), the frequency, and the duration. The site resources required for managing study product will depend on those answers. Site resource requirements may include access to a pharmacy and pharmacist; distributing the study product to the site and also to the subjects, determining how much of a supply will be dispensed at each interval, and determining if any supplies are needed to do this; storing the study product in recommended conditions (temperature and humidity) at the site, pharmacy, or the subject's home; maintaining accountability of the study product once it has been received; and providing education, training, and counseling to the subjects.

2.7. Toxicity

If a protocol involves study products, you will need to know how toxicities will be managed, and the budget might include a combination of both protocol and site resource requirements. Based on the protocol, what can you expect in terms of toxicities or adverse experiences? The protocol may specify the treatment and evaluation of common or expected toxicities, and that could involve additional visits, laboratory tests, or special procedures to evaluate the event and follow it through to resolution. However, you should also expect to budget for the costs of more serious or unexpected toxicities. Costs related to a rash versus renal failure are very different. You will also need to know if the protocol needs to meet FDA reporting requirements, the IRB reporting requirements for toxicities, and what impact those reporting requirements will have on site resources, most commonly personnel time to prepare reports and respond to queries.

2.8. Data

Data for protocols are usually collected on case report forms (CRFs) or questionnaires; therefore, you will need to know who is developing them and if this needs to be included as part of your budget. Statistical support to analyze the data may also be necessary. Computer programming for the CRFs and statistical analysis may need to be included as well. Evaluating the protocol requirements will also include determining how much data will be collected at each visit. This includes the number of CRFs and if the individual forms consist of multiple pages. A CRF consisting of 5 pages may take longer to complete than a single-page CRF, implying a higher cost. In addition, the protocol may require that the data be collected and submitted within a certain time period. There may also be costs associated with transmitting the CRF data from the site to a data management or statistical center, depending on what the protocol requires for data disposition.

Site resources for data collection and management usually consist of several components. Staff to complete CRFs, to verify that CRFs are complete and accurate, and to resolve errors and data queries may be the most expensive component since these activities can be very time-consuming. Other site resources related to data management may include equipment such as computers, printers, facsimile machines, and copiers; supplies such as paper and toner; telecommunication and Internet access; maintenance contracts for equipment; and technical support. Another aspect of data management at the site is maintaining the source documents and regulatory files related to the protocol. The budget to support maintaining records such as these will be based on how files are organized and what is needed to provide storage that is secure and has limited access, both during the study and after the study (if necessary).

2.9. Monitoring

The term monitoring may have different meanings. It may refer to clinical (adherence to the protocol, regulations, and good clinical practices), safety (toxicities, adverse experiences, and end point achievement), and data monitoring (source documents and CRFs); it may be done by someone who is part of the site staff or someone independent of the site; and it might also refer to auditing done by the sponsor, IRB, FDA, Office for Human Research Protections (OHRP), or other regulatory body. Each of these consumes staff time, whether it is to conduct the monitoring or to work with a monitor when he or she is at the site, so this requirement should be incorporated in the budget.

2.10. Travel

Protocol and site resource requirements for travel may include meetings or trainings associated with a

protocol, scientific presentations, visiting other sites, performing outreach or recruitment, and as part of retention efforts. Once you determine what travel is required, you will need to determine the type, number, length, location, and the staff (investigator, coordinator, nurse, etc.) to be included in the budget. Then, you will also need to determine the costs related to travel. These may include transportation (air, train, mileage, taxis, etc.), parking, lodging, meals, and incidental expenses.

2.11. Personnel

As you evaluate the various requirements related to the protocol and site resources, many of them include staffing or personnel time and effort. So when you examine the site resources requirements for personnel you will want to consider the different types of personnel, their experience, and their other commitments. Personnel may include those who specialize in research and others who do not.

The first group could include the principal investigator, subinvestigators, coordinators (study, project, clinical, and administrative), research nurses, laboratory scientists and technicians, data staff (entry, analyst, and manager), and statisticians. The latter group may include physicians, midlevel providers (nurse practitioner and physician's assistant), nurses, pharmacists, specialists, consultants, social workers (case manager and outreach coordinator), monitors, quality managers, regulatory affairs specialists, and administrators (fiscal and secretarial). It is not unusual to see professional or higher paid staff doing work that could be done by support staff. Therefore, it is important to carefully evaluate who is needed to do the various tasks related to the protocol. Is it more cost effective to have someone transcribing data onto CRFs or to have the research nurses enter the data onto the CRFs? How will either method affect costs related to quality assurance and data management? Who will transport specimens from the clinic to the lab? Who is going to do all the copying or preparing of subject files? You will need to determine how your budget will be most efficiently utilized by the types of personnel you support.

