

Section 2. QAS-99 Coding Form

This section contains a sample QAS-99 coding form. Although the details of how to use this form are contained in the section that follows (Section 3), take a quick look at this form first to get an idea of the basic steps and problem types that are involved.

**QUESTION APPRAISAL SYSTEM (QAS-99):
CODING FORM**

INSTRUCTIONS. Use one form for *EACH* question to be reviewed. In reviewing each question:

1) **WRITE OR TYPE IN QUESTION NUMBER. ATTACH QUESTION.**

Question number or question here:

2) **Proceed through the form - Circle or highlight YES or NO for each Problem Type (1a... 8).**

3) **Whenever a YES is circled, write detailed notes on this form that describe the problem.**

STEP 1 - READING: Determine if it is difficult for the interviewers to read the question uniformly to all respondents.

1a. WHAT TO READ: Interviewer may have difficulty determining what <i>parts</i> of the question should be read.	YES NO
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1b. MISSING INFORMATION: Information the interviewer needs to administer the question is <i>not</i> contained in the question.	YES NO
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1c. HOW TO READ: Question is <i>not</i> fully scripted and therefore difficult to read.	YES NO
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STEP 2 - INSTRUCTIONS: Look for problems with any introductions, instructions, or explanations from the *respondent's* point of view.

2a. CONFLICTING OR INACCURATE INSTRUCTIONS, introductions, or explanations.	YES NO
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2b. COMPLICATED INSTRUCTIONS, introductions, or explanations.	YES NO
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STEP 3 - CLARITY: Identify problems related to communicating the *intent or meaning* of the question to the respondent.

3a. WORDING: Question is lengthy, awkward, ungrammatical, or contains complicated syntax.	YES NO
3b. TECHNICAL TERM(S) are undefined, unclear, or complex.	YES NO
3c. VAGUE: There are multiple ways to interpret the question or to decide what is to be included or excluded.	YES NO
3d. REFERENCE PERIODS are missing, not well specified, or in conflict.	YES NO
STEP 4 - ASSUMPTIONS: Determine if there are problems with assumptions made or the underlying logic.	
4a. INAPPROPRIATE ASSUMPTIONS are made about the respondent or about his/her living situation.	YES NO
4b. ASSUMES CONSTANT BEHAVIOR or experience for situations that vary.	YES NO
4c. DOUBLE-BARRELED: Contains more than one implicit question.	YES NO

STEP 5 - KNOWLEDGE/MEMORY: Check whether respondents are likely to <i>not know</i> or have trouble <i>remembering</i> information.	
5a. KNOWLEDGE may not exist: Respondent is unlikely to <i>know</i> the answer to a factual question.	YES NO
5b. ATTITUDE may not exist: Respondent is unlikely to have formed the attitude being asked about.	YES NO
5c. RECALL failure: Respondent may not <i>remember</i> the information asked for.	YES NO
5d. COMPUTATION problem: The question requires a difficult mental calculation.	YES NO
STEP 6 - SENSITIVITY/BIAS: Assess questions for sensitive nature or wording, and for bias.	
6a. SENSITIVE CONTENT (general): The question asks about a topic that is embarrassing, very private, or that involves illegal behavior.	YES NO
6b. SENSITIVE WORDING (specific): Given that the general topic is sensitive, the wording should be improved to minimize sensitivity.	YES NO
6c. SOCIALLY ACCEPTABLE response is implied by the question.	YES NO

STEP 7 - RESPONSE CATEGORIES: Assess the adequacy of the range of responses to be recorded.	
7a. OPEN-ENDED QUESTION that is inappropriate or difficult.	YES NO
7b. MISMATCH between question and response categories.	YES NO
7c. TECHNICAL TERM(S) are undefined, unclear, or complex.	YES NO
7d. VAGUE response categories are subject to multiple interpretations.	YES NO
7e. OVERLAPPING response categories.	YES NO
7f. MISSING eligible responses in response categories.	YES NO
7g. ILLOGICAL ORDER of response categories.	YES NO
STEP 8 - OTHER PROBLEMS: Look for problems not identified in Steps 1 - 7.	
8. Other problems not previously identified.	YES NO

Section 3. QAS-99 Manual

Instructions on Using the Manual

Purpose of the QAS-99 Manual. The manual provides detailed directions on how to fill out the coding form (in Section 2) by following the eight basic steps of the QAS-99. These steps are arranged in an order that loosely mirrors the question asking-and-answering process. These steps are global in nature; under each one are a number of specific problems types (labeled 1a, 1b, 1c...). The manual provides detailed directions on how to determine whether each problem type exists and, therefore, when to code these by circling YES on the QAS-99 coding form.²

How to Read the Manual, the First Time Through. Look at a copy of the coding form when reading the manual. Pay special attention to the examples that illustrate each problem type. The manual also contains check marks (✓) that provide additional clarifying tips on questionnaire design and problem type coding issues. So, by reading through the manual and making frequent reference to the coding form, you should be able to develop a good working knowledge of the way the system works. In a later section, you will get to practice applying the QAS-99.

Two Issues to Consider, Up Front. Once you begin to apply the QAS-99, you may have two basic reactions:

1. ***“I can’t tell which problem type to select. It seems like more than one may apply, and I don’t know which one to choose.”***

Although the different problem types under each step are intended to address separate aspects of a question that may be problematic, there clearly is overlap between these, and this can make it difficult to identify (to “code”) a unique problem type category in a particular situation. This reaction, however, should not be a reason for getting bogged down in making coding decisions. Remember that the ultimate purpose of the QAS-99 is to find problems so that these may be rectified. Therefore, identification is more important than exact classification. Once you have identified a problem, do not dwell excessively on figuring out which category fits

² Because this version is derived from the project that was done for the Behavioral Surveillance Branch of CDC, most of the example questions are health questions that commonly occur in the BRFSS.

best (several may fit). Think of the QAS-99 as a series of fishing nets—if one net misses, another one may “make the catch.”

