Fit for Purpose: Best Practices in Survey-Based Community Health Assessments

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William McConnell
Roadmap for Today

• Introduction to Community Health (Needs) Assessments
  Requirements for Non-Profit Hospitals and County Health Departments
• How we (IU SPH-Bloomington, CSR, et al) conducted a CH(N)A
• Surveying as part of a CH(N)A
• Resources, Methods, and Data
What are CH(N)As?

- What do we mean by “Community”?
- What do they look like? A single summary or a constellation of documents?
- Who has to be involved? How do we get them involved?
- How often do they have to happen?
- What do we do with the resulting information?
- Who said we have to do it any specific way?
Why do we conduct CHNAs?

• Patient Protection and Affordable Care Act
  Non-Profit (private) Hospitals and Community Benefit
  • Growing concern about where non-profit hospitals were spending money
  • Most money is spent on patient care but that doesn’t justify the need for a hospital to be non-profit
    – Non-profits should be contributing *something* beyond patient care to their communities
Why do we conduct CHNAs?

Figure 2. Hospital Community-Benefit Expenditures, According to the Percentage of Uninsured Residents.

Hospitals were sorted into three groups on the basis of the percentage of uninsured residents in the communities they served. Using analysis of variance, we found no significant differences among these groups regarding either the level or pattern of expenditures. We obtained similar results for other community characteristics.

Why do we conduct CHNAs?

• Public Health Accreditation Board
  “Accreditation demonstrates the capacity of the public health department to deliver the three Core Functions of public health and the ten Essential Public Health Services”

Guiding Principles
• Advance the collective public health practice
• Describe a moderate level of capacity – neither minimums or maximums
• To avoid redundancy
• Improve quality of services
• Establish a ‘standard’ for health departments
• Describe current and emerging public health issues
• Promote effective internal and external collaborative partnerships
How do we conduct CHNAs?

- Affordable Care Act

  Section 9007 (the law) – Places the word “Needs” between Health and Assessment → Gets interpreted by the agency (IRS) →

  Section 501(r) of the Internal Revenue Service Code (the regulation)
  - Identify and prioritize community health needs
  - Identify community resources
  - Disseminate findings to community
  - Develop a health improvement plan
  - Involve diverse stakeholders

Conducted every 3 years

Hospitals had to have their first CHNA completed by 2015 or else pay a $50,000 fine (excise tax) – this includes the conducting, synthesis, and reporting phases
How do we conduct CHNAs?

• Affordable Care Act
  Facility-specific not organization-wide
  • What does this mean?
  • Why is this important for community health?

Other important aspects under 501(r)

• Health needs – not Health Care needs
• Joint planning is encouraged
• Must take into consideration the definition of “Community”
  – Geographic area, target populations, principal hospital functions
    » Level 1 trauma versus community general hospital
• Include medically underserved, low income, and minority populations
• Must make the findings widely available
How do we conduct CHNAs?

- Public Health Accreditation Board

<table>
<thead>
<tr>
<th>Standard 1.1:</th>
<th>Participate in or Lead a Collaborative Process Resulting in a Comprehensive Community Health Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard 1.2:</td>
<td>Collect and Maintain Reliable, Comparable, and Valid Data that Provide Information on Conditions of Public Health Importance and On the Health Status of the Population</td>
</tr>
<tr>
<td>Standard 1.3:</td>
<td>Analyze Public Health Data to Identify Trends in Health Problems, Environmental Public Health Hazards, and Social and Economic Factors that Affect the Public’s Health</td>
</tr>
<tr>
<td>Standard 1.4:</td>
<td>Provide and Use the Results of Health Data Analysis to Develop Recommendations Regarding Public Health Policy, Processes, Programs, or Interventions</td>
</tr>
</tbody>
</table>
How do we conduct CHNAs?

- Public Health Accreditation Board
  - Participate in or lead a collaborative (and systematic) process resulting in a CHNA
- Every 5 years
  - Mobilize communities, develop priorities, allocate resources, revise and adopt policy
- “…are conducted in partnership with other organizations…”
- An extension of ongoing surveillance activities
  - Continuous, systematic collection of data that analyzes, interprets, and evaluates current public health practice
Conducting a CHNA

- Both PHAB and the IRS code require the process to be collaborative

- The data collected must be valid (?) and representative (?)

- It is an act of Surveillance – this involves many ethical questions
  - Privacy, Representativeness, validity, aggregation of data (health and non-health), Resource Allocation, …

- Neither PHAB or the IRS provide specifics for how to include “diverse” community voices, what valid data is, or how to get representative data
How we did it

• Construct Driven Survey
  Formed from discussion/feedback through community health assessment planning meetings
  • Demographics
  • Perceived Health
  • Perceived Access
  • Perceived Barriers and Issues

Some validated measures – HRQoL for Wellbeing
Some not validated – Community Issues
  These are up to you!

