



Conducting the Study

Step 6: Analysis Plan

Step 7: Data Collection

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Step 7: Data Collection

Selecting the Right Format to Obtain Meaningful Data

- Objectives
 - ❑ Learn the different mediums, measures, and formats for data collection
 - ❑ Understand the importance of language and positioning
 - ❑ Select the right partners to maximize efficiency



Data Collection: Medium / Format

Medium / Format	
<input type="checkbox"/>	Pen / Paper
<input type="checkbox"/>	Electronically
<input type="checkbox"/>	Auditory
<input type="checkbox"/>	Focus Group
<input type="checkbox"/>	Key Informant Interviews
<input type="checkbox"/>	Transcription
<input type="checkbox"/>	Other, please specify: _____

- Do we have the resources to manually enter data?
- Will the target population be reached in an all electronic format?
- Will the patient be comfortable with the format chosen?



Example: Pen/Paper

Question #	Question	Answer	Score (for MD use)
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The following items are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much?

3	Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports Yes, Limited a Lot (1) Yes, Limited a Little (2) No, Not limited at All (3)		
4	Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf Yes, Limited a Lot (1) Yes, Limited a Little (2) No, Not limited at All (3)		
5	Lifting or carrying groceries Yes, Limited a Lot (1) Yes, Limited a Little (2) No, Not limited at All (3)		

Medical Outcomes Survey: SF-36

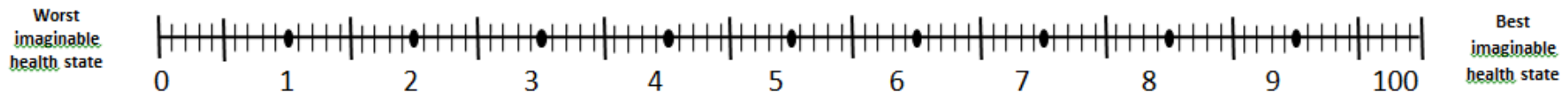


Example: Pen/Paper

I would now like you to indicate how good or bad your health state is today on a scale of 0-100, with 0 being the 'worst imaginable health state' and 100 being the 'best imaginable health state'.



And how would you say your health was prior to your injury on the same scale?





MARYLAND HIGHWAY SAFETY OFFICE: Annual Driving Survey

Please answer all of the questions below giving only **ONE** response for each question.
Please only complete this survey one time during July.

TODAYS Date:

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0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

What was the name of the program you attended or where did you get this survey?

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Select the location where you completed this document (**select only one**):

- | | | | | | |
|------------------------------------|--------------------------------|----------------------------------|----------------------------------|-------------------------------------|----------------------------------|
| <input type="radio"/> Allegany | <input type="radio"/> Calvert | <input type="radio"/> Charles | <input type="radio"/> Harford | <input type="radio"/> Prince George | <input type="radio"/> Talbot |
| <input type="radio"/> Anne Arundle | <input type="radio"/> Caroline | <input type="radio"/> Dorchester | <input type="radio"/> Howard | <input type="radio"/> Queen Annes | <input type="radio"/> Washington |
| <input type="radio"/> Baltimore | <input type="radio"/> Carroll | <input type="radio"/> Frederick | <input type="radio"/> Kent | <input type="radio"/> St. Mary's | <input type="radio"/> Wicomico |
| <input type="radio"/> Balt. City | <input type="radio"/> Cecil | <input type="radio"/> Garrett | <input type="radio"/> Montgomery | <input type="radio"/> Somerset | <input type="radio"/> Worcester |

HOME Zip Code

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0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9

AGE:

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0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

What is your Gender?:

- ☐ Male
☐ Female

Are You Hispanic or Latino?:

- ☐ Yes
☐ No

Race/Ethnicity:

- ☐ American Indian or Alaskan Native
☐ African American / Black
☐ Native Hawaiian/ Pacific Islander
☐ Asian
☐ White
☐ Other, please specify



Example: Electronic Links





Example: Audience Response System





Example: Other





Data Collection: Measurement Scale

Measurement Scale	
<input type="checkbox"/>	Nominal (categorical/discrete)
<input type="checkbox"/>	Ordinal (ranking)
<input type="checkbox"/>	Continuous Spectrum
<input type="checkbox"/>	Free Text
<input type="checkbox"/>	Other, please specify: _____

- Are you able to group all responses into unique categories or will you require the option to select multiple categories?
- Will you be able to offer all possible options without free text?
- Will you be able to differentiate the patient's voice and preference with the given options?