2. ***“There are problems with every question.”***

This reaction is common because there is no such thing as a perfect survey question, and the QAS-99 is designed to find a lot of different types of potential flaws. So, instead of just concluding that it is futile to script good questions, it may help to consider a few points that put the appraisal process in the appropriate context:

- Using a system such as this to critique the question in effect forces the user to consider many aspects of the question and to search extensively for problems. Under such a microscope, problems will likely be found frequently. It may not be possible to fix everything. If the most basic problems can be identified, and addressed, however, the exercise has been worthwhile.
- Problems differ in their seriousness. Whereas some may simply make the question less than ideal for purposes of analysis, others could render the information obtained completely useless. The appraiser should consider the ramifications of the problems found, given the intended purposes of the question. Sometimes we have to “live with” questions that have some degree of vagueness because we cannot specify terms to the extent that legal text does. Or, the topic may be sensitive in nature because there is no way to escape the fact that some risk behaviors involve such behaviors as sex and drug use. The fact that a question may contain one or more potential problems does not mean we should absolutely not ask it. Rather, we should recognize that there is no such thing as a perfect question, and attempt to develop the best form possible, consider the limitations, and make a decision regarding the worthiness of administering that question.
- Reasonable people can disagree about which problem type applies, or whether a problem even exists. A degree of subjectivity is inherent in all question appraisals. We have no evidence other than our own experience and judgment to use in deciding whether respondents will know or remember certain information, whether a question is too long, or whether the response categories used are meaningful to the majority of the population surveyed. Such decisions may be further confirmed or refuted by pretesting. Through question appraisal, we simply do our best to make a number of these subjective judgments, and to create the best questions that are possible at this point. The QAS-99 is a tool that guides us through this process.

In summary, remember that the overall purpose of the QAS-99 is not to find ways to criticize every survey question (or questionnaire designer!), but rather, to help the designer to find basic potential problems and to fashion the version that will require the least additional work, in order to contribute to a measurement system that fulfills the research objectives.

Finally, a Note About Terminology. The QAS-99 divides the “survey question” into two basic parts:

- the question
- the response categories

When we discuss survey questions in the manual, the term question has a specific meaning and refers to the part that is read to the respondent over the phone. For example, consider the following:

QUESTION: How useful is the QAS-99? Would you say very useful, somewhat useful, or not at all useful?

RESPONSE ___ Very useful
CATEGORIES: ___ Somewhat useful
 ___ Not at all useful
 ___ I don't know yet

For purposes of discussion below, we refer to the part “How useful is the QAS-99? Would you say very useful, somewhat useful, or not at all useful?” as the question. The eligible answers (___ Very useful ... ___ I don't know yet) are referred to as response categories. Note that because the response categories are communicated to the respondent in this case, we do consider them to be part of the question. If the interviewer did *not* read these to the respondent (i.e., just “How useful is the QAS-99?”), but instead, they are only listed for the interviewer's use, then they would *not* be considered to be a part of the question and would *only* be termed as response categories. This practice allows us to distinguish between problems that pertain to response categories that are read and those that are not.

The next pages detail all of the QAS-99 steps and problem types.

STEP 1 - READING: Determine if it is difficult for the interviewers to read the question uniformly to all respondents.

Problem Type 1a - WHAT TO READ: Interviewers may have difficulty determining what *parts* of the question are to be read.

- *Circle YES on the QAS-99 coding form if ...*
 - a) *The interviewer must make a decision as to whether or not to read certain parts of the question to a particular respondent.*

OR

- b) *The question contains phrases in parentheses or instructions labeled **READ IF NECESSARY**.*

Example In the past month, have you talked to a doctor or other health professional about your own health? (READ IF NECESSARY - include doctors, nurses, dentists, psychologists, osteopaths, and chiropractors. Do not include telephone calls only for the purpose of making appointments).

Comment How will the interviewer know whether it is necessary to read the question's additional phrases? If you want all respondents to include or exclude certain things, then the explanatory information must be read to each respondent.

- ✓ *Remember that when questions are administered over the telephone, respondents can respond only to what is read to them.*

STEP 1 - READING (continued)

Problem Type 1b - MISSING INFORMATION: Information the interviewer needs to administer the question is not contained in the question.

- *Circle YES for 1b if ...*

1) The interviewer must remember something about the respondent, consult other materials, or return to another question to determine if the question should be asked for that respondent.

OR

2) The question depends on information that may not have been collected previously in the interview.

Example (Ask if age >60): Would you say that your health in general is excellent, very good, good, fair, or poor?

Comment The interviewer may not know the respondent's age at this point in the survey. Or, given computer-based administration, even if the computer is taking care of this, we need to at least determine if the appropriate information (here, age) will have been collected previously.

STEP 1 - READING (continued)

Problem Type 1c - HOW TO READ: Question is *not* fully scripted and therefore difficult to read.

- **Circle YES for 1c if the wording necessary to read the question is not provided.** This frequently occurs when questions are converted from a self-administered method to another method, such as telephone administration, in which the questions are to be read by the interviewer.

Example How many glasses (8 oz) of milk (whole, 2%, or skim milk) did you drink yesterday?

