Practical Implementation of Adaptive Design in CATI Surveys

Can an Adaptive Designs Really be 'Better, Faster and Cheaper'??

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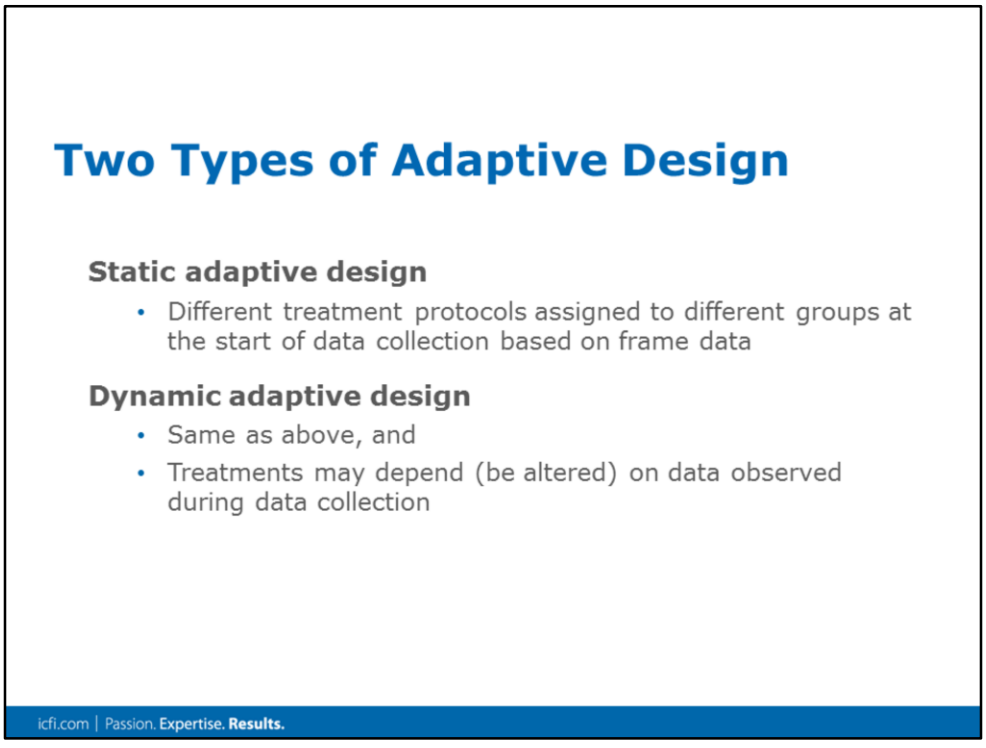
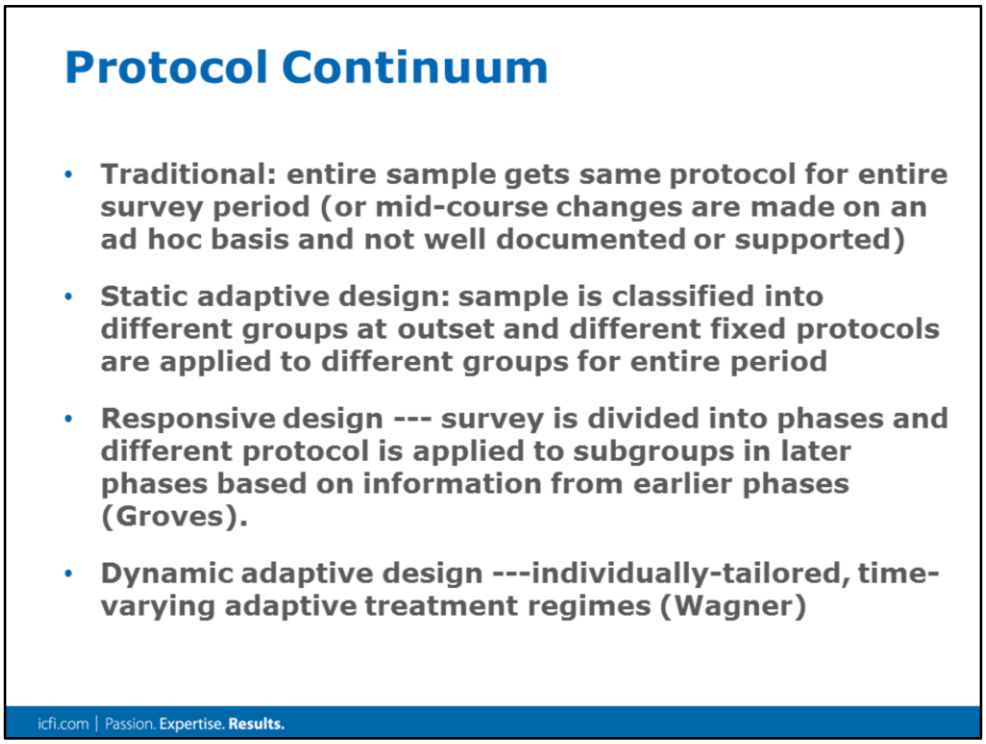
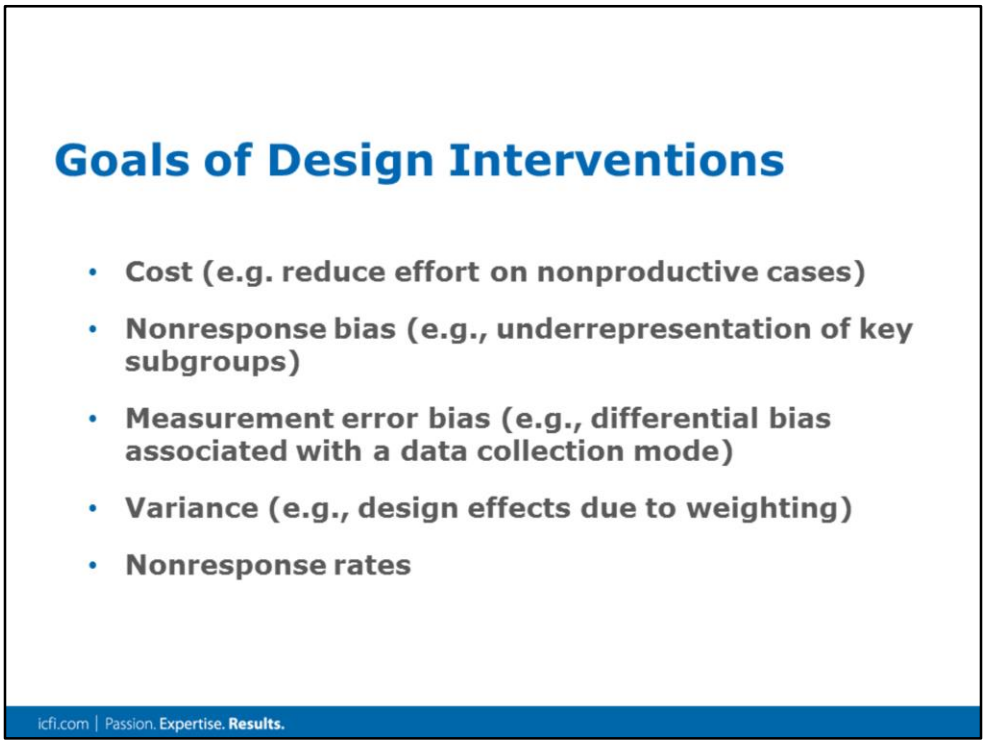


