Guide to Avoiding the Three Common and 'Deadly' Pitfalls of Pharmaceutical Marketing Research

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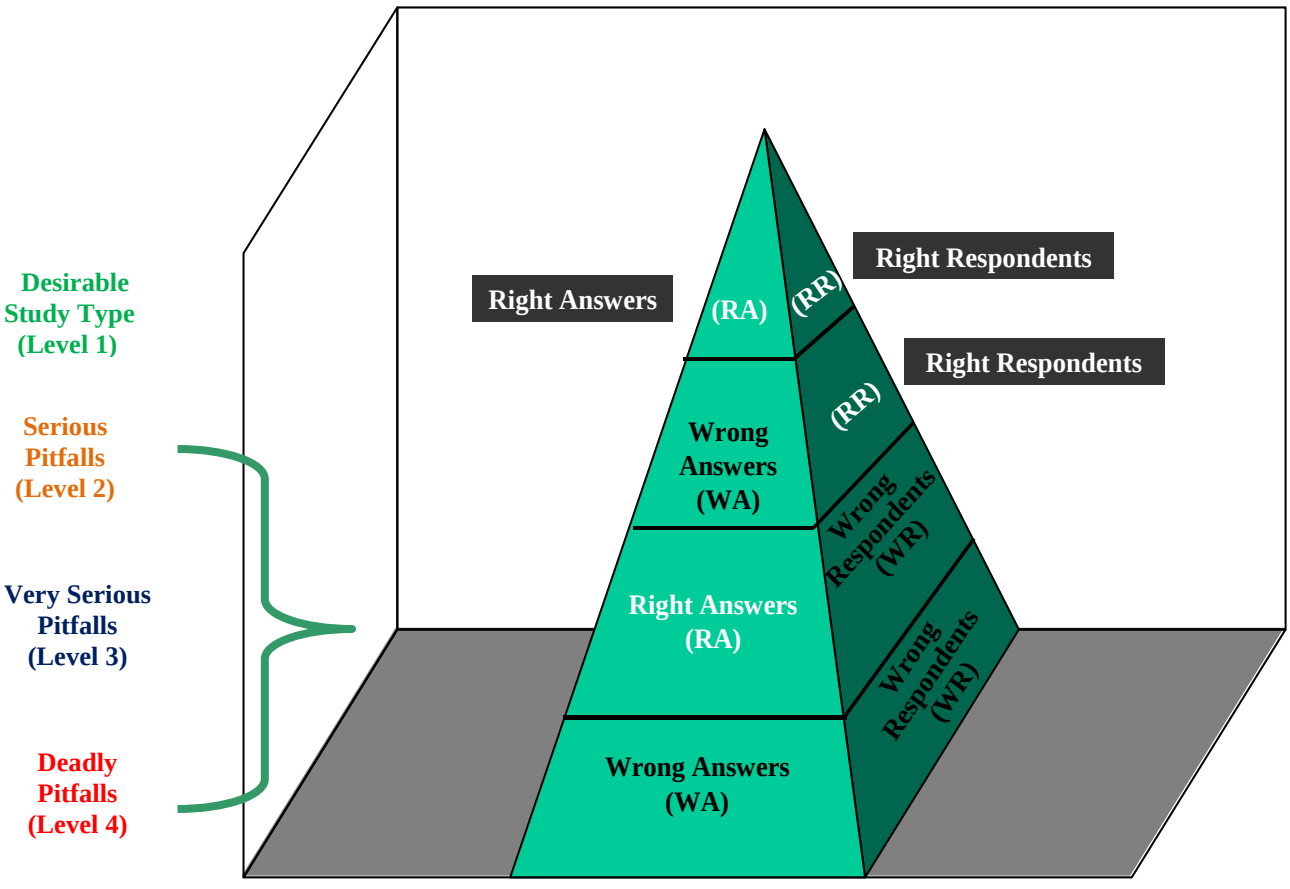
A research sponsor is responsible for ensuring that every reasonable effort is made to obtain optimal study value and to avoid costly marketing errors. To accomplish this, the major study pitfalls must be avoided. A "pitfall" is "a source of danger or difficulty not easily foreseen and avoided." Pharmaceutical marketing researchers and their sponsors must train themselves to recognize telltale signs of impending danger, often hidden in the rhetoric of study design. This paper will help you to identify and avoid the three study types that contain serious to "deadly" pitfalls.