Comment It is clear *what* to read (the parenthetical parts are important), but it is unclear *how* to read it. The parts in parentheses can easily be read silently, and would be fine for a self-administered questionnaire. However, if read by an interviewer, the question needs to be rephrased as “*How many 8 ounce glasses of whole, two-percent, or skim milk did you drink yesterday?*”

- ✓ *Again, it cannot be stressed enough that questions that LOOK perfectly fine when read silently may produce severe problems when read out loud over the telephone. So a good check on reading problems is to actually read the question out loud.*

STEP 2 - INSTRUCTIONS: Look for problems with any introductions, instructions, or explanations from the *respondent's* point of view.

- ✓ *Note that a survey question often includes information other than a series of words with a question mark at the end. Here, we are focusing on such instructions or introductory statements that are intended to guide the respondent in knowing how to answer.*

Problem Type 2a - CONFLICTING OR INACCURATE INSTRUCTIONS, introductions, or explanations.

- *Circle YES for 2a if an instruction, introduction, or explanation contains conflicting information, or conflicts with the question.*

Example 1 The next questions are about the claims process involved with [Health Plan Name]. How would you rate the range of services covered by [Health Plan Name]?

Comment Here, “claims process” conflicts with “range of services.” It would be better to simply open with “*The next questions are about [Health Plan Name]*”

Example 2 The next questions are about arthritis. Do you have some form of arthritis, gout, bursitis, tendinitis, or lupus?

Comment The instruction concerns only “arthritis,” whereas the question asks about a number of items that will not be recognized by most respondents as types of arthritis. The question would be clearer without the introduction.

Problem Type 2b - COMPLICATED INSTRUCTIONS, introductions, or explanations.

STEP 2 - INSTRUCTIONS (continued)

- *Circle YES for 2b if the question has extensive instructions that may be difficult for respondents to follow.*

Example Behaviors associated with having the AIDS virus include male homosexual contact, injecting illegal drugs, and sex with multiple partners or a person with any of these risks. In terms of your own risk, what would you say your chances are of having the AIDS virus?

Comment Respondents generally find it difficult to remember a set of complicated instructions. Moreover, attempting to teach respondents about risk within the question is most likely misguided. If people do not know these things, one sentence in a questionnaire will be unlikely to inform them. It would probably be more effective to assess knowledge by asking several questions about factors that influence HIV/AIDS risk before asking about degree of AIDS risk.

STEP 3 - CLARITY: Identify problems related to communicating the *intent or meaning* of the question to the respondent.

Problem Type 3a - WORDING: The question is lengthy, awkward, ungrammatical, or contains complicated syntax.

- *Circle YES for 3a if the question contains a large amount of text or uses complex syntax, or the wording could be made more “natural.”*

Example 1 Which of the following best describes whether you have a smoke alarm in your home? You own a smoke alarm, and it is installed and working; you own a smoke alarm, but it is broken or not installed; you own a smoke alarm but the battery is missing; you don’t own a smoke alarm because it is too expensive; you don’t own a smoke alarm because you don’t think it is necessary; or you don’t own a smoke alarm for some other reason?

Comment The problem is self-evident. A good way to identify questions that are excessive in length is to read them out loud, especially to another person. *Again, remember especially that telephone administration puts a severe limit on question length.*

Example 2 What are the disabilities or health problems of this person?

Comment It would be better to ask *“What disabilities or health problems does this person have?”*

- ✓ *This problem type is similar to 2b (Complicated Instructions), but is intended to be more general. Long, convoluted questions should get “picked up” by either of 2b or 3a.*

STEP 3 - CLARITY (continued)

Problem Type 3b - TECHNICAL TERMS are undefined, unclear, or complex.³

- *Circle YES for 3b if the question contains specific technical terms that are undefined or for which simpler alternatives exist.*

Example What kind of doctor treats your diabetes: A general or family practitioner, an internal medicine doctor, a diabetologist, or someone else?

Comment “Diabetologist” is better conveyed as “a specialist who deals with diabetes”; “practitioner” may be better communicated as “doctor.”

Examples Technical terms that could be either replaced or explained:

Dilated eye exam

Digital rectal exam

Retinopathy

Extremity

Pneumococcal vaccination

Neurological problems

COPD

DUI

- ✓ *Here is another situation in which we need to consider the mode of interview. If it is a telephone interview, remember that complex, multisyllabic words that are passable when read in print often are difficult to make out, or are misheard, when read over the telephone.*

³ Here we are concerned with terms that are part of the question, as defined earlier, and are *read to respondents*. Technical terms contained in response categories seen *only by the interviewer* are addressed in Step 7.

STEP 3 - CLARITY (continued)

Problem Type 3c - VAGUE: The question is vague because there are multiple ways in which to interpret it, or to determine what is to be included and excluded.

- ✓ *This involves a huge category of problems. Typically, the problem is not with particularly complex or hard-to-understand terms, but with the entire question; the words each make sense, but strung together, they ask a question that is vague, as in the following ways:*
- *Circle YES for 3c if there are two (or more) possible alternative interpretations and it is unclear which is meant.*

Example 1 Have you had your blood tested for the AIDS virus?

Comment It is unclear whether this means “Did I take the initiative in deciding to have my blood tested?” versus “Was it tested as part of any type of blood test?” Sometimes respondents will say that “I needed it tested for my job—but I didn’t go out of my way to have it done.” If the issue of interest is the act of testing, simply ask “*As far as you know, has your blood ever been tested for the AIDS virus?*”

Example 2 Do you think that diabetes can cause problems with your kidneys?

Comment When asked of diabetics, it may not be clear whether this means (a) in general, or (b) does it cause problems for me. If the former is intended, rephrase: “Do you think that diabetes can cause kidney problems?”

STEP 3 - CLARITY (continued)

- ***Circle YES for 3c if the question contains undefined or unclear common terms⁴***

Many common terms are exceedingly vague when used in survey questions. Even a “normal” question, in plain English, with no complicated words, can cause serious interpretation problems.

