

# Are You Changing the World?

-- Surveys can help you know

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Solving problems, guiding decisions – worldwide



# Surveys Surveys Surveys

- Why bother?
- What do you need to know about surveys?
- What is involved in doing a survey?
- How much will it cost?
- What do the results mean?

# Why bother with a survey?

- Investigate what is going on in the world
  - Find out about baseline conditions, perceptions and/or behaviors.
  - Find out if your efforts are making a difference.
  - Quantify outcomes you are trying to achieve.
  - Find out what your program does well. Get input on what needs to change.
  - Test your ideas, approaches and tools.

# Things to think about before starting

- What will you and your stakeholders do with the findings?
  - stakeholders include: CA/P2 customers, funders, the public, critics
- How accurate or robust do you need the results to be?
  - for internal use:
    - feedback on, e.g., field staff or CA products
  - for external stakeholders (e.g., funders and critics):
    - demonstrate difference between participants and non-participants
    - Transparency

Tip: look to others' completed surveys to see if their accuracy is sufficient for your needs

## More things to think about before starting

- Is this a one-time effort or an ongoing information collection?
  - determines the level of investment
- Do you need permission? Do state or federal requirements apply?
  - Paperwork Reduction Act
  - respondent confidentiality
- Who will conduct the survey and analyze results?
  - do they have the necessary expertise?

# Still more things to think about before starting

- Where do surveys go wrong?
  - Not giving every target population member a chance of inclusion (this can create bias in your results)
  - Too big a sample (expense drives response rates down)
  - Too small a sample (information is not representative/accurate)
  - Asking questions that are difficult to understand or answer
  - Not pre-testing
  - Surveying the wrong person

# Types of NEWMOA member surveys

- On-the-spot or mail-back feedback surveys after an intervention
- Follow-up surveys to ascertain longer-term changes
- Randomized sampling and survey of intervention group and control group
  - Dry Cleaners Survey (CT DEP)
  - Garment Care Business Information (CT DEP)
  - Follow-up Survey on Environmentally Preferable and Bio-based Products (CT Hospital Environmental Roundtable)
  - Breathe Easy Follow-up Survey (CT DEP)
  - Reducing Toxic Products in the Home 2004-05 End of Year Survey (CT DEP)
  - Marina Questionnaire (NH DES)

# Getting Started: What decisions do you need to make?

- Goals for data collection effort
- Mode of survey
- Timing
- Sampling frame and sampling plan
- Survey instrument design
  - Questions
  - Question sequence, language level and skip patterns
  - Pre-testing
- Survey administration and data capture
- Data processing and analysis

Document decisions and supporting information in a survey plan



## Decision: Goals for Data Collection Effort

### General:

- Establish baseline performance against which you measure improvements or changes associated with your programs.

### Specific:

- “The EPA and state formal enforcement action information maintained for facilities in the xx data system is 95% accurate.”
- “Participants in our program reported a 46% reduction in chromium containing wastes produced.”
- “Participants in our program were 25% more likely than non-participants to undertake.....”
- One-half of facilities surveyed reported that they undertake metals recovery prior to wastewater discharge.

# Decision: What Does a Randomized Sample Give You

- How many facilities in your population changed their behaviour as a result of your intervention?

<b>Sample Sizes Needed to Determine the True Value, +/- 5%</b>			
<b>Population Size</b>	<b>80% Conf.</b>	<b>90% Conf.</b>	<b>95% Conf.</b>
10	9	10	10
25	18	20	22
50	28	34	37
100	38	50	59
200	46	66	82
250	48	71	90
Odds that your point estimate (+/- 5%) is wrong	<b>1 in 5</b>	<b>1 in 10</b>	<b>1 in 20</b>

- Sample sizes are based on a normal distribution of facilities within the population which cannot be assumed with smaller populations.
- Larger samples are required to detect rare events and analysis of subgroups.
- Non-sampling problems (e.g., poor questions, response errors, low response rate) are often serious sources of error.

## Decision: Mode of Survey

- Modalities of information collection
  - post event feedback form
  - mail
  - internet
  - telephone
  - in-person
- Other means of collecting information:
  - structured interviews
  - focus groups – often seen as cheap alternative. Good for understanding potential breadth of responses and testing alternatives BUT results are not generalizable and not a substitute for a survey.

## Decision: Timing or When to Administer the Survey

- Are there any important dates to consider – business cycle, trade events.
- Try to avoid holidays and summer.
- Are there events or timing that would help with response rate, or acceptance of survey – e.g., announcement at trade event or trade publication.

