



Interviewing INTEL

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Outline

- Common Interviewing Barriers
- Getting Good Histories
 - Interviewing Process
 - Strategies and Tips
- Next Generation Tools
- Practical Applications
 - Telephone Interviews
 - Face-to-Face Interviews
 - Digital Surveys



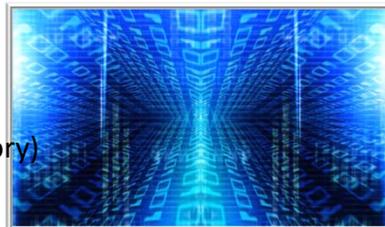
Common Barriers

Three "R"s



Human Memory

- Time Travel
 - Fallibility - distorted perception; some details unnoticed, not stored
 - Flexibility - information added later if memories rehearsed (contamination of original memory)
- Time dependent
 - STM: limited amount of data, prompt usage
 - LTM: huge amount of information, very long time
 - Longer interval, probability of incorrect recall
 - 20% of critical details of a recognized event are irretrievable after 1 year; 50% after 5 years*

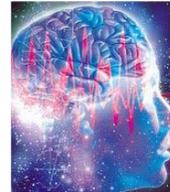


* Source: Bradburn N, Rips L, Shevell S. Answering autobiographical questions: The impact of memory and inference on surveys. *Science, New Series* 1987;236(4798):157-161



Human Memory cont'd

- Information stored in neural pathways
- Elements scattered throughout
- **Reconstruction** of information
 - Not catalogued like a library
 - Brain "replays" a pattern of neural activity originally generated by event
 - Hyperthymesia - uncanny recall of personal past
- Accessed via recall and recognition



Source: <http://en.polyglot-tutor.com/interesting-facts-about-human-memory>



Human Memory Chip

- Brain - roughly 100 billion neurons
 - 10^{12} (trillion) connections
 - 10^{15} (quadrillion) synapses
 - 1 billion neurons participate in memory
- Estimates of memory
 - Early: 1 - 10 terabytes (Robert Birge, Syracuse University)
 - Revised: 100 million megabytes (97 terabytes)
(http://library.thinkquest.org/C001501/the_saga/compare2.htm)
 - More recently: up to 1000 terabytes! (0.97 petabytes)
- Equates to computer w 10^{12} (1 trillion) bit per second processor
- Visual material: 62% accurate dailysherlock.livejournal.com/



Getting Good Histories

- Extensive literature on subject
 - Reducing recall gaps and bias
 - Methodological pitfalls
 - easily demarcated events—easily recalled
 - mundane (day-to-day) events—more effort
- Accuracy of recall depends on:
 - Interviewing techniques
 - Quality of questionnaire
 - Degree of required detail



Interviewing Procedures

- Phone Interviews
 - Less costly than F-to-F
 - Higher response rates (vs. SAQ mailed)
 - Quicker access to participants
 - Can collect more sensitive information
 - Lower response rates than face-to-face
 - Shorter questionnaires used
 - Unable to capture important visual information
 - Under-coverage of some populations



Interviewing Procedures

- Face-to-Face Interview
 - Higher response rate
 - Questionnaire can be more complex
 - More accurate recording of responses
 - Fewer questions left without a response
 - Appropriate for hard to reach populations
 - Costly
 - Potential for interviewer error
 - Respondents less inclined to be honest (more private modes produce higher reports of socially undesirable behaviors)



Recognition supercedes Recall

- Recall – remembering out of thin air
 - Search and retrieval
 - No specific cues
- Recognition – cue or clue-driven
 - Associative cues allow recall of items not originally remembered and thought to be lost to memory
 - *“A correct response can be identified when presented but may not be reproduced in the absence of such a stimulus”* Encyclopedia Britannica
 - ***“...a system that is clumsy and inelegant but a lot better than nothing”*** D. Gary Marcus, NYU author of 'Kluge: the Haphazard Construction of the Human Mind)



Interviewing Procedures

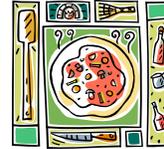
Asking Without Badgering

- **Multiple-Pass Study (USDA)**

A form of repetition with minimal burden

“asking people about their intakes in different ways helped respondents recall more of the foods they ate the day before” (USDA Food Surveys Group)

www.ars.usda.gov/is/AR/archive/mar01/slab0301.htm



- Food preferences
- Shelf inventory
- Use Probes, Paraphrasing, Focused Questions



Probes

- Standardized way to obtain additional information from a subject
- Use when answer is unclear, irrelevant, too broad
- Best probes (often neutral):
 - simple or quiet repetition of question
 - neutral phrases (e.g. “how do you mean?”)
 - explain critical terms or components
 - standardized definitions



- **Probing reported 25% higher dietary intakes** (CAMPBELL, V. A. & DODDS, M. L. (1967) Collecting dietary information from groups of older people. / Am. Diet. Assoc. 51:29-33.