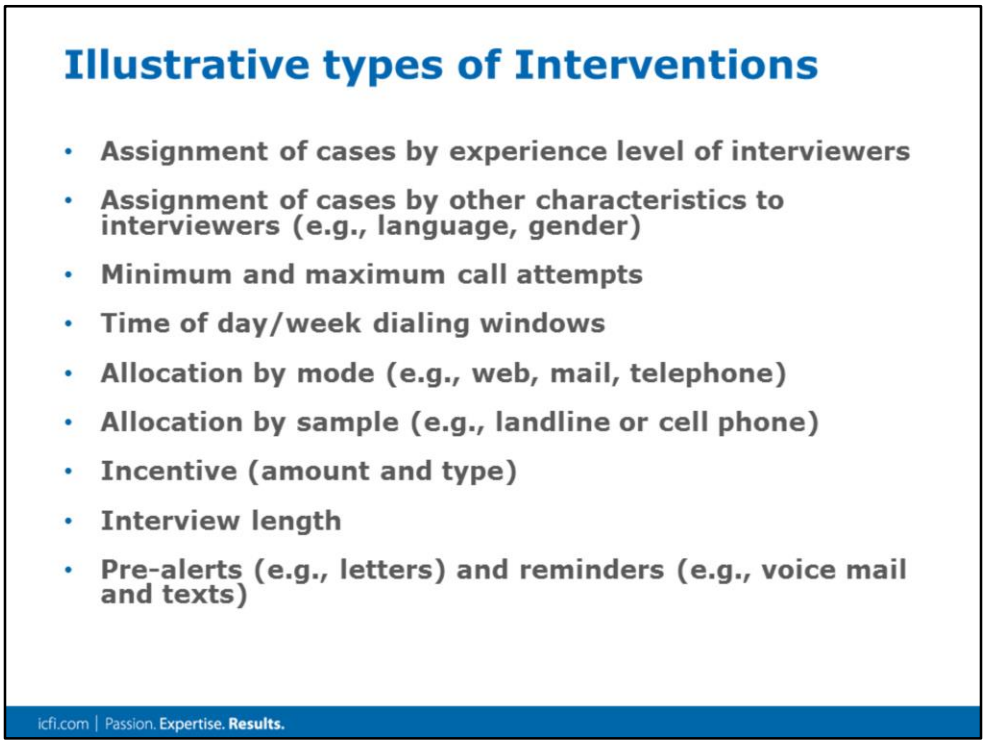
More effort on difficult to reach population targeted
Not same protocol for everyone
Could further adapt protocol with certain subgroups (young)