Example 1 Do you have a car?

Comment *You:* Who is “you” — me, or anyone in the household?

Have: What does this mean — own? lease?

Car: Does this include pickup truck? Van?

It is because of these problems that survey questions must be constructed more carefully. An equivalent might be: *“Does anyone in your household now own or lease a car, truck, or other type of motor vehicle?”*

Example 2 Are there any guns located in your house?

Comment What type of gun? Does a BB gun count? Where in the house—does the garage count? What if someone is out hunting, as we speak?

Example 3 Does your local health department provide any public health services?

Comment What is a “public health service”? Will members of the public have any idea what we mean? The question needs to either provide a definition, or else ask separately about a range of specific services.

⁴ Again, we are concerned here with terms that are read to respondents. Terms contained in response categories seen only by the interviewer are addressed in Step 7.

STEP 3 - CLARITY (continued)

- **Circle YES for 3c if it is unclear what is to be included and excluded from the question.**

Example 1 How often do you take part in community organizations, meetings, or other activities involving Hispanic people or culture?

Comment What is to be included here? If I have a meeting at work with two people who happen to be Hispanic, does that count? For this question to work as it is (probably) intended, it would need to ask specifically about *“activities that focus on Hispanic culture or people of Hispanic origin.”*

Example 2 In the past 12 months, have you talked to a doctor or other health professional?

Comment Do phone calls to make appointments count? Do visits for children count? What counts as a “health professional”? Does a visit to an acupuncturist count? To be thorough, the question might ask about a series of health professionals. At the least, it can be improved by indicating what to include or exclude (by adding, for example *“Include phone conversations, except if these were only to make appointments”*).

- **Circle YES for 3c if it is unclear what “frame of reference” the respondent is supposed to adopt.** This problem is often in evidence if a typical reaction might be “compared to what?” or “compared to whom?”

Example How much would you say you know about Lyme disease? A lot, some, a little, or nothing?

Comment This can be difficult to answer because the respondent does not really know to whom they should compare themselves. Although I may have heard of Lyme disease, know that it comes from deer ticks, and know some of the symptoms, that is not a lot compared to, for example, a medical expert. Also, it is premature to ask a detailed question before establishing that the question is relevant. It may be better to first ask: *“Have you ever heard of Lyme disease?”*

STEP 3 - CLARITY (continued)

- **Circle YES for 3c if there is simply not enough information given to prompt a meaningful answer.**

Example Would you support an increase in cigarette taxes if the additional revenue was spent on community cancer prevention and control programs?

Comment Respondents who smoke, and who are making a serious attempt to answer the question, may object that it does not contain sufficient information. If the increase were a nickel a pack, that may be different than if it were a dollar a pack. The amount needs to be specified. Often, a question having this type of problem naturally elicits a response of “it depends...” (on additional information that is not supplied).

- ✓ ***Distinguishing Problem Types 3b (TECHNICAL TERMS) and 3c (VAGUE): 3b involves particular technical terms that can be picked out as too complex for the target population.. If there are no such technical terms, but clarity is difficult because of general vagueness of relatively common terms, then choose 3c instead of 3b.***

STEP 3 - CLARITY (continued)

Problem Type 3d - REFERENCE PERIODS are missing, not well specified, or are in conflict.

For questions that refer to some time in the past, responses are usually more reliable and precise when they are tied to a well-defined time period.

- **Circle YES for 3d when the time period asked about is not clear.**

Example 1 Before your last pregnancy, had you stopped using all methods of birth control?

Comment How long before pregnancy? Do we mean days, months, years, or something else? Depending on the reference period of interest, the question could instead start with: *“During the 3 months before that pregnancy...”*

Example 2 How many glasses of low-fat or skim milk per day do you usually drink?

Comment No reference period is indicated. Is this in the past week, past month, past year, or some other period of time?

Example 3 How many times have you visited a dentist during the past year?

Comment The term “past year” is commonly misunderstood. This may mean “past calendar year,” “since January 1,” or “since 365 days ago.” If the latter is intended, it makes more sense to say “in the past 12 months.” If we are very concerned about this being exactly 12 months, it also helps to indicate the date (...that is, *“since May 20, 1999”*).

Example 4 Have you ever been examined within the past 12 months by a doctor for skin cancer?

Comment In this case, the term “ever” implies a lifetime reference period. If the desired reference period is the past 12 months, then “ever” should be removed.

STEP 4 - ASSUMPTIONS: Determine if there are problems with assumptions made or the underlying logic.

Problem Type 4a - INAPPROPRIATE ASSUMPTIONS are made about the respondent or his/her living situation.

- ✓ *These are not primarily problems related to the respondent's understanding the question but, rather, relate to the appropriateness of the question for that respondent.*
- *Circle YES for 4a if the question contains (often subtle) logical problems, such as those in these examples:*

Example 1 How often do you usually select low-salt foods at the grocery store—Most of the time, sometimes, rarely, or never?

Comment We do not know if the person even goes to the grocery store, so it is hard to interpret a “never” response. To provide the information desired, it is necessary to first ask how often the person shops for food, and if it is never, to skip him or her from the follow-up question.

Example 2 Have you had (medical test X) done?

IF YES:

When you got your most recent test result, was it positive or negative?

Comment We have not established that the person received the results of the test. This needs to be asked as a separate question (“*Did you receive the results of that test?*”), or at least to include a “did not receive the results” response category.

STEP 4 - ASSUMPTIONS (continued)

Example 3 How confident are you in your doctor's ability to help you with your health problems?