Slide adapted from 2004 *Public Health Training and Information Network (PHTIN)* Series



Paraphrasing and Focused Questions

- **Paraphrasing** - rewording of a response
- **Focused questions** - provide limits or boundaries
 - Useful for vague statements
 - Not same as closed-ended

Example

Open-ended question: Where do you usually eat your meals?

Client: You know, it's really hard to say where I eat most of the time.

Focused question: Okay, let's take yesterday. How did yesterday compare to an average day for you?

Client: It was pretty much the same.

Focused question: So, where did you eat in the morning today?



Interviewing Procedures FEEDBACK

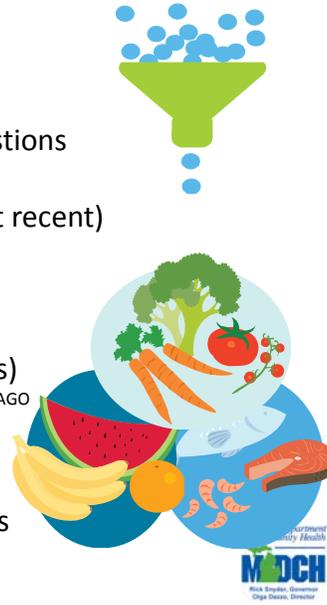
- Statement or action indicating that respondent is doing a good job
 - Give for acceptable performance - not "good" content
 - Short feedback phrases for short responses
 - Longer feedback for longer responses
 - Study information can serve as feedback
- Telephone interviewers: feedback 30-50% of time
- Examples:
 - "That is useful / helpful information"
 - "Let me get that down"
 - "I want to make sure I have that right (REPEAT ANSWER)"
 - "We've touched on this before, but I need to ask every question in the ... order that it appears in the questionnaire"
- Slide adapted from UNC 2004 *Public Health Training and Information Network (PHTIN) Series*



Interviewing Procedures ORDER

- Basic Direction of Information:
 - Start with EASY, non-threatening questions
 - FUNNEL (general before specific)
 - TEMPORAL (from most recent to least recent)
- Logical Flow
 - Ask RELATED TOPICS together
 - Use TRANSITIONS to change topics
 - Use Schema's (pattern of associations)
- **PRIORITIZE** most important questions or grouping of questions
- Latitude with hypothesis-generating tools

Source: Richard B. Warnecke, Ph.D. UNIVERSITY OF ILLINOIS AT CHICAGO



Interviewer Procedures OBJECTIVITY

- Don't anticipate responses
- Don't lead or prod
- Go back over inconsistent responses
- Blind the subjects to hypothesis (e.g. nest exposure of interest in a longer list covering other potential exposures)
- Source: <http://www.ispub.com/journal/the-internet-journal-of-epidemiology/volume-3-number-2/recall-bias-can-be-a-threat-to-retrospective-and-prospective-research-designs.html>



Strategies and Tips Assisting Recall

- Timing is Everything
 - Rapid followup!
 - Choose newly diagnosed cases for studies
- Use OBJECTIVE markers of exposure
 - Use calendar, identify key days/dates
 - Anchor around a memorable event or holiday
 - Day planner, journal, online food diary?
 - Review receipts and/or checkbook
 - Shopper cards
- Ask about living and working environments
 - Are meals frequently cooked at home
 - Where are workday meals eaten – at desk, go out to eat
 - Compare to current exposure, current routines
- Can a close contact assist? (the planner, shopper, cook)



Tips cont'd

- Build upon information collected during initial questioning
- Give clients adequate time before answering
- Ask one question at a time
- Ask Difficult questions in a Soft way
- Minimize interruptions
- Use intuition to sense differences between what is said and what is meant – expand the topic when appropriate
- Look for Warning Signs of Recall issues
 - Timelines don't add up
 - Gaps, nonresponses
 - Contradictions , mixed signals (differing answers to overlapping/similar questions)

Tips for Product Information: Traceback

- Specific information needed to identify the variety of food, manufacturing plant, production date
 - Exact name of the product and product description (as stated on the product label)
 - Type of container and net weight (e.g. box, bag, can, pouch, etc.)
 - Purchase date and exact location where purchased.
 - Product intended to be refrigerated, frozen, or stored at room temperature ?
 - Lot number- typically a combination of letters and numbers
 - “Best by,” “best before “or expiration date
 - UPC code (also known as the bar code)
 - Net weight
 - How the food was stored, prepared, and handled
- Digital images greatly help!!