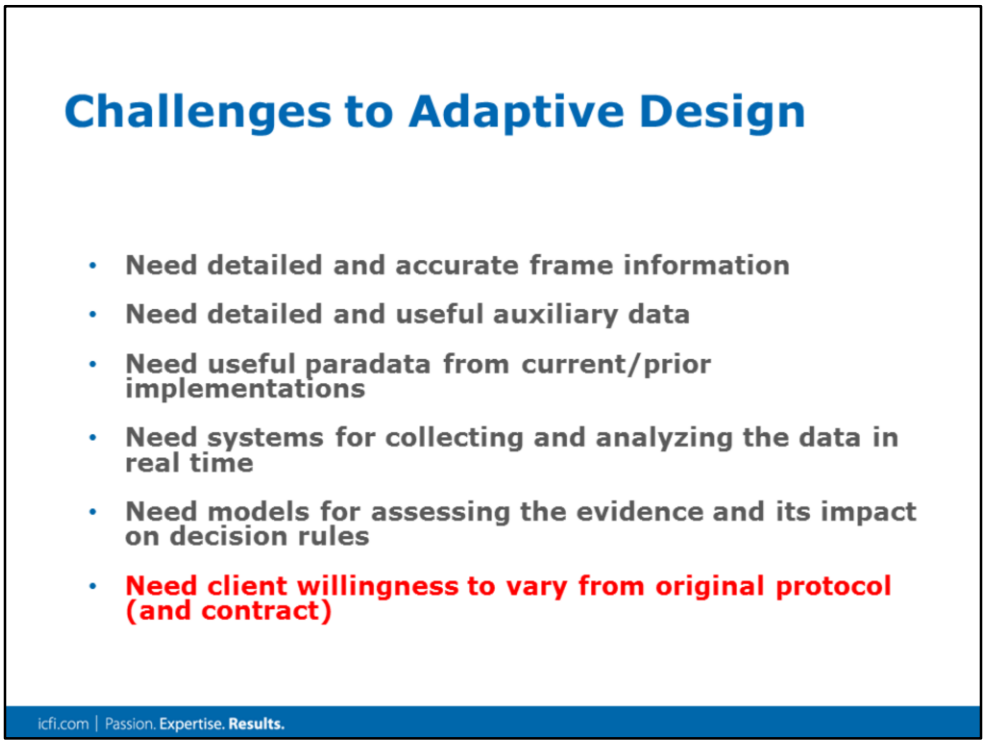
Traditional - adds 10 attempts to protocol for all active records based on not achieving target completes
Static – add 5 attempts to all records thought to be low income or hispanic
Responsive – add 5 attempts to all records with initial refusal
Dynamic is like responsive, but make further changes based on individual record outcomes (refusal, hispanic and selected respondent)