Comment This sounds simple enough, but even assuming we have established already that the person has one main doctor who he/she has visited recently, it ignores the fact that some people may go to that doctor only for screening and general checkups and may not have any health problems. Again, this would serve best as a follow-up to an initial question, such as: *"In the past 12 months, have you visited that doctor to get treatment for any health problem, or only for general care and routine checkups?"*

Example 4 Have you ever had an amputation?

IF YES: What extremity was amputated?

- ☐ *Toe*
- ☐ *Foot*
- ☐ *Leg*
- ☐ *Arm*
- ☐ *Finger*

Comment It is possible that may have been multiple amputations. If a questionnaire data coding system is set up to allow only one response, this will cause problems.

STEP 4 - ASSUMPTIONS (continued)

Problem Type 4b - ASSUMES CONSTANT BEHAVIOR: The question inappropriately assumes a constant pattern of behavior or experience for situations that in fact vary.

- *Circle YES for 4b if the behavior or experience is typically irregular rather than constant in nature, and the question forces an average or typical value that may be difficult or not meaningful. If the answer is likely to be “it varies...,” then this problem exists.*

Example 1 How often does your arthritis prevent you from doing your usual work or taking part in social activities? Would you say every day, almost every day, once a week, occasionally, or never?

Comment Note that flare-ups are a common characteristic of many chronic medical conditions. Respondents tend to say that there are weeks when they cannot do these things at all, and then it gets better again. Although this problem has not been solved by questionnaire designers, it might help to first ask a question about the regularity of the experience.

Example 2 When you go out in the sun for an hour or more, how often do you wear sunscreen or protective clothing?

Comment In the middle of summer I may be very likely to, but in February, this is extremely unlikely. How should I give an overall judgment? Specifying the season would help somewhat.

- ✓ ***Distinguishing Between Problem Types 4a (Inappropriate Assumptions) and 4b (Assumes Constant Behavior):** Type 4b, like 4a, involves an inappropriate assumption. The difference is that in 4b the assumption relates not to whether something is true for the respondent (it may well be, to some extent), but rather, whether it is true in the “static” sense that is implied. If the problem relates to variation in some attribute or behavior that the question does not take account of, then select 4b.*

STEP 4 - ASSUMPTIONS (continued)

Problem Type 4c - DOUBLE-BARRELED question that contains multiple implicit questions.

- *Circle YES for 4c if there are two or more questions in one.*

Example 1 Are you covered by Medicaid or any type of dental benefits plan?

Comment Does this mean a Medicaid dental plan? Or any type of Medicaid? This needs to be divided into two separate questions.

Example 2 Do you think that ministers, politicians, and other community leaders should speak out against cigarettes and tobacco?

Comment This one is actually triple-barreled. One could think that politicians and other community leaders should, but that ministers should not. These could instead be asked about separately (as in a “stem-based” question):

Do you think each of the following should speak out against cigarettes and tobacco...

Ministers?

Politicians?

Other community leaders?

- ✓ *Note that some problems may be fixed, yet others remain. Here, we have solved the “triple-barreled” problem, but this does nothing to address a basic vagueness that seems to exist with this question (see Problem Type 3c). Remember to think through different aspects of the question and to consider that improving them may involve multiple types of alterations.*

STEP 5 - KNOWLEDGE/MEMORY: Check whether respondents are likely to *not know* or have trouble *remembering* information.

Problem Type 5a - KNOWLEDGE: The respondent is *unlikely to know* the answer.

Circle YES for 5a in several situations. First:

- *The question is factual in nature, and it is likely that the respondent simply does not have the knowledge necessary to answer the question, and may never have.*

Note that this problem is sometimes caused by asking for an excessive level of detail:

Example 1 What kind of calcium pills do you take? (Mark those mentioned)

calcium carbonate (generic)
Citracal
caltrate
calcium gluconate
Biocal
calcium lactate
Tums
Tums E-X
Oscal 500
vitamin/mineral supplement
other

Comment People who regularly take pills often have no idea of precisely what type of pills these are. Solutions may involve reducing the level of specificity, or even re-thinking whether the question can be posed. Logically, if people do not know the answer, we should not be asking the question.

STEP 5 - KNOWLEDGE/MEMORY (continued)

Example 2 Thinking about your most recent mammogram, how much did it cost, regardless of who paid for it? Include just the cost of the x-ray itself and not any fee charged by the doctor at the x-ray facility, or the cost for an office visit where the test was ordered.

Comment Respondents in a health maintenance organization (HMO) who simply make a co-payment may have no idea how much the mammogram cost. Also, even those who pay out-of-pocket, or according to a fee-for-service model, may have no way of disentangling the cost of the test from the cost of the office visit.

Example 3 Have you been examined within the past year by a doctor, nurse, or other health professional for oral or mouth cancer?

Comment People often are not aware of what a check for oral or mouth cancer consists of, and especially, whether their dentist has done one.

- *Finally, circle YES for 5a if there may be a problem that involve a projection or hypothetical situation.*

Example How would you rate your own chances of getting Lyme disease in the coming year—high, medium, low, or none?

Comment Respondents are often unable to make such judgments. It may be better to simply ask about behaviors which we know increase the chances of getting Lyme disease, or about knowledge concerning how Lyme disease is contracted.

STEP 5 - KNOWLEDGE/MEMORY (continued)

Problem Category 5b - An ATTITUDE that is asked about may not exist.

- **Circle YES for problem category 5b for *attitudinal questions* that ask about issues the respondent may have no opinion on, or given any thought to.**

Example 1 Do you think that laws restricting the sale of tobacco products to minors have been adequately enforced?

Comment This may be very difficult for 65-year-old respondent who does not know any minors, let alone any who smokes. At the least, a question like this needs to explicitly allow respondents to indicate that they have no opinion on the issue (here, by adding: “...*or are you not aware of how well these laws have been enforced?*”).