Wrap-Up

- At end of interview:
 - Opportunity for client to ask YOU questions
 - Address missed questions and clarify any issues
 - Review plan to collect additional info/ records
 - May need to re-contact
 - Best method(s)
 - Best time(s)
 - Provide your contact information
 - Phone, email, fax
 - Encourage a message if client remembers something!



Reaching Clients

- On-line directories
- Email address
- Wireless contact
 - 331.6M active wireless subscriber connections (www.CTIA.org)
 - 257 million "data-capable" devices are active on US carriers networks (www.CTIA.org)
 - 50% of U.S. cellphone users have smartphones (Source: Nielsen, 2012)
 - 31.6% of US households are wireless only (2011) (www.CTIA.org)



Reaching Clients (cont'd)

- Engage medical providers
- Identify a proxy for those who cannot be directly reached or cannot speak for themselves
 - Elderly – relative, guardian, household member, facility
 - Minors – parent or guardian; if an older child, encourage interviewing of the child and parent together
 - Hospitalized cases, severely ill – medical team, family
 - Deceased – responsible party, family member
 - Non-English speaking – seek translator



Utilizing Technology Next Generation Tools

- IT and Public Health working together
 - Electronic Survey Systems
 - Smart Phones and Apps
 - Shopper Cards, Credit Cards
 - Social Network
- Rewards
 - User friendly, portable
 - Real time data collection and processing
 - Strengthen accuracy and timeliness of reporting
 - Help accelerate interventions to prevent further morbidity



Digital Survey Options

- Can be efficient, low-cost, high-quality data
- California:
 - Outbreak groups with w/ability to use on-line surveys
 - Time to collect data reduced
 - Time to analyze data has increased
 - Privacy concerns re data warehousing/transmission (HIPPA compliant?)
 - Won't replace other modes of data gathering
- South Dakota:
 - Online hypothesis generating questionnaire
 - Used for case histories on routine STEC (50%) and Salmonella (30%) cases
 - Receive detailed comments
 - **“Our cases seem pretty excited to do them on- line”**



Phone Based Data Collection

- EpiSurveyor www.episurveyor.org
- Website for designing data collection forms
- Design forms, collect data, SMS systems,
- Backend data aggregation
 - Runs on Android, Blackberry and non--smart phones
 - Free, but increased pricing with tech support



Apps

- First outbreak phone app developed
 - **“Outbreaks Near Me”**
 - www.outbreaksnearme.org
 - Search and browse outbreak reports on interactive map
 - See all current outbreaks in your neighborhood
 - Set up automatic alerts for your area
 - Be first to report an outbreak
 - Use app reporting feature
 - Receive credit!



Practical Applications

- Scenario 1 – Phone Interviews during Shiga toxin producing *E. coli* cluster
- Scenario 2 – Face-to-Face Interviews during outbreak of gastrointestinal illness among inmates in a county jail
- Scenario 3 – Online Questionnaires after a norovirus outbreak among sports tournament participants

Note – These scenarios based on real events



Telephone Interview

- Example: Shiga toxin producing *E. coli* cases began occurring after Christmas Holiday
- Barriers
 - Interviews are occurring three or more weeks after suspected exposure
 - Need a 7-day food history
 - Travelers from other states
- Approaches
 - Assisting Recall
 - Probing and Paraphrasing Techniques



Assisting Recall

- Calendar Verification
 - Use of dates
 - You mentioned eating at Restaurant X. What date did you eat there?
To remind you, Restaurant X was only open through December 24th
 - Use of significant events (those not traveling may have made prepared meals)
 - What meals did you prepare at home around the holidays?
 - Were you invited to prepared meals at other people's homes?
- Recognition techniques
 - Did you eat at one of these restaurants (list to work off off)
- Objective Reference
 - Those traveling may keep receipts, bank statements
 - Since you were traveling you may not have eaten your usual foods. Do you have records of what restaurants you dined at?
 - What times and dates did you have those meals?



Probing and Paraphrasing Techniques

- Someone traveling during the holidays may answer "I ate at the hotel"
- Probing
 - Elaborate: "Tell me a little more about the dates that you stayed at the hotel"
 - Exemplify: "Can you give me an example of what meals and times you would have eaten at the hotel?"
 - Explain: "I am not sure if I got all of that, can you explain what items you would have eaten one more time?"
- Paraphrasing
 - Specify: "Was it only breakfast that you ate at the hotel?"
 - Restate: "To make sure I understood correctly you said you only eggs and bacon at the hotel breakfast, correct?"