Measurement error – multiple modes. Boating survey. Cheaper to complete by web vs mail – non-response bias in mail and therefore larger overall bias. Phone may have better recall.
Variance – design effects.
Other issues specific to project



ID things that can be altered and alter approach accordingly. Interview assignment based on experience or ethnic background. Gender matching for selected respondent. Core questionnaire / modules



Auxiliary data – MSG/SSI
Red – issues for acceptance by client and contract issues

Limited experiments – start

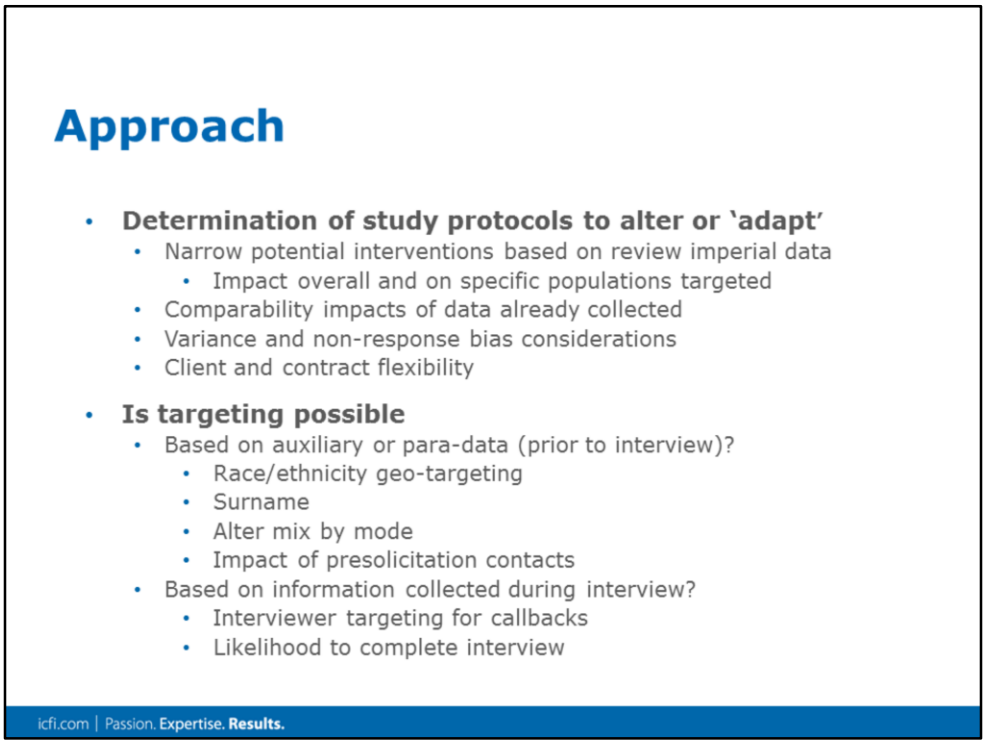
Asked NATS – crash and burn

s/b experience based . Start with single variable, id in advance subgroups. Id in advance that we can improve quality and reduce costs by changing design.

What are the levers – subgroups, treatments, impacts

Talk about multimode data collection platform – no jury-rigging as all modes under one data collection platform.

More attempts work?



Likelihood to complete the interview – refusals, avoidance, etc.