## Decision: Sampling Frame and Sampling Plan

- Is there a target group/population? This is the *sampling frame*.
  - What's the difference between a **survey** and a **census**
  - Are there subpopulations of interest?
  - Is a control group needed? If so, you may need to stratify the sample (Tip: disproportional stratification requires post-survey weighting – caution needed)
- What is the best way to contact the target audience? (mode of survey comes into play). Tip: piggyback others who are trusted by your target audience.

# Decision: Survey Instrument Design

- Question sequence
  - Start with easy, non-sensitive questions and move to more detailed and sensitive questions
  - Group similar questions together
  - Pace the questioning so there are less taxing questions sprinkled throughout, especially for longer questionnaires
  - Minimize open-ended response questions
- Language level
  - Try for fifth grade language level for public, higher level for professionals
  - Avoid jargon and acronyms
  - Consider impact of English vs. native language
- Skip patterns
  - Skip over questions that have no value to certain groups or make no sense given previous answers

Tip: Borrow questions from well-known, professionally designed surveys when possible.

# Decision: Survey Instrument Design

- Open-ended vs. close-ended questions
  - Open-ended questions are questions to which there is not one definite answer.
    - can identify unexpected responses
    - not leading
    - difficult to summarize and analyze
  - Closed-ended questions have a finite set of answers from which the respondent chooses.
    - easy to process and analyze
    - predetermined responses may introduce bias

# Decision: Survey Instrument Design

## Pre-Testing (Will the survey instrument work?)

- Used to scrub logic, determine if language level is appropriate, assess comprehension, evaluate respondent burden, and ease administration. Use internal testing first and employ the proposed mode (e.g., telephone, hardcopy) of the survey
- Pre-test with members of the target audience
  - Debrief pre-test respondents to find parts of the survey were problematic. Tip: focus groups are sometimes used to pretest instruments for large survey efforts.
- Retest after making revisions to instrument



## Decision: Survey Administration and Data Capture

- Largest component of project costs/labor.
- Best approaches for data capture depend on type/mode of survey.
- Having a concrete plan for administration, including actions for non-responses, reduces potential disruptions of the survey administration and bias in results.

## Decision: Data Processing and Analysis

- Analysis plan can and should be written early in the project
- Analysis plan should deliver information with which you can meet the goals of the survey

# Documentation and Output

- DO WHAT?

Document and archive all critical components of the survey

- Document and archive as the project evolves – do not wait until it is over.
- A well documented summary improves dissemination among colleagues, target audience, and other stakeholders

- WHY?

- Transparency of methodology and reproducibility of results are evidence that the findings are sound.
- Re-use of approach and instruments will save money if and when surveys are repeated

## Resources:

- Guide for Measuring Compliance Assistance Outcomes:

<http://www.epa.gov/Compliance/resources/publications/assistance/measures/comeasuring.pdf>

- AAPOR Best Practices for Survey and Public Opinion Research

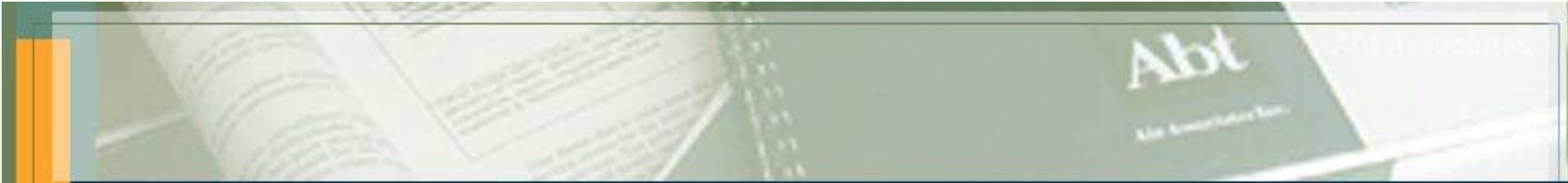
[http://www.aapor.org/default.asp?page=survey\\_methods/standards\\_and\\_best\\_practices/best\\_practices\\_for\\_survey\\_and\\_public\\_opinion\\_research#best6](http://www.aapor.org/default.asp?page=survey_methods/standards_and_best_practices/best_practices_for_survey_and_public_opinion_research#best6)

- Program evaluation resources and links from EPA

<http://www.epa.gov/evaluate/links.htm>

- A list of online, multi-chapter documents focusing on "how to's" of evaluation-related subjects

<http://www.eval.org/EvaluationLinks/onlinehbtxt.htm>



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