Example: Categorical

Date & Time of GCS	Time Since Injury		
<input type="text"/>	<input type="text"/>		
Eye Opening	Best Verbal Response	Best Motor Response	GCS Total
<input type="checkbox"/> 1-No Response	<input type="checkbox"/> 1-No Response	<input type="checkbox"/> 1-No Response	<input type="text"/>
<input type="checkbox"/> 2-To Pain	<input type="checkbox"/> 2-Incomprehensible Sounds	<input type="checkbox"/> 2-Extension	
<input type="checkbox"/> 3-To Verbal Command	<input type="checkbox"/> 3-Inappropriate Words	<input type="checkbox"/> 3-Flexion Abnormal	
<input type="checkbox"/> 4-Spontaneously	<input type="checkbox"/> 4-Disoriented & Converses	<input type="checkbox"/> 4-Flexion Withdrawal	
<input type="checkbox"/> S-Untestable (Swollen)	<input type="checkbox"/> 5-Oriented & Converses	<input type="checkbox"/> 5-Localizes to Pain	
	<input type="checkbox"/> T-Untestable (Tracheotomy)	<input type="checkbox"/> 6-Obeys Commands	
		<input type="checkbox"/> P-Untestable (Paralyzed)	

CURRENT RESIDENTIAL STATUS

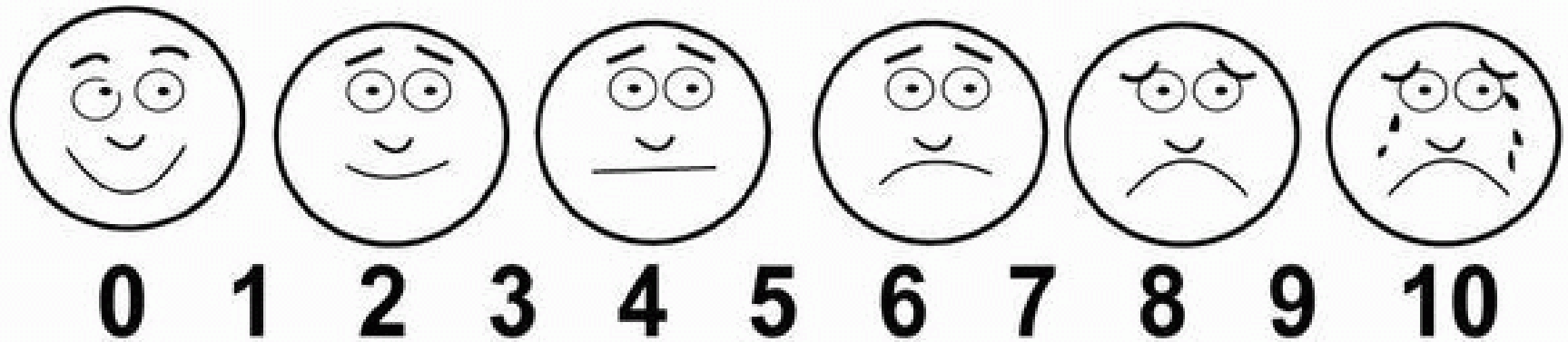
Are you?

- ☐ At home *without* additional care
- ☐ At home *with* additional care
- ☐ At hospital
- ☐ At Rehabilitation center/hospital
- ☐ At a nursing home
- ☐ At a hospice
- ☐ Other (*please specify*):



Example: Likert Scale

No Pain Moderate Pain Severe Pain



How much of the time during the past week did you have a lot of energy?	<input type="checkbox"/> All of the time <input type="checkbox"/> Most of the time <input type="checkbox"/> A good bit of the time	<input type="checkbox"/> Some of the time <input type="checkbox"/> A little of the time <input type="checkbox"/> None of the time
How much of the time during the past week have you felt downhearted and blue?	<input type="checkbox"/> All of the time <input type="checkbox"/> Most of the time <input type="checkbox"/> A good bit of the time	<input type="checkbox"/> Some of the time <input type="checkbox"/> A little of the time <input type="checkbox"/> None of the time



Example: Ranking

Thinking about the reasons you might not take your medication, using a ranking of 1 to 6, indicate the top reason you would not take your medication: 1 being the top reason and 6 being the last.