The experience of the personnel involved is also important and will affect the budget. Someone who is less experienced or more "junior" will usually cost less to support than an expert; however, that must be balanced with the need to have personnel with sufficient expertise and qualifications to implement the protocol. In resource-poor countries, it can be a challenge to hire the appropriate staff. Also, the roles and responsibilities of personnel in other countries can vary compared to those of similar positions in the United States. If access to experienced staff is limited, the budget may need to include costs for training or recruiting.

The availability or other commitments of the personnel involved is important to consider since you want to make sure that the personnel will give you the time and effort that you are supporting financially. For example, if an investigator is also committed to doing other research, serving on the faculty of a university, and serving as an attending physician at a hospital, will he or she have sufficient time to focus on your protocol? You will want to negotiate a realistic commitment to support with your budget.

2.12. Equipment and Supplies

A variety of equipment and supplies may be needed to fulfill the various site resource requirements. This could include items for the clinic (ECG machine, scale, blood pressure cuff, exam gloves, needles, and hazardous waste containers), laboratory (freezer, centrifuge, reagents, plastic disposables, syringes, tubes, and dry ice), office (computers, furniture, filing cabinets, copier, paper, toner, file folders, and binders), mailing and shipping (postal and courier service), and telecommunications (phone, facsimile, and Internet). Some of these could be specific items in the budget and others could be included as part of another cost. For example, reagents could be part of the fee for specific lab tests, or clinic supplies could be included as part of a fee for using the clinic space.

2.13. Regulatory Issues

An increasingly common part of budgets is the cost of the regulatory burden associated with doing research. This refers to both the staff resources and fees associated with fulfilling IRB requirements, complying with state and federal (FDA and OHRP) regulations, complying with National Institutes of Health policies, meeting good clinical practice expectations, establishing policies and procedures, and complying with other sponsor requirements. The ability to track and comply with this assortment of regulatory requirements can consume a significant amount of staff time, and many IRBs now charge fees to the investigator for each protocol that is submitted. With regulatory requirements continuing to increase, you will want to ensure this is considered as part of the site resource requirements for your budget.

2.14. Subcontracts

If the site does not have the resources in place to fulfill the protocol requirements, subcontracts with

other organizations or individuals may be necessary. It is not uncommon to outsource for services in the areas of monitoring, pharmacy, laboratory, data management, computer support, and record storage. When this needs to be done, restrictions related to salary structure, limits on funding levels, and types of costs covered may need to be incorporated into the budget.

2.15. Indirect Costs

Another aspect of site resource requirements that may be part of the budget is the indirect cost rate. Indirect costs are also referred to as overhead or facilities and administration costs. These are fees charged by an institution and may include such items as space, utilities, cleaning, maintenance, administrative support, and equipment. Indirect costs are usually a negotiable rate that is based on a percentage of the budget. If your budget includes indirect costs, it is important to clarify what the rate is based on and if there are any limitations. For example, is it based only on personnel costs, or does it include equipment, supplies, travel, and clinical costs? You also need to know what the indirect costs will specifically cover so that you can ensure you are getting what you are purchasing. For example, do utilities include phone and Internet? Do you need to budget for a security guard if it includes building security? Another aspect to consider is if you can make any changes to lower your indirect cost rate, such as moving to a different location. That consideration will need to be balanced with other costs you may then need to support instead, such as rent, access to the research subjects, laboratory support, or other site resource requirements.

3. ESTABLISHING A PROTOCOL BUDGET

Now that the different protocol and site resource requirements have been described, this section focuses on establishing a protocol budget. To prepare a protocol budget, you will need to determine on what your costs will be based. Your institution may have an established price list, you may need to use industry standard pricing, or you may need to base it on your previous protocol budgeting experiences. If you are conducting a multicenter protocol or using an industry standard, you may need to compare prices across practices, institutions, cities, and countries and, possibly, vary those prices to reflect any differences.

In addition, for some aspects of the budget, there are different ways to calculate how you will charge the costs. For example, rates for personnel may be charged at a flat rate per study visit, at an hourly rate, or as a percentage of full-time effort (a full-time equivalent equals 100%). Another example is laboratory tests. Testing can be done after the specimen has been collected (real time) or specimens can be saved for analyses until a number of samples have been collected (batched). Batching is sometimes done on all of the samples from a subject, the site, the study, or some other grouping. Batching is usually more cost efficient even when you include the costs of storage until analysis.