Face to Face Interview

- Example: County Jail contacts County Health Department because large portion of inmates fell ill with gastrointestinal symptoms after suspected meal
- Barriers
 - Hard to reach population
 - No phones, no internet
 - Not motivated to be cooperative
 - Questionable honesty
 - Comprehension and language barrier
- Approach
 - Access to menu of food items potentially eaten
 - Rapidity of follow-up
 - Team approach to interviews
 - Training and debriefing



Be Prepared to Provide Feedback

- Interviewees asked questions
 - Why are you asking these questions?
 - What are they doing about this?
- Barrier in this scenario: Not able to give contact information where questions can be directed because they are inmates
- Let interviewee know that the purpose is to find the cause of the illness and to try to prevent it from occurring again
 - Example: The health department can look at how food was prepared and give kitchen staff and supervisors training and suggestions for food preparation



Comprehension and Other Barriers

- Probes or Paraphrasing
 - Rewording of question to explain a critical component to get at the real answers
 - Symptoms
 - Abdominal cramps: “Did your stomach hurt?”
 - Diarrhea: “Was your stool loose or watery?” “Did you feel a sense of urgency to go?”
 - Nausea: “Did you feel like you had to vomit
- Approaching uncomfortable questions
 - “Is it alright if I ask you about your symptoms?”
 - Use of soft or quieter tone when asking personal questions
- Language barriers
 - Inmates used bi-lingual friends to translate information
 - One interviewer was bilingual: Spanish-English



Bias and Recall Issues

- Bias over specific food item
 - Inmates had preconceived idea
 - Inmates wanted the health department to know that the specific food item was to blame
 - Many reported illness directly after eating food item: “I got sick *right* after I ate the food”
- Interviewer should be specific and use paraphrasing
 - “Would you say an hour after you ate?”
 - “Dinner was at 5:00 pm were you ill before dinner?”
 - “How long before/after dinner”
- Open ended question
 - “Where were you when you became ill?”



Participant gets off the subject

- Use neutral feedback to redirect
 - “That’s interesting! I have recorded those comments. Now I want to ask you about what you ate on the previous day”
 - “That is good information...”there are some questions about your observations of the food and food preparation at the end of the survey. Hold onto that thought.”
 - “That is helpful. I have heard those comments about the food being spoiled from others as well.”



Remaining Objective

- Some interviewees did not like being asked about every item
 - “I eat everything they serve.”
 - “I never eat dessert.”
- Interviewer cannot assume that something was or was not eaten by those statements
- Interviewer can indicate those statements are helpful, but to be thorough it would benefit to ask about each menu item



Digital Survey Options

- Illinois investigation example (Dec 2010)

- Wedding reception outbreak
- Survey link sent via email and social network site
- Social site responses:



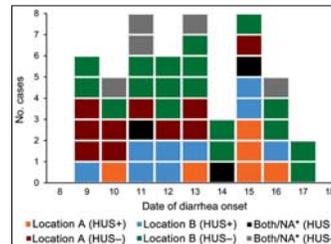
- 75% [vs. 25% email]
- Mean time: 8.7 hrs [vs. 42.3 hrs] $p < 0.05$
- Mean age: 29.8 yrs ; range 11 mos – 80 yrs
- 2x as many males

Outbreak solved DAY later!



Credit Card Payments

- Credit cards helped solve German E. coli O104 outbreak (sprouts)
 - Cafeteria meals at 2 companies
 - Cashless payment system
 - Salad bars: included 30 items



- Data helped reduce exposure misclassification
- Conclusion: Recall-independent investigation methods “should be exploited early...”

Identifying Risk Factors for Shiga Toxin–producing *Escherichia coli* by Payment Information Emerg Infect Dis [serial on the Internet] 2012 Jan



Digital Survey

- Example: Norovirus outbreak among sports tournament participants
- Barriers
 - Participants from across jurisdictions
 - High attack rate
 - Assumed to be difficult to reach by calling
- Approach
 - Survey was e-mailed out through coaches
 - Case definition focusing on primary and secondary transmission



Resources

Brownstein J et al Digital Disease Detection – Harnessing the Web for Public Health Surveillance *New England Journal of Medicine* 2009 360;21;
www.healthmap.org

Bradburn N, Rips L, Shevell S. Answering autobiographical questions: The impact of memory and inference on surveys. *Science, New Series* 1987; 236(4798)

Loftus E, Smith K, Klinger M, Fiedler J. Memory and Mismemory for Health Events: (In J. M. Tanur; ed. **Questions about questions: Inquiries into the cognitive bases of surveys.** New York: Russell Sage Foundation; 1991: 102-37. :157-161.

Florida Center for Public Health Preparedness, University of South Florida, College of Public Health. Basic Epidemiology Online Course, Basic Interview Techniques Module http://www.fcphp.usf.edu/courselistings/courses_ListingsBEPI.htm