The Two Study Attributes That Must Be Present

To obtain maximum study value and to avoid multimillion-dollar mistakes, a study must:

- obtain the **right answers** to the correct questions
- obtain a study sample that correctly represents the target population (**right respondents**).

Hierarchy of Study Types and Associated Pitfalls



Almost all quantitative, nonexperimental, pharmaceutical marketing studies attempt to determine the prevalence, incidence, mean value, or other descriptive statistics in a population. Examples of study outputs include market share by physician and patient type, physician treatment and patient usage patterns, target physician and/or patient characteristics.

Right answers require correct questions, and questions can only be right if they lead to correct strategic marketing decisions. *Begin by determining which specific decisions need to be made. Then, determine the research questions and data that must be obtained*.

Right answers also require that the observed values from a study sample represent the true values of the target population.

Unfortunately, **wrong answers** are not uncommon. Cardarelli and associates reported that one-fourth of the 20 underlying FDA-scrutinized studies presented in pharmaceutical company promotional brochures were **not valid** or were misrepresentative (BioMed Central, 2006). Unlike these studies, typical internal pharmaceutical company-sponsored marketing research studies are not subject to FDA scrutiny and thus are much more likely to produce wrong answers.

How can you avoid sponsoring a study that produces wrong answers?

Many factors could contribute to wrong answers, but you can greatly reduce your risks by answering or obtaining answers to the following questions:

Are your study estimates accurate enough for the decisions you need to make?

Accuracy is the degree to which information matches true or accepted values.

Are your study measurements precise enough, and how much confidence do they justify?

Precision refers to the level and exactness of your measures. The lower the precision, the more subjects you will need to compensate for the "noise" in your measurements. Even with a larger sample, noisy data can be hard to interpret. High precision does not indicate high accuracy, nor does high accuracy imply high precision.

Consider one of our firm's projects requiring that two conditions be met:

- at a minimum, the **degree of precision** for market share estimates varies by no more than ±5.0 percentage points
- this level of accuracy would be obtained at least 90% of the time (**degree of confidence**).

The confidence interval is the likely range of the true value.

Do the results of the measurement process correlate with some external standard with which you can compare?

A common complaint among research sponsors is that their marketing research leads to faulty and unusable market forecasts. Such research is not correlated enough with the appropriate external standard.

A prior study by the research supplier of one client led to a sales forecast that was four times higher than actual unit sales the following year.

Is measurement error minimized by effective questionnaire design?

Among the most important steps one can take are:

- framing questions to be clear, precise, and unbiased
- taking steps to clarify ambiguous or incomplete answers
- eliminating response order effects
- pretesting to validate communication assumptions.

Does the research supplier have the controls necessary to eliminate or minimize data processing and data analysis errors?

Great care must be taken to ensure that the data collected are accurate. At times, extensive communication by the research supplier with some respondents is required to correct inconsistent responses and other errors. Our firm follows up with many physician participants in a patient records study to ensure data accuracy and interpretation.

Such follow-ups require time, because physicians are typically very busy and may be hard to reach quickly. Make sure that your supplier has built in adequate

time for such vital feedback.

Right Respondents

Seemingly right answers may be meaningless unless obtained through study of an appropriate sample of **right respondents**. How can you avoid sponsoring a study that uses wrong respondents? The following questions are among those you should ask:

Is an appropriate universe or population identified?

The definition of the relevant population (all patient care physicians in target specialties, "top-decile prescribers" of a specific Rx, etc.) is crucial because systematic differences in the responses of members of the population and nonmembers may exist.

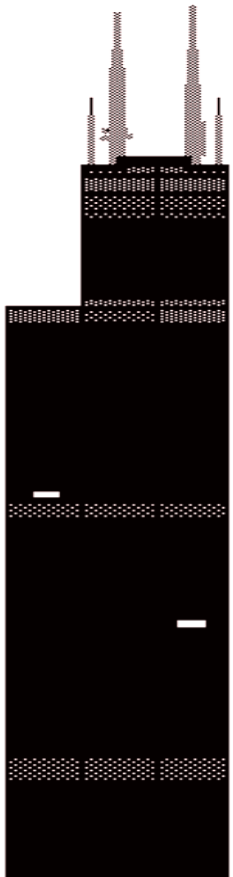
Does the target list or source include all members of the target population?