• “Experimental Design”
  Web-based response representativeness compared to Mail
Methodological Findings

• Web-based responses are biased toward those who:
  Are younger
  Own a smartphone
  Are Male
  Have higher incomes
  Live in more densely populated areas (based on ZIP)
  Are more highly educated
Translatable Findings

• Don’t necessarily need validated measures in order for CHNA to be useful

• Smartphone owners are almost twice as likely to respond on the web
  Need state-level efforts to bring together data sources that can be used to define a cell phone based sampling frame (BMV records, Emergency Response System, utilities, taxes, etc….)
  • Public Health should leverage Surveillance authority

  For rural places, smartphones can by-pass need for households to have internet access

• Even with better sampling, may still leave out those who most need public health’s attention
Implications of CHNA Requirements

- Cost (> $14,000 per health department, time, tradeoff with other activities)
- Capacity (Human, Technology, Research)
- Methods (Undefined)
- Improved Health (?)
- Reduced Health/care costs (?)
- Reduced Health disparities (?)
- Equitable Resource Allocation (?)
- …
Up Next

- Center for Survey Research: Who We Are
- “Representativeness”
- The Survey Process
- Highlight: Sampling
- Highlight: Questionnaire Design
- 2015 Indiana Community Health Needs Assessment Study (Detailed Methodology)
- The Survey Process: Costs & Resources
Center for Survey Research

• A methodological consultation and data collection center providing services to government, non-profit, for-profit businesses, and external academic researchers, as well as the Indiana University community, since 1981.

• 16 full-time staff of study directors, data management staff, technologies staff, and a Center management team, as well as part-time study support/mail processing staff and telephone interviewing and qualitative lab staff.

• Located on the corner of 10th & Union in Eigenmann Hall

BLOOMINGTON CAMPUS

Eigenmann in the springtime
Center for Survey Research

- Full range of one-stop and à la carte services for qualitative and quantitative research including:
  - Internet, mail, and telephone surveys
  - Standardized interviewing, semi-structured interviewing, in-person interviewing, cognitive interviewing, focus groups
  - Ethnographic and observational studies
  - Sampling and questionnaire design
  - Data cleaning
  - Weighting and imputation
  - Descriptive and multivariate analyses of survey data

- Current and recent projects/collaborators include:

- US Army Research Institute
“Representative” data

Opinly is a place to be heard.
Take surveys on your own time anywhere and earn rewards.
Together we can make change.
“Asked 100 people. Survey says…”

• **Representativeness of the data**: rigorous research methodology critical to valid and reliable data

  **Need to pay attention to:**
  • Sample size (completion numbers)
  • Sampling strategy – random sampling
  • Mode of data collection
  • Questionnaire design – based on scientific principles
  • Data collection procedures – operational fidelity and quality control
  • Data processing/editing procedures

• **Ensure you have high-quality data!**

  Not this →
Instrument design and testing

Define research objectives

Choose mode of collection

Construct and pretest questionnaire

Recruit and measure sample

Code and edit data

Make postsurvey adjustments

Perform analysis

Choose sampling frame

Design and select sample

Sampling

Data collection

Data processing

Analysis

Figure 2.4 A survey from a process perspective.

SOURCE: Groves et al., 2009
Representativeness begins with (random) sampling

- Clearly define target population
- Build quality sampling frame
- Stratify sample, whenever possible
- Carefully consider sample size needed
- Understand limitations of sampling approach for specific purpose
- Probability vs non-probability sampling
Define target population

• Group of elements (people, households, work teams) to which inference is made
  • Finite, observable, gives unit and time frame, basic characteristics (age, geography)
  • Ex. Civilian, non-institutionalized, English-speaking US adults 18 years of age or older, All Duke Energy consumers participating in eBill as of June 2011
Population
Sampling frame/list

Who is missing from your list?
(possibility of coverage error)
Respondents

Who is missing from your data? (possibility of nonresponse error)
What methods were used?

- Opinly is a place to be heard.
- Take surveys on your own time anywhere and earn rewards.
- Together we can make change.
IF YOU HAVE A LIST:
Stratified sampling
Stratified sampling

Use Simple Random Sampling (or systematic)
Selection

Not random (non-probability)
Selection

Add a random element, if possible.
“Random” ≠ “happenstance”
Instrument design and testing

Before you start, look around – are there already existing (validated) instruments or datasets out there?