Technology

New technology advances make piloting of adaptive designs more practical

- **More modern data collection systems incorporate:**
  - Sharing of core programming across mail data entry/scanning, CATI, CAPI, Web and other modes
  - Assignment of interviewers to records based on a large variety of 'Skills' (gender, age, experience, etc.)
  - Streamlined incorporation of sample information and other auxiliary data into sample databases
  - Real-time advanced reporting of call outcomes

BRFSS Sample Design (Phone Mode)

- **Dual-Frame mode – Landline and Cell**
  - 2014 - cell any
  - Started in 2008 as cell only, became cell mostly
- **Sample drawn Quarterly, Loaded Monthly**
- **Available Auxiliary Data –**
  - Address matching - LL frame (40 to 60%)
  - Billing Zip - Cell (40 to 60%)
  - Race/ethnic targeting based on expected or imputed zip code.

BRFSS Dialing Protocols

- **Total attempts for landline records are 15; 8 for cell phones.**
  - If a live respondent is reached for the first time at the 12th-15th attempt 4 attempts are added to the protocol to be made either at night or on the weekend
  - On cell, if a scheduled callback disposition occurs on the 8th (last) attempt, make up to 3 additional attempts.
- **Calls are split between 20% daytime, 80% nights and weekends.**
  - 3 minimum attempts in each day part
- **Sample is provided monthly and fields for 30 days.**
- **Average interview lengths range from the high teens to well over 30 minutes.**

BRFSS Dialing Protocols (cont)

- **The following dispositions are final after 6 total attempts, as long as none of the other 5 attempts are contact dispositions:**
  - Temporarily out of service
  - Busy and fast busy
  - Call block
  - Unit is turned off by customer message
  - Person cannot accept calls at this time
  - Outside of Service Area

ICF Enhanced BRFSS Dialing Protocols

- "Soft" refusals are given a cooling off period that range from 4 days at the beginning of the month, down to 1 day at the end of the month.
- If the respondent selection occurs at attempts 12-15, then 3 more attempts are added to protocol.
- If a callback disposition occurs on the cell sample on the 8th attempt, 3 additional calls are made to that record.

Adaptive Designs are a brave new world for the BRFSS

- **Permission grated to experiment with differing required attempts**
  - However, they need more evidence for agreeing to a true adaptive design. 'Show me the money'

To obtain support for 'adaptive designs', we need to prove additional enhancements would lead to increased response rates, reduced weighting effects and/or improved dialing efficiencies.

BRFSS Call Outcome Fast Facts

ICFs 2013 BRFSS Working Sample Records:

Landline - 288,996

Cell – 341,880

Disposition History	Landline	Cell
Complete	14.3%	3.3%
Partial complete	1.5%	0.6%
At least one no answer in the call history	54.8%	41.7%
At least one answering machine in the call history	50.6%	48.5%
At least one scheduled call back in the history	12.2%	6.6%
At least one unscheduled call back in the history	20.9%	19.3%
Final refusal	18.0%	11.7%
At least one soft refusal in the history	23.6%	15.7%
At least 1 hang up in the history	21.6%	14.8%

BRFSS Fast Facts Continued

- **Working records called to full protocol:**
  - 14.7% Landline
  - 45.2% Cell
- **Average number of attempts (working numbers):**
  - 10.0 Landline
  - 5.2 Cell
- **Maximum number of attempts:**
  - 22 Landline
  - 11 Cell