The budget you prepare should cover the full spectrum of protocol implementation. That means, in addition to the conduct of the protocol, your budget will need to include the costs associated with the startup activities or all of the regulatory and administrative work necessary to initiate a protocol; screening subjects to determine eligibility; follow-up for six to eight weeks following study completion, if required; and close-out activities or all of the regulatory and administrative work necessary to end a protocol.

When preparing your protocol budget, it is important to remember that you want to determine the real or actual cost of conducting the protocol; however, there is no single right way to do this. Therefore, you want to make sure you do it correctly; otherwise, you might overspend your budget before you complete the protocol. It is also reasonable to assume that you will need to establish a balance between conserving costs and preserving subject safety and the scientific integrity of the protocol. Suggestions for doing this include the following:

- Only schedule tests and collect data that are necessary. It is very easy to keep adding things that would be “interesting” or “might” be analyzed in the future; however, this can increase your costs dramatically.
- Negotiate or shop around to find the best rates for your needs.
- Change the study visit schedule.
- Change laboratory and research test schedules.
- Change periods of recruitment, sample size, or duration of study.
- Consider alternative sites to conduct the protocol.
- Outsource or subcontract services that are too expensive to perform on your own.

Two commons ways to establish your budget are to determine a cost per subject and to record a cost for each resource on a line of your budget. Either method is effective, especially if you consider all the costs that go into conducting the study. The following example uses a spreadsheet to establish a cost per subject. In setting up a spreadsheet, you can make it as simple or

complex as you like. For illustration purposes, the spreadsheets displayed here are fairly basic.

In preparing a spreadsheet, it is useful to group types of costs together so you can examine how much money is budgeted for each of the categories or groups. Depending on the protocol, categories may include personnel, subject reimbursement or incentive, clinic supplies, office supplies, clinical procedures, radiology, and laboratory. These categories can also be separated further. For example, personnel could include physician, nurse, pharmacist, data manager; this could be subdivided even further into the types of duties. Laboratory costs could be divided into hematology, chemistry, immunology, microbiology, and virology. The rows in the spreadsheet will list the categories, and the columns will indicate the parameters to be applied, such as the number of visits, hours per visit, and cost per hour. The final column should be a total for that row with a formula inserted to automatically calculate it. Figure 25-1 is an example of a spreadsheet to calculate personnel costs per subject, and Figure 25-2 is an example of a spreadsheet to calculate laboratory costs per subject. So where does the data come from in order to complete the spreadsheets? One source is the protocol's schedule of evaluations. Figure 25-3 illustrates a schedule of the clinical and laboratory evaluations from a sample protocol.

The information from Figure 25-3 is used to determine some of the protocol and site resource requirements described in the previous section and, therefore, can be used to establish your protocol budget. You will notice that the schedule includes evaluations required for screening, entry, each study visit after entry (weeks 2–48 and after 48 weeks), if virologic failure occurs, if the subject enters step 2 (this is only for subjects who develop resistance to one of the study drugs), and when the subject is discontinued (D/C) from the study. Looking at this schedule, you can determine some of the personnel and laboratory requirements.