The target population should consist of **all** physicians, patients, or other target elements whose characteristics or perceptions the survey is intended to represent.

Was the sample selected to approximate the relevant characteristics of the population?

Imagine a container of soup the size of the Sears Tower, and your job is to determine the ingredients of the soup and the relative proportion of each ingredient. Imagine further that the elevators are broken and only the stairs are available. Your research supplier might be tempted to sample the soup on floors closer to the bottom, perhaps avoiding the long, *time-consuming* climb to the top floors altogether. These suppliers would miss some of the most important physicians, the spices of the soup. **Their report would indicate that the soup is very bland and contains mostly potatoes**.

Tower Full of Soup – What's In It?



Unstirred Soup

Lightest Ingredients on Top Floors (spices)

Other Ingredients

Heaviest Ingredients on Bottom Floors (potatoes)

Fortunately, it is not necessary to eat the whole container of soup to determine the ingredients if the soup is properly mixed. To "stir" the soup, you would decide to take a sample of soup from each of the 107 floors or from an evenly distributed sample of floors. Unfortunately, many target physicians figuratively practice on the top floors. They are reluctant to participate in marketing research studies.

Some types of pharmaceutical marketing research studies require extensive, multiple-stage efforts to approximate the relevant characteristics of the population. For example, in our national retrospective patient records studies, the task is to obtain a nationally representative sample of target patients. First, we must obtain a nationally representative sample of target physicians as discussed above. Next, we must obtain a random sample of target patients from each physician study participant. We typically accomplish this by having the physician select the last four patients he/she treated for the target condition. Otherwise, physicians might tend to select the most interesting, but not most representative, cases.

Proper sampling (stirring) takes time. *Make sure that your supplier is requesting enough time to correctly accomplish this vital task.*

Is the level of nonresponse too great to produce a representative sample?

A random sample from a complete list of physicians in the target population does not necessarily produce a representative sample. Some selected physicians may still be omitted because they refuse to participate in the study. Thus, your research supplier must expend great effort to obtain study participation from each selected physician.

Our firm has found some excellent ways of obtaining study participation by the "hard to recruit" physicians. For example, some of these physicians will participate in marketing studies conducted by scientists who publish in the medical literature.

Determine if your research supplier is using physicians only from panels and not from the larger universe of target physicians, or if many of the physicians in the sample regularly participate in studies for that firm, or if any other type of ***convenience sampling*** *is employed*.

Are inferential statistics used when the study sample is not random?

Statistical procedures lead to misleading inferences when used with an unrepresentative/nonrandom sample of the target population (**wrong respondents**). *Make sure that the supplier does not use inferential statistical procedures with a nonrepresentative sample unless sample biases are understood and appropriately adjusted*.

Next Major Steps

Use the information and questions presented in this paper to classify each of the studies in which you have been involved during the past two years into a Level 1, Level 2, Level 3, or Level 4 (see Figure 1). For all but Level 1 studies, list the problems responsible for each study's failure to obtain **right answers** and/or **right respondents**. You should repeat this exercise with each research supplier during the proposal phase and research/design phase.

Key References

Cardarelli R, Licciardeon J. (2006). A cross sectional evidence-based review of pharmaceutical promotional marketing brochures and their underlying studies: Is what they tell us important and true? ***BMC Fam Physician***, Mar; 7, 13.

Cochran, W. (1977). ***Sampling Techniques***, 3rd Edition. John Wiley, New York.

Cohen, J. (1988). ***Statistical Power Analysis for the Behavioral Sciences***. Hillsdale, NJ: Lawrence Erlbaum Associates.

Diamond, S. (1994). Reference Guide on Survey Research in Michael J. Sachs, ***Reference Manual on Scientific Evidence.*** Washington: Federal Judicial Center.

Gallagher, J. (1989). Invalid patient studies: Not a bargain at any price. ***Journal of Health Care Marketing***, Volume 9, No. 1, 69-71.