Writing a Grant Proposal

Part 6: The Budget, Budget Justification, and Resource Environment

■ Donna Zimmaro Bliss

The budget and budget justification sections of the grant proposal explain the financial plan for implementing the study. The environmental resource section highlights the pool of resources available to the investigator that will support the proposed research. This sixth and final Spotlight on successful grant writing explains the development of the budget, budget justification, and environmental resource sections of a research proposal. Members of the Center for Clinical Investigation of the Wound, Ostomy and Continence Nurses (WOCN) Society have written this series to promote the submission of grants by WOCN members to the WOCN grants program and to help obtain successful funding.

Budget Components

The budget of a grant proposal describes the costs of implementing the study aims. A budget can be organized into the following major categories: personnel, consultants or technical/supportive staff, supplies, equipment, services, computer hardware and software, postage, photocopying, travel, incentives/compensation for subjects, and miscellaneous. Figure 1 illustrates a sample budget for a hypothetical study in which a survey will be mailed to patients who received a urinary diversion and an interview will be conducted with a subset of survey respondents. The personnel category includes the base salary and fringe rate (ie, nonsalary benefits) of the study investigators. These costs are computed using values for each team member's base salary and fringe rate multiplied by the percentage of their effort that will be spent on the proposed study. Consultants are experts who have specialized knowledge but a more limited role in the study than the investigators. This may be a statistical consultant who assists with planning the study's design and analysis plan, for example. A consultant may also be an expert in survey construction who will assist in scaling responses to survey questions. The cost for a consultant is typically listed using the hourly rate of pay for providing their expertise. Examples of technical or supportive staff are laboratory technicians who analyze specimens or research assistants who collect or enter data. In some academic institutions, a statistician may also be classified as technical staff. A laboratory technician or statistician may divide his or her time among several research projects. The cost of a shared technical staff member is represented by the percentage of his or her salary and fringe that will be needed to conduct the work or analyses for the proposed study. Research assistants hired to collect data who are students at a university may be paid by the hour or based on a percentage of effort; for example, a 25% position requires 10 hours per week of work; their fringe rate usually includes a tuition benefit.

Supplies and equipment are the materials needed to conduct the study procedures. These are differentiated not by their size but by their cost. A single item that costs $2500 or more is considered equipment in some institutions, regardless if it is a hand-held electronic analytical instrument or a large machine. Examples of supplies in laboratory research are disposable test tubes, chemicals, and beakers used in assays; examples of supplies in survey research are envelopes in which to mail surveys. Each component of supplies and equipment should be listed and priced individually. The service category of a budget includes the cost of paying for a task rather than hiring a person to do the task. For example, when an investigator does not have access to hire a laboratory technician to measure the hemoglobin A1c levels of patients with diabetes in a study of leg ulcers in these patients, they can pay a laboratory to conduct these analyses on a fee-per-sample basis. Paying a data entry company to key the responses to a survey about the effects of leg ulcers on quality of life into a computer software program is another example of a service.

Computer hardware (including printers) and software or digital cameras (if allowed to be purchased with grant

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Personnel	Title/Role	% Effort on Project	Yearly Base Salary	Salary Requested	Fringe Benefit	Subtotal
Jane Smith, RN, BSN, CWOC	Research program specialist: to interview 40 patients	25% × 1 yr.	$30,000	$7,500	$1,875	$9,375
Consultant						
Lea Jones, MS	Survey construction consultant	Hourly Rate $40	Total hours 15			$600
Services						
Data Entry of survey responses	250 surveys at 98% accuracy					$1,300
Supplies						
Envelopes to mail surveys	250 surveys × .20/envelope					$50
Text about survey research						$95
Photocopying						
Surveys	250 surveys × 6 pages copied double-sided × .08/page					$120
Color photocopying of survey cover with graphic	250 surveys × 1 page × $1.00/page					$250
Postage	250 surveys × $.90 postage per survey					$225
Incentives						
$5 gift card	250 survey recipients × $5 each					$1,250
						Total $13,265

FIGURE 1. Selected example budget components of a hypothetical grant to survey and interview patients about psychological adjustment and complications after receiving a urinary diversion.

funds) should be listed separately. Software for statistical analysis or qualitative data management is an example of special software that may be permitted.

Calculations for the cost of postage or photocopying pages should be detailed for each piece; for example, the cost of photocopying data collection forms should comprise the number of pages of the forms, the cost of photocopying per page, and the number of subjects who will receive the forms. If the investigator develops data collection forms after funding is received, he or she will need to provide the best estimate of the number of pages to make these calculations. The numbers (eg, of forms, pages, and subjects) used in the budget calculations should be congruent with those reported in the methods section. Travel mileage related to the protocol (eg, to make a home visit to a subject) should be also itemized using standard mileage rates (eg, $.045 per mile). Local travel expenses always exclude usual travel to work or school. Examples of nonlocal travel would be the cost of flying or driving to a national conference to present the findings of the study or to train in a special research skill with another investigator.