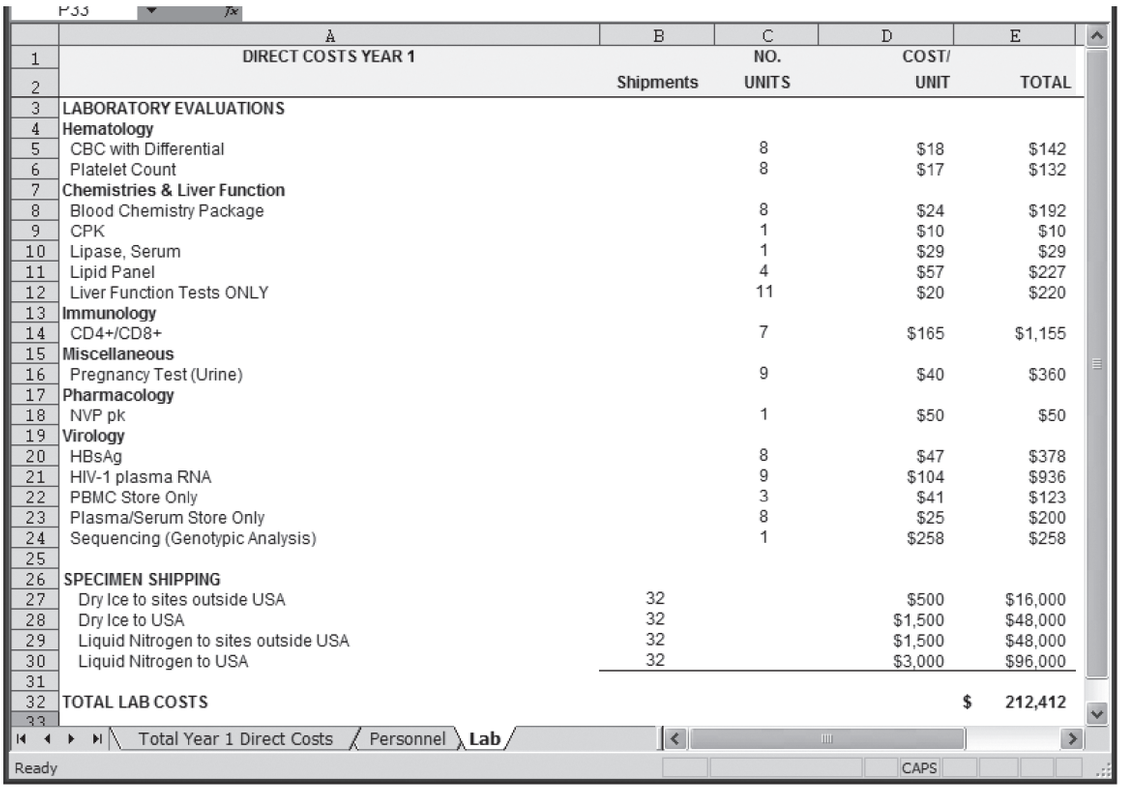
The schedule in Figure 25-3 indicates that clinical assessments are required at screening; entry; weeks 2, 4, 8, 12, 16, 24, 36, and 48 and every 12 weeks after week 48; step 2; and D/C. The sample spreadsheet in Figure 25-1 indicates a total of 11 visits on the physician rows. The first row under the physician category is for the initial visit. This is a separate line for the physician, nurse, and pharmacist categories because the initial visit usually requires more time. Note that the "Hours/Visit" column indicates 1 hour for this type of visit and the number of visits is only "1." In our example, this will account for the screening visit. The second row under the physician category is for the remaining study visits; however, it is important to note that it specifies year 1. In fact, column A, row 1 indicates this whole worksheet is only for direct costs in year 1. That means the costs associated with the scheduled visits after week 48 are not reflected in this worksheet. For budgeting purposes, it is usually easier to

	A	B	C	D	E	F
1	DIRECT COSTS YEAR 1	NO. of	NO.	HOURS/	COST/	
2		Prescriptions	VISITS	VISIT	HOUR	TOTAL
3						
4	**PERSONNEL TIME**					
5	**Physician**					
6	Initial Visit		1	1.0	$75	$75
7	On Study, Year 1		10	0.5	$75	$375
8	**Registered Nurse**					
9	Initial Visit		1	3.0	$40	$120
10	On Study, Year 1 (Physical, Draw & Aliquot Blood, Charting)		10	2.0	$40	$800
11	Adherence Assessment		4	0.3	$40	$40
12	Questionnaire Administration		2	0.2	$40	$16
13	**Pharmacist**					
14	Initial Set-up		1	0.4	$60	$25
15	Time per visit per prescription	4	10	0.2	$40	$320
16	**Administrative**					
17	Regulatory Affairs Specialist		11	0.5	$35	$193
18	Quality Assurance Specialist		11	1.0	$30	$330
19	Secretary		11	1.0	$15	$165
20	**Data Management**					
21	Manager		11	0.2	$30	$66
22	Technician		11	0.5	$15	$83
23						
24	**TOTAL PERSONNEL COSTS**					**$2,607**
25						

Total Year 1 Direct Costs | **Personnel** | Lab

Ready CAPS

FIGURE 25-1 Personnel spreadsheet.



	A	B	C	D	E
1	DIRECT COSTS YEAR 1		NO.	COST/	
2		Shipments	UNITS	UNIT	TOTAL
3	LABORATORY EVALUATIONS				
4	Hematology				
5	CBC with Differential		8	$18	$142
6	Platelet Count		8	$17	$132
7	Chemistries & Liver Function				
8	Blood Chemistry Package		8	$24	$192
9	CPK		1	$10	$10
10	Lipase, Serum		1	$29	$29
11	Lipid Panel		4	$57	$227
12	Liver Function Tests ONLY		11	$20	$220
13	Immunology				
14	CD4+/CD8+		7	$165	$1,155
15	Miscellaneous				
16	Pregnancy Test (Urine)		9	$40	$360
17	Pharmacology				
18	NVP pk		1	$50	$50
19	Virology				
20	HBsAg		8	$47	$378
21	HIV-1 plasma RNA		9	$104	$936
22	PBMC Store Only		3	$41	$123
23	Plasma/Serum Store Only		8	$25	$200
24	Sequencing (Genotypic Analysis)		1	$258	$258
25					
26	SPECIMEN SHIPPING				
27	Dry Ice to sites outside USA	32		$500	$16,000
28	Dry Ice to USA	32		$1,500	$48,000
29	Liquid Nitrogen to sites outside USA	32		$1,500	$48,000
30	Liquid Nitrogen to USA	32		$3,000	$96,000
31					
32	TOTAL LAB COSTS				$ 212,412