Example 2 Do you think that current regulations for mammography equipment and personnel are adequate to insure the safety of women?

Comment This is clearly well beyond the range of knowledge that exists in most population respondent groups.

Example 3 In general, would you say that your State’s Congressmen are doing a good job, or a bad job?

Comment Respondents will happily answer this question, even in the absence of knowing who their congressmen are, or anything in particular that they have done. At the least, if there is the likelihood that people may reasonably be expected not to have a true opinion, then they should be allowed to express this, as in “... *or do you have no opinion?*”

STEP 5 - KNOWLEDGE/MEMORY (continued)

Problem Type 5c - RECALL failure.

- ***Circle YES for 5c when there is a good chance that a significant segment of the population will no longer remember what we may be interested in asking them.***

Even if a respondent had learned the relevant information at some point, he/she may no longer remember it because the time interval (the reference period) is too long, or the events are routine or non-memorable. Clearly, this may be a difficult judgment to make because we cannot always tell what respondents will know. However, these are the types of questions that illustrate this problem:

Example 1 How many mammograms have you had in the past 10 years?

Comment An exact count for something like this can be difficult. It would be better to present a series of response category ranges (“*Would you say none, one, one to five, or more than five?*”), to make the task easier.

Example 2 During the past 12 months, how many days did illnesses or injury keep you from working?

Comment It is very difficult to both (a) remember all occurrences in the past 12 months, and (b) remember to exclude occurrences previous to that. Again, providing response category ranges would facilitate this cognitive task.

✓ ***How will we be able to tell what respondents will recall?*** In assessing whether respondents will likely know the answer to the question, a good test is to ask yourself, colleagues, and family members the question. If they cannot remember an answer, other respondents are also likely to have problems.

✓ ***Distinguishing Between Problem Types 5c (RECALL) and 5a (KNOWLEDGE):*** How can we distinguish between the case in which the respondent never knew the answer (5a) from when he/she did at one time, but simply cannot remember (5c)? Often, this must be a judgment call, depending on what assumptions we are willing to make about what people are likely to know or now know. One way to think about this issue is to

STEP 5 - KNOWLEDGE/MEMORY (continued)

consider whether putting a few “cues” or reminders in the question will help or not—logically, it cannot for 5a problems, but may for those covered by 5c.

Problem Type 5d - COMPUTATION or calculation problem.

- ***Circle YES for 5d if the question simply presents a task that is complex in terms of computational difficulty, as this overloads the person’s working memory.***

Example In a typical workweek, about what proportion of your time is spent on each of the following activities?

___ Walking?
___ Sitting?
___ Standing?

Comment Answering this question can be very difficult: The respondent must consider the total number of hours worked, the total number of hours devoted to each activity, and then express these as a ratio. Further, without knowing up front how many items in the list, the respondent will have no idea how to allocate these estimates so that they will sum to a meaningful total. It would be better to instead ask about the number of hours per day the person spends on each activity, and then to compute proportions in the analysis.

- ✓ *This is similar to 5c (Recall Failure), except that the fundamental problem is not that the person cannot remember how often he or she engages in each activity. Rather, he or she is unable to add up the various bits and pieces of information in the way that the question demands.*

STEP 6 - SENSITIVITY/BIAS: Assess questions for sensitive nature or wording, and for bias.

Problem Type 6a - SENSITIVE CONTENT: The question is on a topic that people will generally be uncomfortable talking about.

- ✓ *Clearly, questions on sexual behavior, drug use, or other illegal activities may produce bad data, or may simply threaten the rapport developed in the interview between the interviewer and the respondent. Often, it is necessary to provide an introduction that explains why a series of sensitive questions needs to be asked. Consider also whether it makes sense to ask sensitive questions over the telephone, when the interviewer cannot even be seen.*

- ***Circle YES for 6a if the question asks about sensitive issues or behaviors:***

Example How many different people have you had sex with in the past 12 months?

Comment Would a person whose spouse might possibly overhear on another extension be willing to give a response other than “one”? Such a question may not be appropriate for a telephone survey, unless special procedures (such as use of touch-tone keying to enter the response) are used.

Problem Type 6b - SENSITIVE WORDING.

- **Given that the question may be generally sensitive (as defined in 6a), Circle YES for 6b for questions that contain terms that are emotionally loaded, offensive, or that can be stated more “gently.”**

Example In the past 12 months, have you driven when you were drunk?

Comment The term *drunk* has negative connotations. It may be better to soften this, as in “...when you may have had too much to drink.” It might be objected that the latter is too vague, but *drunk* is not much better because respondents will not know whether they were legally intoxicated, or have any other way of better interpreting the intended concept.

STEP 6 - SENSITIVITY/BIAS (continued)

Problem Type 6c - A SOCIALLY ACCEPTABLE response is implied.

- ***Circle YES for 6c if the question contains phrasing or response categories that imply that one answer should be chosen because it is preferable to other alternatives.***

Example 1 Did you use condoms as protection to prevent disease?

Comment This suggests only one use (disease prevention), and it is very easy to say “yes,” even if the real reason was something else (e.g., avoiding pregnancy). If there is a small list of likely candidate reasons, it is best to read them all: “*Did you use condoms to avoid pregnancy, to prevent disease, or both?*”

Example 2 Do you agree that cigarette smoking can cause cancer?

Comment It would be much less biased to rephrase, as in : “*For the following statements, tell me whether you agree, disagree, or have no opinion. (1) Cigarette smoking can cause cancer.*”

Example 3 On an average day, for about how many hours do you watch television? Would you say none, between 1 and 2 hours, 2 to 4 hours, or more than 4 hours?