BRFSS Fast Facts Continued

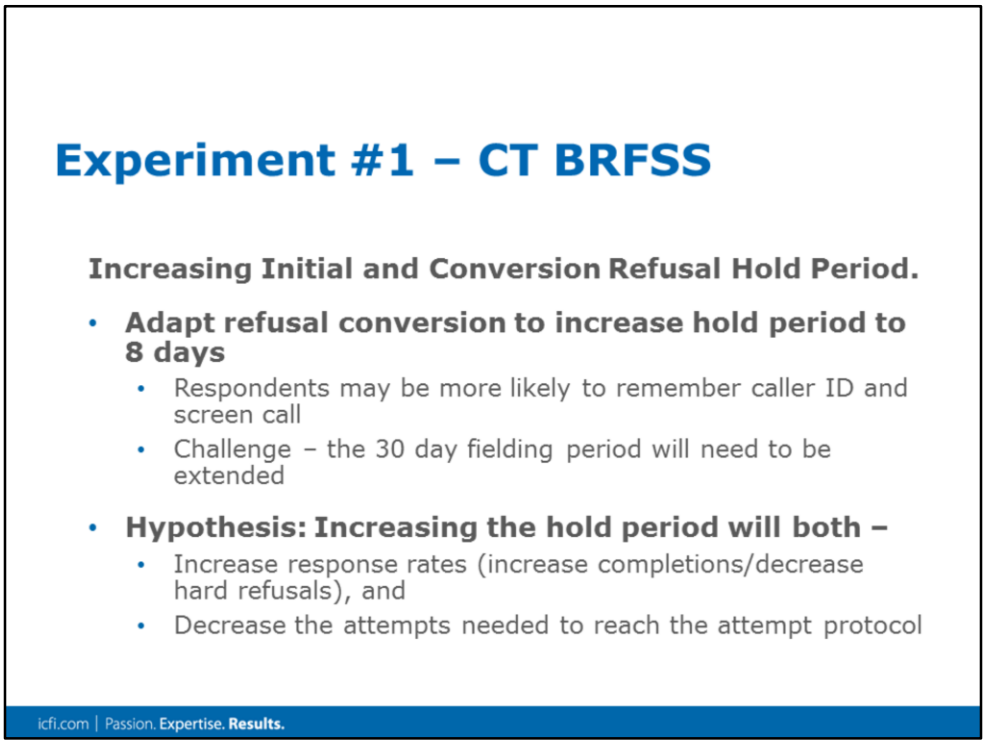
Landline Mode

	Completed Interview	Partial Interview
Males	38.1%	39.2%
Age 55+	67.1%	59.7%
Age 18-24	1.6%	2.8%
Black/African American	6.8%	13.9%
Hispanic	3.3%	5.6%%
HH income less than $20k	13.9%	17.8%

BRFSS Fast Facts Continued

Cell Mode

	Completed Interview	Partial Interview
Males	50.4%	49.6%
Age 55+	26.4%	20.8%
Age 18-24	13.4%	14.9%
Black/African American	7.1%	12.2%
Hispanic	8.8%	12.6%
HH income less than $20k	18.8%	23.8%



One of the first areas we explored is how long we wait to call back a record that initially refuses to make the conversion attempt. CDC doesn't have a set protocol regarding when the conversion calls are made for BRFSS, but we have set up our own program that sets these records to hold for 4 days at the beginning of the month, and that winds down to a 1 day hold for records at the end of the month. We looked at when we were actually completing these records in 2013, and it seems the longer the hold the better, and that the best chance of completion is occurring at 8 days after the first refusal.
The negative affect of this experiment would be that holding a refusal record for 8 days would limit our ability to complete data collection during the normal 30 day period. Before proceeding with this experiment, we received approval from our client to adjust the fielding period.
We conducted an experiment with the February and March sample for the CT BRFSS, and set a firm hold time of 8 days for all first refusals, before we released the records back into active calling. Our hypothesis is that the increased hold time would also increase our completion rate / reduce our overall refusal rate.