FIGURE 25-2 Laboratory spreadsheet.

separate the costs for different years onto separate worksheets. Returning to the schedule in Figure 25-3, after screening occurs there are 9 clinical assessments scheduled for year 1 of the protocol. However, our sample spreadsheet (Fig. 25-1) indicates the number of visits is 10. One extra visit was included in the budget to account for the possibility that the subject may require a step 2, D/C, or unscheduled visit in year 1. In this same row, note that the hours per visit have been changed to 0.5. This is because the amount of physician time for these visits is not as intensive as it is for the initial visit.

Also note that in Figure 25-1 the other personnel categories have been subdivided to reflect different types of personnel or different intensities in visits. Under nursing, besides the initial and on-study visits, there are additional rows for adherence assessment and questionnaire administration. These activities do not occur at every study visit, but they do increase the duration of the visit, so listing them in a separate row is one way to account for the added intensity of these visits.

Accounting for laboratory costs is usually more straightforward. When you compare the schedule with the spreadsheet in Figure 25-2, the calculations are done in a similar manner. Hematology and blood chemistry tests are required seven times during the first year (including screening); however, eight tests are included in the spreadsheet for each of those categories. Again, this allows for the possibility that a step 2, D/C, or unscheduled visit may occur in year 1. There are a few laboratory tests on the schedule (pregnancy, HbSAg, lipase, CPK, and lactate) that are only required if necessary. This means that you will need to determine how many of these tests should be budgeted, and you may have to justify how you arrived at that decision. You may have noted that one section of the laboratory spreadsheet includes a category that is not on the schedule. This is specimen shipping. To determine the costs and frequency of specimen shipping to include on your spreadsheet, you will have to refer to the protocol to determine the requirements for shipping (dry ice or liquid nitrogen) and the frequency of shipments (real time vs. batched).

4. SUMMARY

As described in this chapter, evaluation of a protocol budget begins with determining the requirements

Evaluation	Screening	Entry Week 0	Weeks after Entry								After 48 weeks	Virologic Failure	Step 2 Entry	D/C
			2	4	8	12	16	24	36	48				
Documentation of HIV	X													
Medical/Medication History	X													
Concomitant Medications/ Treatment Modifications		X	X	X	X	X	X	X	X	X	q 12w		X	X
Clinical Assessments	X	X	X	X	X	X	X	X	X	X	q 12w		X	X
Hematology	X	X		X		X		X	X	X	q 12w		X	X
Blood Chemistries	X	X		X		X		X	X	X	q 12w		X	X
Lipid Levels		X						X		X	q 48w		X	X
Liver Function Tests	X	X	X	X	X	X	X	X	X	X	q 12w		X	X
Pregnancy Testing	X	X	Repeat if Indicated											
HbSAg		X	Repeat if Indicated											
Lipase			Perform for symptoms suggestive of pancreatitis											
CPK			Perform for sx suggestive of myositis											
Lactate			Perform for sx suggestive of lactic acidosis											
CD4+/CD8+	X	X				X		X	X	X	q 12w		X	X
HIV-1 RNA, real time	X	X				X		X	X	X	q 12w	X	X	X
HIV-1 RNA, batched				X			X							
Plasma for Resistance Testing		X										X	X	
Stored Plasma		X		X	X	X		X	X	X	q 12w	X	X	X
Stored PBMC		X						X		X	q 24w	X		
PK Sampling, Arm 1A only			X	X										
Adherence Assessments				X		X		X		X	q 24w			
QOL/RU Assessments								X		X	q 24w			

FIGURE 25-3 Protocol schedule of evaluations.

of the protocol and site resources. Establishing a protocol budget is affected by the cost base you are using and how the costs are calculated. Depending on the protocol and site resource requirements, your spreadsheets may include a variety of cost categories and can be as simple or complex as necessary. Finally, it is important to remember that you will need to be prepared to justify how you arrived at your budget, and performing a detailed evaluation should provide you with that justification.