I do not want to be dependent on medication, I only take them when I need them.	4
I am better now; I do not feel that I need medication anymore.	2
Side effects are making me miserable.	1
I don't trust these medications.	6
Sometimes I forget.	3
I could not afford to get my prescription filled.	5



Example: Best Worst Scaling

When you think about choosing a treatment for your child, of the 6 items shown here, which **ONE** is the **MOST IMPORTANT** and which **ONE** is the **LEAST IMPORTANT**?

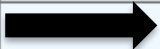
	MOST Important	LEAST Important
The child is not behaving in ways that could hurt him/her.	<input type="radio"/>	<input type="radio"/>
The child is not behaving in ways that can hurt other children.	<input type="radio"/>	<input type="radio"/>
The child gets an IEP.	<input type="radio"/>	<input type="radio"/>
You are able to bring the child to social events.	<input type="radio"/>	<input type="radio"/>
The child is able to stay in school all day with no problems. →	<input checked="" type="radio"/>	<input type="radio"/>
The child gets good grades in school.	<input type="radio"/>	→ <input checked="" type="radio"/>




Example: Discrete Choice Experiment

Which of the following options would you prefer to manage your child's needs?

Choose by clicking one of the buttons below the option you prefer:

<p>The child is in a special program in a regular public school</p> <p>Caregiver has full responsibility for all final decisions about care</p> <p>Rearrange one's schedule to bring the child to care appointments</p> <p>Do not bring the child to social outings to avoid conflict</p> <p> <input checked="" type="radio"/></p>	<p>The child is in a regular public school</p> <p>Nonfamily member is fully responsible for all final decisions about care</p> <p>Give up some daily responsibilities to bring the child to care appointments</p> <p>Do not maintain contact with family/friends to avoid conflict</p> <p><input type="radio"/></p>	<p>The child is in an alternative school</p> <p>Caregiver shares responsibility with a nonfamily member for all final decisions about care</p> <p>Give up all daily responsibilities to bring the child to care appointments</p> <p>Do not talk about the child's problems to avoid conflict</p> <p><input type="radio"/></p>
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Would you follow the chosen option?

 ☒ Yes
☐ No



Data Collection: Language & Positioning

- Are your questions easily understood by your audience?
- Will your audience be able to easily follow the format of your survey?
- Will the patient feel comfortable and confident answering the questions?



Example: Language

- How **many times** have you driven a **car** within 2 hours of **drinking**?
- How **many times** have you driven a **motor vehicle** within 2 hours of drinking **alcoholic beverages**?
- In the past **30 days**, how many times have you driven a motor vehicle within 2 hours of drinking alcoholic beverages?
- In the past **month**, how many times have you driven a motor vehicle within 2 hours of drinking alcoholic beverages?
- During the past 30 days, how many times have you driven when you **perhaps had too much to drink**?
- During the past 30 days, what is the **largest number** of drinks you had on any occasion?



Example: Free Text

When was the last time you smoked a cigarette? _____

Example: Select an option

How long has it been since you last smoked a cigarette?

- ☐ Less than 10 days
- ☐ 11- 15 days ago
- ☐ 16 – 30 days ago
- ☐ More than 30 days



Ambiguous: The question is not clearly stated (uses acronyms), is written in a complex way, or includes too much detail.

Question:

In the last week, did you exercise?

Alternative:

In the last week, did you exercise or participate in any physical activity for at least 20 minutes that made you sweat and breathe hard such as running, swimming, or bicycling?



Double Barreled: Covers more than one topic

Question:

How satisfied are you with the doctors and nurses who provide you with care?

Alternatives:

How satisfied are you with the doctors?

How satisfied are you with the nurses?



Leading: Leads the respondent in a direction

Question:

Should concerned parents use infant car seats?

Alternatives:

How often should parents use infant car seats?



Example: Language

Loaded: Suggest that the researcher is seeking or expects a certain response. The researcher tips their hand or includes some emotive words to influence the respondent.

Question:

Do you approve of the use of medications even if they might have side effects?

Alternatives:

How confident are you that you will use your medications as prescribed?