- US Census: https://www.census.gov/history/www/through_the_decades/index_of_questions/
- US General Social Survey (GSS): http://www3.norc.org/GSS+Website/Publications/GSS+Questionnaires/
- Other repositories of questionnaires/datasets:
  - Inter-university Consortium for Political and Social Research (ICPSR): https://www.icpsr.umich.edu/icpsrweb/landing.jsp
  - Roper Center iPoll: http://www.ropercenter.uconn.edu/data_access/ipoll/ipoll.html
  - Odum Institute: http://www.odum.unc.edu/odum/home2.jsp
  - Academy of Management, Research Methods Division “Measure Chest”: http://rmdiv.org/
  - Pew Research Center: http://www.pewresearch.org/data/
  - Gallup Analytics “Gallup Brain,” ABC News/Washington Post Poll Vault
- Also consider – is a survey the most appropriate design for the research?
Developing the instrument

• If it turns out you do need to develop (some) original questions, some advice:
  • Please resist the “naïve view” about asking and answering questions.
  • Consult the variety of resources available, including the American Association for Public Opinion Research (AAPOR) website.
  • It takes time to develop a (good) instrument – plan ahead.
  • Test and/or get feedback on the instrument – and then revise and test again. And again.

• Evaluating research based on survey instruments, some advice:
  • The “naïve view” again – try to avoid it.
  • Papers should include at least the full text (question and response choices) of the items analyzed.
  • Read the methodology section carefully.
The road to a finished instrument

Start

Research Question → Focus Groups → Draft Instrument → Expert Reviews (Methodological & Substantive Area)

Cognitive Testing (Round 2) ↔ Revise Instrument

Cognitive Testing (Round 1) ↔ Revise Instrument

Revise Instrument → Pilot

Revise Instrument → Ready to Launch!
Avoiding measurement error in the instrument

Does the instrument actually measure what it is intended to measure?

- When writing and testing your (or evaluating another) instrument, take into critical consideration...
  - Target population
  - Analytic objectives
  - Mode (method of survey delivery) and other operationalization/implementation issues
  - Cognitive aspects of survey response
  - Questionnaire design properties (Top Ten, next slide)
Top 10 Questionnaire Design Issues

1. Conceptual Variability
2. Problematic Wording
3. Vague Quantifiers
4. Response Options
5. Order Effects
6. Recall/Retrieval Difficulty
7. Estimation Difficulty
8. Attitudinal Questions
9. Sensitive Topics
10. Formatting

From Introduction to Questionnaire Design (link), Workshop in Methods, IU Social Science Research Commons.
Methods Description Checklist

✓ Who sponsored/funded and conducted
✓ Exact wording of questions
✓ Target population and sampling frame (and vendor)
✓ Sample design description
✓ Sample sizes, precision, and variables used in weighting
✓ Size of subgroups analyzed
✓ Methods and dates of data collection

Community Health Needs Assessment Study: Methodology

- **Sponsor:** IU School of Public Health – Bloomington
- **Design/Data Collection:** IU Center for Survey Research
- **Goal:** Representative survey data on health-related community needs, perceptions, and individual behaviors of the target population
- **Target population:** Non-institutionalized adult (18+) residents (non-vacation homes) of 6 Indiana counties
- **Target n (completions):** 400 each from the 6 counties
- **Sampling Frame:** Address-based sampling (list vendor: Market Systems Group)
- **Mode of survey delivery:** Mail and internet
Methodology (cont’d)

- **Sampling frame (list):** Addressed-based sampling of households derived from the US Postal Service Directory Sequences (databases containing over 98% of US residences, updated weekly/monthly)

- **Respondent-selection:** Random selection – e.g., adult household member with the most recent birthday
Survey Modes: Mail, Internet

• Mail-mode paper questionnaires generally enjoy higher response rates than internet surveys
  • High response rates alone not a good indicator of data quality but they do lower the overall risk of nonresponse bias (systematic error where the people who answered the survey are different than the people who didn’t answer the survey)
  • And certain estimates can be susceptible to respondent demographics/characteristics, including technology use

• However, internet-mode surveys can offer efficiencies for data collection and some cost-savings

• Balancing data quality and costs

• Which method is “best” for CHNA?
Mail vs Web+Mail
Experimental Treatment

Mail Treatment:

- Letter announcing study
- Paper Questionnaire (with $1 incentive)
- Second Questionnaire ($1 incentive to subsample)

Web+Mail Treatment:

- Letter with URL to survey (with $1 incentive)
- Second letter with URL to survey
- Paper Questionnaire ($1 incentive to subsample)
Assignment into Experimental Treatments

Each County
(N=~2000 per county)

randomized assignment

Mail Treatment
(N=~1000 per county)

Mail+Web Treatment
(N=~1000 per county)
What it looks like from the respondent’s P.O.V.