Comment A great deal of research has shown that the category ranges provided by behavior frequency questions such as this tend to guide the respondent’s choices—changing the nature of these ranges markedly alters response distributions, when certain responses may be seen as more desirable than others. So, especially where there may be some social desirability to the behavior, it is better to ask this simply as an open-ended question and code the response directly.

- ✓ ***Note that for quantitative questions like this one, open-ended formats tend to work. For questions with qualitative response categories, open-ended formats can be problematic (see Step 7, Problem Type 7a).***

STEP 7 - **RESPONSE CATEGORIES:** Assess the adequacy of the range of responses to be recorded.

- ✓ *Problems with response categories will sometimes overlap with problems involving question intent/clarity covered in Step 3. One way of distinguishing these is to note that the problems covered in Step 3 involve what is read to respondents, whereas the problems in Step 7 often involve what is not read.*

Problem Type 7a - OPEN-ENDED QUESTION that is inappropriate or difficult.

- *For open-ended questions (those for which the response categories are not read to respondent) circle YES for 7a when:*

Respondents will have trouble providing an unguided response.

OR

The answers given by respondents are likely to be difficult for the interviewer to code.

- ✓ *There are two general types of “open-ended” questions that may cause difficulty:*

Open-ended response with verbatim coding: One case is in which the question asks for a verbal response that must be recorded in words by the interviewer (e.g., “*Why are you not covered by health insurance?*”). Here, the problem may be either for the respondent (who simply does not know what the range of appropriate responses are), or the interviewer (who may have difficulty entering a long open-ended response). In this case, it may be better to “close” the question and to provide the respondent with a number of clear alternative to choose from.

Open-ended response with precoded categories: The second type of open-ended question that is problematic is the “precoded” question, which asks an open-ended question of the respondent (again, “*Why are you not covered by health insurance?*”), but for which a number of preprinted categories are provided for the interviewer to use, by selecting the one that is closest to the respondent’s answer (e.g., “*became ineligible because of age or leaving school*”). Again, the respondent may have problems providing an acceptable response. Further, the interviewer’s task is complicated because of the need to match what the respondent has said with the list of categories, which may be very long, or may simply not provide an easy match. So, look especially for cases in which the answers likely to be given will not match “precodes,” where precodes are numerous.

STEP 7 - RESPONSE CATEGORIES (continued)

Example 1 What prompted you to have your most recent mammogram?

(Mark those mentioned)

- ☐ Doctor recommended
- ☐ Other health professional recommended
- ☐ Part of regular checkup
- ☐ Friend encouraged
- ☐ Awareness of guidelines/need
- ☐ Breast problems
- ☐ Advertisement
- ☐ Other

Comment Respondents will have no way of knowing what the intended range of acceptable answers are. Interviewers will also have problems coding the types of answers that respondents tend to give (“Well, it was time to get one done...”; “I was told to”; “I wanted to see if there was a problem”). It is better to let respondents know the acceptable responses by reading these, if the list is not too long. If the list is long, and covers more than one dimension of an issue (such as *who* indicated the test should be done versus *why* it should be done), then this can be “decomposed” into multiple questions that are more specific. For example, it might be better to divide this example into two questions.

A) Who recommended that you have your most recent mammogram—a doctor, another type of health professional, someone else you know, or did you decide on your own?

B) Did you receive this mammogram as part of a regular checkup, because of a breast problem, or for some other reason?

STEP 7 - RESPONSE CATEGORIES (continued)

Example 2 People go to the dentist for many reasons. What was the main reason for your last visit?

- ☐ Emergency
- ☐ Periodic checkup
- ☐ Filling
- ☐ Cleaning
- ☐ Extraction
- ☐ Orthodontics
- ☐ Gum treatment
- ☐ Denture work
- ☐ Crown or bridge

Comment Again, the respondent does not see the available choices. Therefore, he or she may simply say “checkup.” The interviewer has no way of knowing whether this is periodic (the respondent may not have been to the dentist in years, so we cannot assume the regularity of the behavior. At the least, the term *periodic* should be deleted.

Problem Type 7b - MISMATCH between question and answer categories.

- ***Circle YES for 7b if the answers presented or implied by the question itself conflict with the response categories:***

Example 1 Since you’ve lived in your current residence, have any special locks been installed on the doors of your home?

- ☐ Yes
- ☐ No
- ☐ No opinion

Comment Note that the response categories implied do not match those that are given to the interviewer to use. This is not, in fact, an opinion question (it is either true or it is not, or the respondent does not know). So, this question should use *Don’t know* instead of *No opinion*.

STEP 7 - RESPONSE CATEGORIES (continued)

Example 2 Thinking about your last pregnancy—Did you become pregnant sooner that you wanted, later than you wanted, or at the time you wanted to?

- ☐ Sooner
- ☐ Later
- ☐ At the time
- ☐ Didn't want pregnancy

Comment The last category is provided to the interviewer in case it is volunteered, but the respondent does not know this and may get confused and not know to say this. The question should include the phrase “...or didn't you want to get pregnant at all?”

Example 3 When was your diabetes diagnosed?

- ☐ Within the past 12 months
- ☐ Within the past 5 years
- ☐ More than 5 years ago

Comment The respondent does not know that the interviewer will be marking only a wide range and so may struggle to remember an exact date, when this is totally unnecessary. It is important to provide, in the question, information about the level of specificity required in the answer: “When was your diabetes diagnosed—Was it within the past 12 months, between 1 and 5 years ago, or more than 5 years ago?”