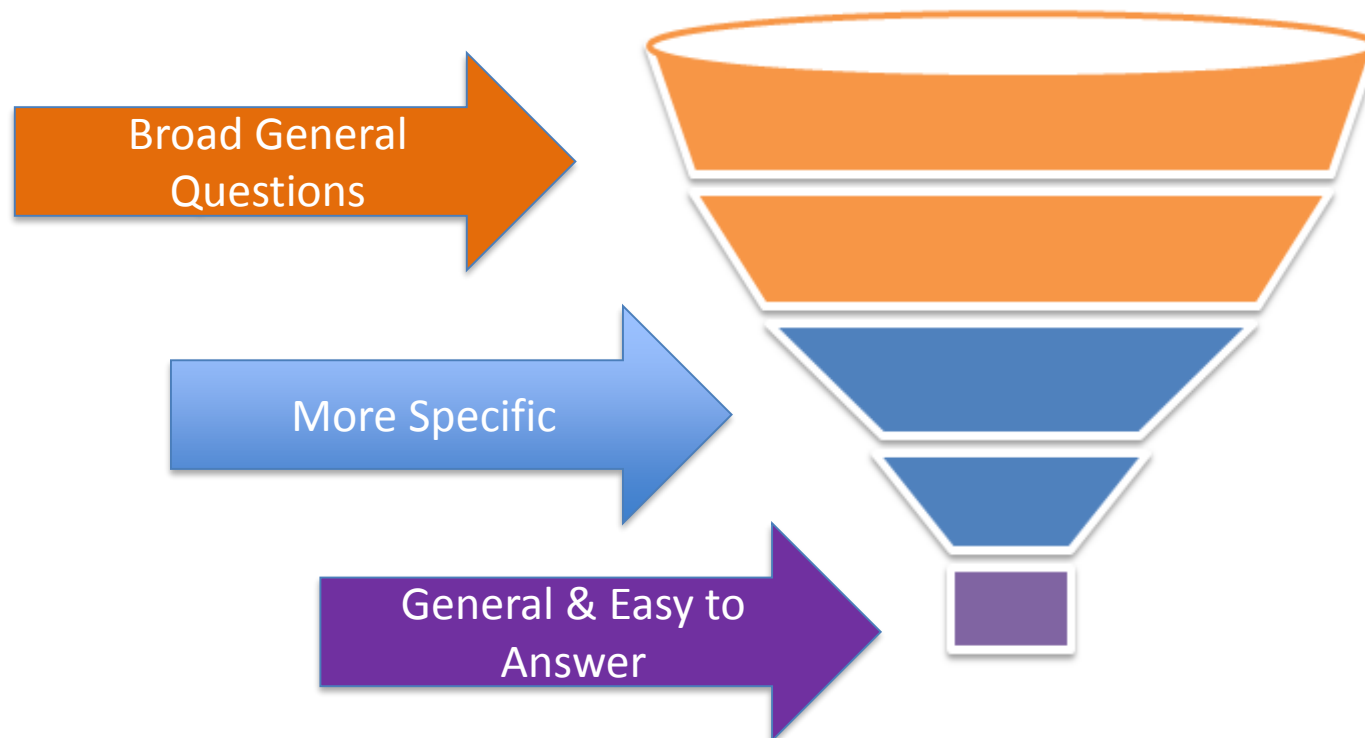


Building Rapport and Positioning to:

- Build respondents trust
- Avoid overly personal or threatening questions
- Avoid Off-topic questions that are out of context



Example: Positioning





Data Collection: Choosing the Right Partners

- Who is best equipped to create the tool for data collection?
- Who is the best person(s) to deliver/administer the survey?
- Will the patient feel comfortable and confident answering the questions?



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- Investigating and maintaining data
- Creating and validating analysis files
- Statistical analysis
- Data visualization



Summary

- There are many different mediums, measures, and formats for use in collecting survey data. Carefully consider all options when selecting appropriate questions.
- Be sure that your questions focus on the aims of your research, are clearly written, and provide appropriate response options.
- Consider how you are going to administer your survey and select the right partners and parameters to maximize efficiency and effectiveness.



Additional Resources

- Leeuw, E., Hox, J., Dillman, D. (2008). International handbook of survey methodology. European Association of Methodology. Retrieved from <http://joophox.net/papers/SurveyHandbookCRC.pdf>
- University of Kansas. (2016). Chapter 36 introduction to evaluation. Community Tool Box. Retrieved from <http://ctb.ku.edu/en/table-of-contents/evaluate/evaluation>
- Thompson, NJ., McClintock, HO. (2000). Demonstrating your program's worth: a primer on evaluation for programs to prevent injury prevention. Atlanta: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control.



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