Mail Treatment

Contact #1

• Letter announcing study

Dear [county, if] county resident:

In a few days, you will receive a survey in the mail for an important study about health needs in Indiana. The study is being conducted by the Indiana University School of Public Health in collaboration with your local county health department, IU Health Bloomington, and IU Health Bedford. We hope you will decide to share your opinions and complete the survey and return it to us in the postage paid envelope that we will also include. Completing the survey will take about 15 minutes, and your responses will be confidential.

We are hoping to learn more about you and your community—how you feel about your health, how you think resources should be allocated for things like safe drinking water and recreational opportunities, and what you think are the most important health issues facing your community.

We hope that the data collected in this study will help improve the health-related services provided by organizations in your community, and by extension, improve the quality of life for you and your neighbors. Since your participation is so important to the success of this project, I am writing in advance so you will be watching for the questionnaire (with a small token of our appreciation) in the mail. On behalf of the partners in your county working on this project, we thank you for your consideration. With your generous help and that of others in your community, the efforts of those working to improve health in your local community will be enhanced.

Regards,

Michael Resse, Ph.D., MPH
Associate Dean for Research & Graduate Studies
School of Public Health
Indiana University
Mail Treatment (cont’d)

Contact #2

• Letter
• Paper questionnaire
• $1 cash incentive
Mail Treatment (cont’d)

Contact #3 (nonresponse)

- Another letter and
- Paper questionnaire
- Subsampled $1 cash incentive
What it looks like from the respondent’s P.O.V.

Web+Mail Treatment

Contact #1
- Letter with URL to survey
- $1 cash incentive
Web+Mail Treatment (cont’d)

Contact #2 (nonresponse)
• Another letter with URL to survey

(SCHOOL OF PUBLIC HEALTH)

Your Community Health Needs Assessment
Clark, Dubois, Jackson, Lawrence, Martin, Newton

(DATE)

Dear [County, IN] county resident,

About two weeks ago, we mailed you a letter asking for your help with a study about how to improve the health-related services provided by organizations in your community. We know that Indiana is facing health challenges—most lists and statistics on the topic reinforce that fact. But getting your input on the state of your county’s health and the types of health programs you would like to see in the future is vital to those who make decisions about the programs and services that are available.

We ask that the adult (18 years of age or older) in your household who had the most recent birthday complete the online survey as soon as possible. Your help is important, and we are extremely grateful for your participation in this study.

If you have any questions, please contact us at ogcph@indiana.edu. For technical questions about the survey website, contact us at cia@indiana.edu.

[The enclosed additional space of appreciation is yours to keep whether you decide to participate or not, although we do hope you will respond. Thank you so much for your help.]

Many thanks,

Michael Reese, Ph.D., MPH
Associate Dean for Research & Graduate Studies
School of Public Health
Indiana University

To complete the survey, please follow the directions below:

Go to this website: survey.indiana.edu/CHNA-15
To begin answering the questions, enter this ID: [LoginID]
Web+Mail Treatment (cont’d)

Contact #3 (nonresponse)

- Letter
- Paper questionnaire
- Subsampled $1 cash incentive
## Contact Schedule

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Mailing</th>
<th>Date sent</th>
<th>Number sent</th>
<th>Number sent $1 cash incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail-Only</td>
<td>Pre-letter</td>
<td>7/8/2015</td>
<td>6,000</td>
<td>Not included</td>
</tr>
<tr>
<td></td>
<td>Invitation (paper questionnaire included)</td>
<td>7/24/2015</td>
<td>6,000</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td>Follow-up (paper questionnaire included)</td>
<td>8/12/2015</td>
<td>4,508</td>
<td>1,275*</td>
</tr>
<tr>
<td>Web+Mail</td>
<td>Invitation (online survey URL included)</td>
<td>7/17/2015</td>
<td>6,000</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td>Follow-up (online survey URL included)</td>
<td>7/27/2015</td>
<td>5,730</td>
<td>Not included</td>
</tr>
<tr>
<td></td>
<td>Follow-up #2 (paper questionnaire included)</td>
<td>8/12/2015</td>
<td>5,141</td>
<td>3,426*</td>
</tr>
</tbody>
</table>

*Cash incentive was sent to a subsample of non-respondents.*
A clear winner

Completions by Mode and Treatment

- Mail: 1800
- Web+Mail: 800
- Web+Mail WEB: 300
Define research objectives

Choose mode of collection
- Construct and pretest questionnaire
- Recruit and measure sample
- Code and edit data
- Make postsurvey adjustments
- Perform analysis

Choose sampling frame
- Design and select sample

Figure 2.4 A survey from a process perspective.

SOURCE: Groves et al., 2009
Thank You!

For more information:

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