✓ *It is tempting to class the previous example as a type of memory problem (see Step 5). However, the root of the problem is not difficulty in the recall process (remembering whether it was the past 12 month, 5 years, or earlier may actually be very easy), but rather the failure of the question to make clear what the relevant recall task is, with respect to the requirements of the response categories.*

STEP 7 - RESPONSE CATEGORIES (continued)

Example 4 Do you plan to have a mammogram in the future?

- ☐ Yes - next 12 months
- ☐ Yes - next 24 months
- ☐ No

Comment This is asked as a “yes/no” question, whereas the interviewer is intended to determine *when* the respondent next intends to have a mammogram. Clearly, the latter concept needs to be asked as a follow-up question: *IF YES: “When do you plan to have your next mammogram—in the next 12 months, between 1 and 2 years from now, or more than 2 years from now?”*

Problem Type 7c - TECHNICAL TERMS are undefined, unclear, or complex.

- *For examples, see Step 3, Problem 3b, “Question contains undefined, unclear, or complex technical terms.” Note that this problem may have already been “picked up” there if the response categories are read to the respondent. If not, and the question contains response categories with undefined or vague technical terms, circle YES for 7c.*

Again, here are examples of terms that appear in response categories that are not typically well-understood by survey respondents:

Dilated eye exam

Digital rectal exam

Retinopathy

Extremity

Pneumococcal vaccination

Neurological problems

COPD

DUI

- ✓ *Remember that it does not really make a big difference whether you “pick up” this problem when looking at “the question” (3c) or when looking at the “response categories” (7c), as long as you note it.*

STEP 7 - RESPONSE CATEGORIES (continued)

Problem Type 7d - VAGUE response categories.

STEP 7 - RESPONSE CATEGORIES (continued)

- See Step 3, Problem 3c, Vague, “*There are multiple ways to interpret the question.*” Again, note that this problem may have already been detected there, if the response categories are read by the interviewer and are therefore “part of the question.” For cases where the response categories are separate from the question, but display that same type of vagueness, circle YES for 7d.

Example In the past 30 days, how often have you had a headache? [ENTER
RESPONSE GIVEN BY RESPONDENT]

__ Never
__ Seldom
__ Occasionally
__ Frequently

Comment Besides not working very well as an open-ended question (see Problem Type 7a), there is another problem: People tend to vary with respect to their interpretation of vague terms, such as “seldom” and “occasionally.” One person may consider 3 or 4 headaches as “seldom,” another “occasionally.” Therefore, it would be better to ask for the quantitative frequency with which headaches have occurred:

In the past 30 days, how often have you had a headache? Would you say every day, between 3 and 6 times a week, once or twice a week, or less than once a week?

STEP 7 - RESPONSE CATEGORIES (continued)

Problem Type 7e - OVERLAPPING response categories.

- *Circle YES for 7e when the response categories are NOT mutually exclusive.*

Example ☐ Strongly agree
 ☐ Agree
 ☐ Disagree
 ☐ Strongly disagree

Comment If someone agrees strongly, they also agree. It would be better to add *somewhat* to the second and third categories here.

Problem Type 7f - MISSING response categories.

- *Circle YES for 7f when there are “gaps” between response categories:*

Example 1 ☐ All of the time
 ☐ Most of the time
 ☐ Seldom
 ☐ Never

Comment Someone who engages in the behavior “sometimes” will have trouble finding a response category that fits. So, “*some of the time*” should be added. Again, it would be better not to use words like “seldom.” “Always, More than half the time, Half the time, Less than half the time, Never” are good substitutes.

Example 2 Do you consider yourself to be overweight, underweight, or about average?

Comment Some people may not fit any of the given categories. A National Football League lineman (or a horse race jockey) might consider himself to be none of these things; he is at a desirable weight, but it is not anywhere near average. Instead, use “*overweight, underweight, or about the right weight?*”

STEP 7 - RESPONSE CATEGORIES (continued)

Problem Type 7g - ILLOGICAL ORDER of response categories.

- *Circle YES for 7g when the categories that are read to respondents, or presented for the interviewer to select, are out of order.*

Example Over the past 12 months, about how many sex partners did you have? Would you say only one, two or three, between four and ten, more than ten, or none?

Comment Because this is an ordered list that increases in magnitude, it sounds strange to place “none” at the end.

STEP 8 - OTHER: Look for problems not identified in Steps 1-7.

QAS-99 Steps 1 to 7 will likely identify the majority of common problems that exist in survey questions. A careful reviewer, however, may be able to detect additional problems that sometimes crop up. Although the QAS-99 has no specific problem type codes for these, here are a couple of things to look for:

- ✓ *Does the question fulfill the objectives?* In particular, consider whether the question makes sense to ask in the first place. Although a complete discussion of the ways in which survey questions serve to fulfill *data objectives* is beyond the scope of this manual, it behooves the designer to always keep in mind the purpose of asking the question, with respect to the type of data that will be of value. A few such checks would include the following:
 - If a question is likely to be answered the same way by almost all respondents, it will have no diagnostic value.
 - If a question is intended to be part of a ratio measure (such as a rate), make sure that questions that provide numerator and denominator data are asked, and are asked for the same reference period and of the appropriate respondents.
 - If a question involves a level of measurement (e.g., binary YES-NO) that does not match the analysis objective (e.g., measurement of a continuous distribution of some attribute), it will not function as intended.
- ✓ *Does the question ordering work?* The focus of the QAS-99 is the individual question as it is placed under our “microscope.” As such, we do not explicitly consider the relationships that may exist *between* questions. However, a questionnaire is in a real sense greater than the sum of its parts; questions that are asked earlier may effect those that come later.

In general, if you do uncover problems not otherwise described by the previous QAS-99 steps, circle YES for 8, and enter a note indicating the nature of the problem found.