
A Guide to SCCM Surveys

Prepared by the SCCM Research Committee

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Society of
Critical Care Medicine



The Intensive Care Professionals

Determine Your SCCM Survey Project Objective

- A SCCM survey is a “research project”
- Develop a clear overarching purpose for the survey -
Be as specific as possible
- Develop clear objectives for conducting the survey, in
the form of Research Questions or Specific Aims
- Hypotheses and outcomes should be directly related
to your research questions

Determine your SCCM Survey Sample Size

- Provide an ideal sample size
 - How was the ideal sample size determined?
 - Was a Power Analysis program used to determine sample size?
 - Provide details (beta, alpha, effect size)

Determine Your SCCM Survey Sampling Frame (Targeting Your Population)

- Identify the target population
 - All SCCM members?
 - Subgroups (Nurses, pharmacists, specific physician groups, respiratory therapists)
- Can the results be generalized?
 - Will your sample be large/diverse enough to determine implications from results?
- Maximizing the response rate
 - What response rate is needed to be successful?
 - If your response rate is smaller than expected, can you use data received to draw conclusions?

SCCM Surveys Require Institutional Review Board (IRB) Oversight

- Surveys require IRB oversight
 - Your IRB may choose to do one of the following:
 - “Approve” the study
 - Give the study “exempt” status; however, if you make protocol changes, you must send the amendment to your IRB for review
 - Give the study “closed” status; no further IRB review is necessary
- Surveys submitted to SCCM must be accompanied by an IRB letter indicating the status of the IRB review

Pre-Survey Preparation

- Background for Survey Items

- Pre-survey preparation
 - Literature review
 - What is known about your topic /sample?
 - Is a survey using SCCM member responses the best method to answer research questions?
 - Are published results from the literature relevant/ useful in creating survey questions?
 - Interview/focus group responses as prep for survey question/response set development
 - Grouping of questions into domains

Pre-Survey Preparation

- Survey Item Generation

- Develop domains/factors (as needed)
 - Determine response format for each question
 - Minimize fill-in-the-blank when possible
 - Ensure response set options:
 - Are unique and do not overlap others
 - Cover the full spectrum of options – exhaust all answer options to minimize blanks (missing data) by participants
- A minimum of 1 item per hypothesis variable
- 3 items per variable are recommended

Pre-Survey Preparation

-Survey Item Generation

-Preparing Item Stems

- Be specific, brief
 - Avoid complex, biased or long words
- Use simple language and bullets
- Avoid abbreviations (have different meanings to different people!!)
- May need more than 1 instruction area if your survey format changes
- Underline or italicize words that are key to understanding instructions

Pre-Survey Preparation

-Survey Item Generation

-Preparing Item Stems

- Avoid Biased Wording in the Stem
 - Biased: Do you agree with the statement of our beloved mentor and founder of our organization, Dr. XXX ...

Pre-Survey Preparation

- Develop Response Set Format

- Response formats
 - Nominal (list of exclusive answers)
 - Likert-type scale
 - Continuous responses
 - Analog scale, anchors must be opposites
 - Consider “I do not know” & “N/A” options
- More variability in response options is good

Pre-Survey Preparation

-Reduce Items to Minimum Needed

- Eliminate redundant questions within domains
- Target less than 25 questions total for survey
- Avoid double-barreled/compound questions
- Test survey length in a pilot study
- Eliminate or revise non-relevant, relevant but non-important, or unclear survey items
 - Expert feedback
 - Interviews/focus groups

Pre-Survey Preparation

-Avoid Item Pitfalls

- Avoid jargon, abbreviations
 - Do you believe RTs, MDs or RNs should report PFTs in COPD?
- Avoid compound statements (“double barrel”)
 - Does reading improve your understanding and increase your ability to perform intubations?
- Avoid loaded questions
 - Correct or not: Increasing staffing ratio will save thousands of lives lost through unnecessary drug errors?
- Avoid double negatives
 - Does not using a PA line lead to less infection?

Build Your Survey

- Develop an Electronic cover letter to Respondents
- Be sure it is Organized
- Ensure it is easy to access and move through
- Use the minimum number of items to achieve your goals, and provide for validity and reliability
- Use of “click” buttons

Build Your Survey

--Cover letter

- First impressions are important!
- When creating the cover letter consider including the following headers:
 - Background
 - Investigator contact information
 - e-mail and phone number
 - Procedures; include how long it will take to complete
 - Risks (i.e., fatigue)
 - Benefits
 - Confidentiality
 - Voluntary nature

Evaluate Your Survey Before Administering

- Does your instrument measure what you want it to measure?
- Does the instrument reflect your conceptual definition of the variable?
- Is the readability level of the instrument appropriate for your population?
- What is the process for obtaining, administering, and scoring the instrument?
- What skills are required to administer the instrument?

- Pre Test

- Pre-testing refers to an evaluation of individual questions
- To evaluate the clarity and interpretation of individual questions
- Each question should be discussed with either written/oral feedback or interviews with experts
- Experts may propose alternatives

- Pilot Test

- Pilot testing refers to performance of entire survey
- Evaluates relevance, flow and arrangement
- Important to test on respondents who are similar to the intended survey population
 - Evaluate time required to complete the survey
- Does the survey address study objectives?
 - Is the format simple and easy understood?
 - Are items missing or redundant?

Assess Survey Psychometrics (Validity and Reliability)

- **VALIDITY:** Extent to which the instrument measures what it is designed to measure
 - Content validity; face validity
 - Construct validity; criterion validity
- Evidence is obtained from three sources:
 - Literature
 - Representatives of the relevant population
 - Content experts
- Content validity assessment methodology

-Instrument Validity

- Face validity – Does this survey represent the research variable/factor at face value?
 - Does the survey appear to be well balanced? a good survey?
- Content validity - Does the survey measure what it intends to measure?
 - Are all aspects of a topic addressed?
- Construct validity - Are constructs missing that are required to measure a topic?
- Criterion validity - Do responses hold up to a known standard?

-Instrument Validity

- A reliable instrument that is NOT VALID is USELESS
- Always assure content validity (at minimum) of an instrument before obtaining IRB approval to conduct research
 - Without validity, difficult to:
 - Draw conclusions about research results
 - Use your data to make practice decisions
 - Publish results of survey

-Instrument Reliability

- RELIABILITY
- Test –Retest: the instrument's ability to produce the same results with repeated testing
 - Respondents provide similar answers to same questions at different time points
 - Important with longitudinal survey design
- Internal consistency: Measures of the amount of random error in the instrument
 - Similar themes should have similar responses
 - Important with a one-themed survey design

Administering the Survey

- Advance notice
- Provide due date of survey response
- What is your plan for reminders to non-respondents?

-Response Rates

- Required response rate may vary with goals of the project (publications in major journal, preliminary data for grants etc)
- The higher the response rate the more trustworthy are the results
- Reminders - Each reminder increases rate by 30% of initial response
- Shorter surveys improve response rates
- Incentives may or may not improve response rates

Reporting Survey Results

- When reporting survey results, include the:
 - Content validity index score or other validity testing and results
 - Instrument reliability testing and results
 - Access to instrument (paper; electronic; both)
 - Response rate
 - Keep track of the number of subjects asked to participate!

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