Finally, money, gift cards, or other items that will be purchased as incentives or compensation for subjects should be described in terms of their amount and the number of subjects who will receive them. The "miscellaneous" category is for items that do not fit into one of these standard categories. A funding organization may stipulate in its guidelines whether certain types of items are not allowed to be charged to the grant, or it may strike an item unanticipated and disallowed after it reviews the budget. Paying part of an investigator's salary to conduct the research is an example of a cost that is commonly not allowed in many small foundation grants but is standard in larger federally funded projects.

It is advisable for investigators to obtain real estimates for their budget items so they can adequately cover their costs and complete the project. Munger[1] cautions that any impropriety, such as overestimating or "padding" the budget, questions the credibility not only of the investigator but also of his or her project and sometimes his or her institution. Many grant reviewers are researchers themselves who are familiar with the costs of research and scrutinize budgets carefully. Conversely, underestimating the costs of the budget can cause reviewers to question whether the investigator understands the scope of the project.[1]

Funding agencies want value for their money[1]; therefore, a savvy investigator shows that the project is affordable, as well as has scientific merit, clinical significance, and an innovative approach. Investigators can demonstrate the affordability of their project using one of two approaches. In one approach, the investigator plans a study whose aims can be accomplished within the monetary parameters offered by the grant foundation. For example, the budget of a proposal for the Hollister grant for Continence Nursing would total $7500. This is the simplest approach for the novice investigator. Alternatively, when only a por-

tion of a larger or more expensive study can be completed for the funds offered by a grant program, the investigator can delineate which aim(s) and outcome(s) can be expected for the funds requested. The investigator must explain any scientific or financial overlap (ie, duplication) of the proposed study with other grants that have been received or are pending. Because of the increasing needs and competition among proposals and resource limitations of funding organizations, many organizations will not fund studies with significant overlap. However, there are often numerous parts to a research question that can be investigated using different funding awards; a novice investigator who seeks to use this approach may benefit from consulting an experienced nurse researcher.

Budget Justification

Justifying the need for the items listed in the budget is an important part of the grant. The savvy investigator addresses all items in the budget and explains why they are essential to the conduct of the research. The justification need not be complicated or long, but it should be accurate and convincing. An example justification for purchasing a digital camera would be to photograph skin damage of patients with perineal dermatitis to achieve the outcomes of documenting the severity and stages of healing of the damage. In some cases, the investigator may be prudent to explain why an item needs to be purchased as part of the grant; for example, if a computer is needed, the investigator should explain that he or she does not have access to a computer as part of his or her employment.

The justification of study personnel is an opportunity to showcase the expertise that each team member has and why that expertise is critical for implementing the study. Each team member should make a unique contribution to the study. In addition to clinical certification, academic degrees, and length of professional experience or research, special accomplishments, knowledge, or training relevant to the study can be featured. For example, if the investigator completed a training seminar in conducting focus groups, such training would be seen as a strength in a study whose methods involved focus groups. This section is also a place in which to demonstrate previous collaboration among the team members. Noting coauthored publications or joint committee work or service projects by key personnel gives evidence of the ability of the team to complete a project and work well together.

Resource Environment

The resource environment section describes the resources accessible to the investigator that will facilitate their research. Even if a small grant does not explicitly request this section, key points can be intertwined in parts of the budget justification. An example is when an item needed for the research, such as a computer or statistical software, is made available to the investigator to use. Consultation of a clinical expert in the investigator's institution that will be donated is a second example. "Boiler plate" or readily available generic information has limited use, perhaps in a description of the institution.[1] The savvy investigator customizes his or her listing of available resources to those directly related to the project and also describes how he or she uses them. For example, having access to a clinic examination room would be a significant resource for a study that involved assessing leg ulcers of patients with diabetes.

In conclusion, the budget and budget justification are integral parts of a grant proposal that are instrumental in showing the value and requirements of implementing the project. The accuracy and detail of the budget and persuasiveness and clarity of the justification reflect on the investigator's competence and care with which he or she prepared his or her proposal. In the resource environment section, the investigator has an opportunity to showcase additional strengths that will facilitate the success of his or her study.

KEY POINTS

✔ The budget presents the costs associated with conducting the proposed research with accuracy and sufficient detail.

✔ The budget justification explains why the items listed in budget are essential to conduct the proposed study.

✔ The qualifications, expertise, and contributions of the research team, as well as their ability to collaborate, are highlighted in the justification of study personnel.

✔ In the resource environment section, the investigator explains the available resources that will facilitate his or her research.

Reference

1. Munger R. Seeing your proposal through the reviewer's eyes. *Emerg Med Serv*. 2002;31(6);79-84.