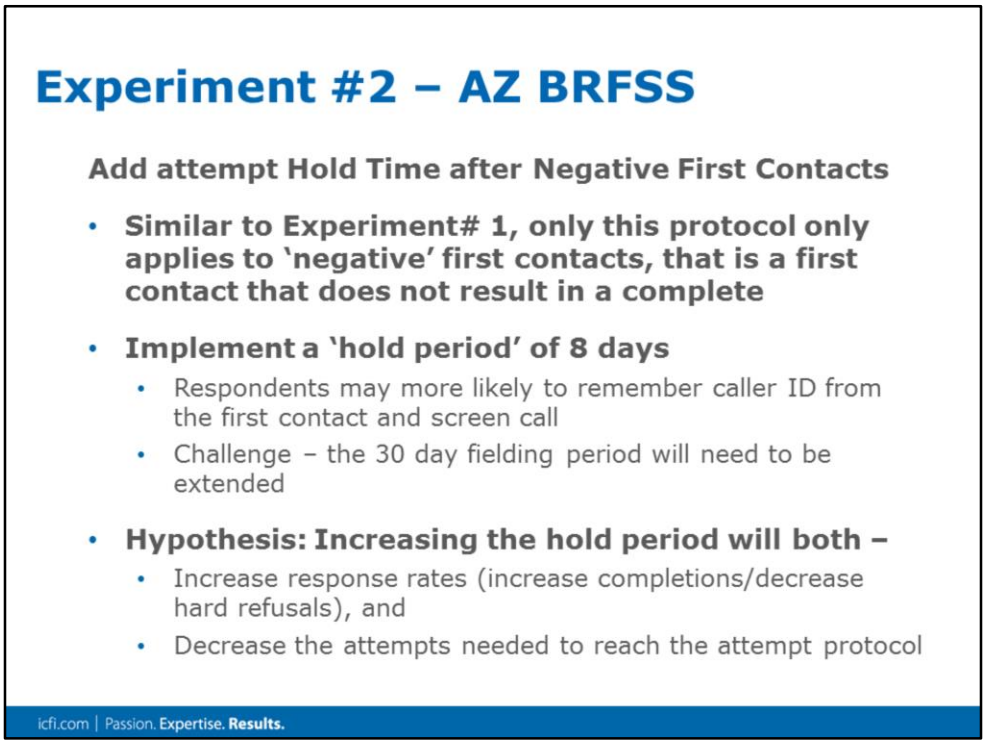
Experiment #1 - Results

- **Experiment Records:**
  - Standard Protocol – 1,314
  - Additional cool-down period protocol – 1,102

- **Non-intervention Group:**
  - Percent Completion following a refusal - 1- 4 day cool-down period – 5.7%

- **Intervention Group:**
  - Percent completing following a refusal – 8+ day cool-down period – 4.9%

- **Significance Tests**
  - No Significant differences



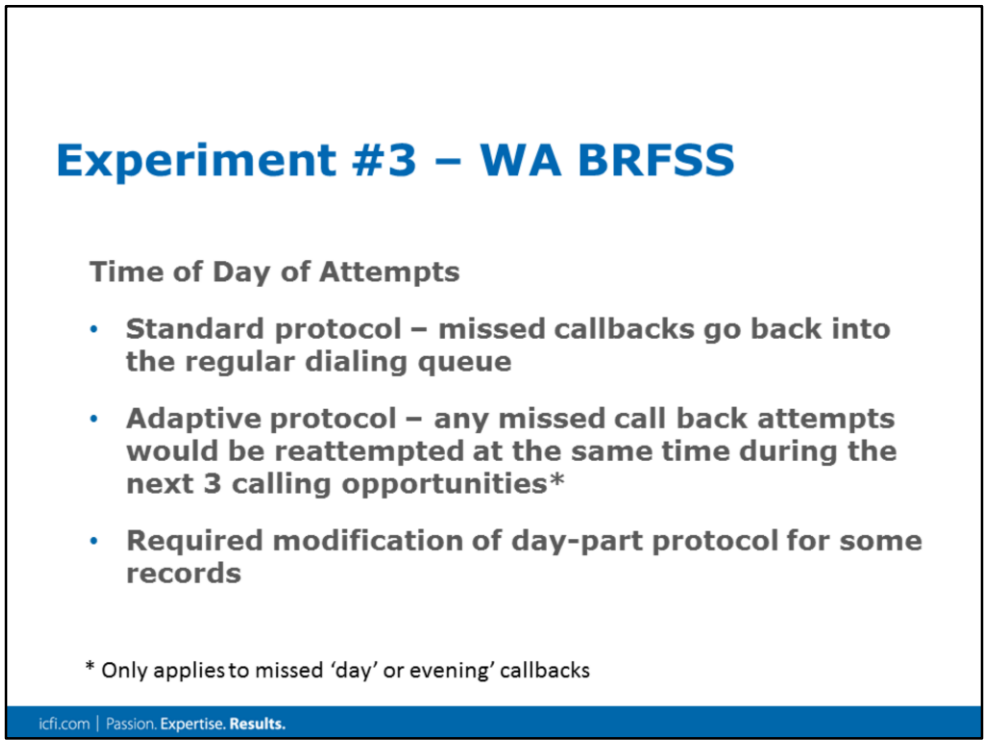
The first contact made with a respondent is the best chance we have of completing the interview. Still, respondents often will attempt to deflect our calls by either simply hanging up, or giving a vague "not a good time" response and saying we can call back later. This person is likely to avoid our call when we call back again, especially if they have a caller ID. Our third experiment looked at any record that had one of these outcomes - a non-specific callback request or a hang up – as their first contact. We then applied a holding period to these records for 8 days before making the next attempt. Our theory was that we would potentially have a better chance of getting a response on the next call, and get a "second chance at a first contact".

Similar to the refusal hold period experiment, the negative affect of this experiment would be that holding a record for 8 days would limit our ability to complete data collection during the normal 30 day period. Before proceeding with this experiment, we received approval from our client to adjust the fielding period. We applied this experiment to the AZ BRFSS for February 2014 data collection.

Experiment #2 - Results

- **Experiment Records:**
  - Standard 1-4 day cool-down – 1,142
  - Additional cool-down – 1,076
- **2013 ICF BRFSS states percent completion following non-productive noncontact – 8.9%**

- **Non-intervention Group:**
  - Percent Completion following 'negative' first contact - 1- 4 day cool-down period – 9.5%
- **Intervention Group:**
  - Percent completing following 'negative' first contact – 8+ day cool-down period – 8.4%
- **Significance Tests**
  - No Significant differences



The next area we explored was at what time of day the attempts to each record are being made, and potentially adjusting those based on call outcomes.

Currently, if a respondent schedules an appointment with us, and they miss the call (we call at the right time, but they don't answer), the CATI system puts the record back into regular calling to meet the attempt protocols. Our experiment was to force the remaining calls into being made at the same time of day - as in daytime, or evening, as the original appointment. For example, a callback requested for 10am resulting in a no answer would get its next 3 attempts during the daytime. We would only apply this experiment to callbacks requested for the daytime and evening – weekends were excluded from the experiment. If after those 3 attempts we still have no additional contact, the attempt protocol is opened back up for the remaining needed attempts. If during those 3 attempts we do make a contact, the result of that contact would determine the future of that record, essentially clearing the forced time of day and making the disposition callback protocol take priority (such as scheduled callbacks, refusals, etc.)

The caveat with this experiment is that a record might get a different total number of attempts in each of the 3 calling occasions (day, night, weekend) than the ideal according to the CDC guidelines. For example, if a respondent requested callback on daytime attempt #3, yet did not answer, under the experiment we would make 3 more attempts during the day, giving that record 40% of their calls during daytime rather than the suggested 20%.

We reviewed this issue with the CDC, and were given permission to apply the experiment as long as a minimum of 6 total attempts to the sample, they would support experimenting with adapting this design. After discussing this issue with our WA BRFSS client, we applied the experiment to the WA BRFSS with the February 2014 data collection.

Experiment #3 - Results

- **Experiment Records:**
  - Standard Protocol – 9,616
  - Treatment protocol – 152
- **Non-intervention Group:**
  - Completion rate for missed callbacks, standard dialing protocol – 16.6%
  - Average number attempts – 13.7
- **Intervention Group:**
  - Completion rate for missed callbacks, same day part call back – 17.1%
  - Average number of attempts – 10.3
- **Significance Tests**
  - No Significant differences

Next Steps

- **Collect additional data on existing experiments**
  - Determine if current experiments result in general increase in response rate and/or reduced effort
- **Refine existing experiments as needed**
  - Target respondent age, race, gender
    - Refusal rates
    - Likelihood to complete full or partial interview
    - Likelihood to screen calls
- **Add additional experiments/interventions**
  - Allocation by mode (e.g., web, mail, telephone)
  - Allocation by sample (e.g., landline or cell phone)
  - Interview length
  - Pre-alerts (e.g., letters) and reminders (e.g., voice mail and texts)
  - Experienced interviewer sample targeting

Next Steps - Continued

- **Pilot for selected males, young adults and minorities:**
  - Shorter interview length
  - Text / mail pre-notification alerts
  - Completion incentives
  - Smartphone or SMS (text) survey options
  - Most experienced interviewers

Questions?

Discussion?

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