Texas BRFSS Methods

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Texas BRFSS
Behavioral Risk Factor Surveillance System

Outline

- Sampling
- Texas BRFSS Methods
- Questionnaire Development
- Pilot Projects
- BRFSS Future

Common Terms

- 100 block or “block”
  - A block consists of 100 telephone #s that differ only by their last 2 digits.
  - 512-458-7100 to 512-458-7199
- MSA – Metropolitan Statistical Area
- HH – Household

Sampling History

- 1987 – 1993: Mitofsky-Waksberg (?)
- 1994 – 1997: List-Assisted Stratified Random
- 1998 – Present: Disproportionate Stratified Random Sampling

- 2002 – Present (exc. 2005): Calling All Phone #s
- 2004: Modification of Sampling Plan to Increase # of Interviews in MSAs.
- 2009
  - Cell Phone Supplement
  - Mail and Web Pilots

Mitofsky-Waksberg (1987 – 1993)

- Cluster sampling technique
- Numbers were randomly selected from blocks generated from the set of all existing area codes and prefixes in the state.
- Three-stage procedure
  - Selected blocks of randomly ordered numbers are screened to determine the HH status of the first number in each block.
  - The numbers in the accepted block are randomly dialed to identify additional HHs.
  - Individual respondents are randomly selected from all adults aged 18+ years living in a HH.
- The completed interviews from a given block constitute a cluster, also known as a PSU.
  - Three records per PSU (generally)

List-Assisted Stratified Random (1994 – 1997)

- Truncated list-assisted sample which included only telephone numbers from blocks with one or more listed household telephone numbers.
- Such blocks were estimated to contain 97.1% of all HH numbers (in 1996 anyway).

Disproportionate Stratified Random Sampling (1998 – 2002)

- All telephone #s is the state were disproportionately stratified by telephone blocks.
- One-plus blocks (high-density stratum) contained at least one published household phone #.
- Zero-blocks (low-density stratum) contained no published #s.
- One-plus and zero block numbers were randomly sampled at a disproportionate rate of 4:1.*
  - *This is assumed for Texas based on CDC Memo.

Disproportionate Stratified Random Sampling (2003 – present)

- Telephone numbers are drawn from two strata based on presumed density of known telephone HH #s.
- High density – listed 1+ block #s
- Medium density – unlisted 1+ block #s
- Sampling ratio: 1.5:1

Sampling in Texas

- 1987 – 2003: Statewide sampling
  - Most interviews came from Houston (proportion of population)
- 2004 – present: Oversampling
  - Each geographic stratum has listed and unlisted phone numbers – sampled at ratio 1.5:1
  - Can get more local estimates
  - Cannot change sampling design in the middle of the year.
  - Areas with adult populations of 30,000 or more.
- Sampling design form due to CDC every October prior to data collection year.
- CDC randomly generates the phone numbers.
- File of phone numbers from CDC sent to our contractor.

CDC Sampling Design Form (2009)

Stratum	Targeted Completes per Month	FIPS Codes of Counties
1	94	Harris County 48201
2	60	Ft Bend County 48157
3	50	Dallas-Plano-Irving PMSA 48085, 48113, 48119, 48121, 48139, 48231, 48257, 48397
4	50	Fort Worth – Arlington PMSA 48251, 48367, 48439, 48497
…15		

List-Assisted Address Matching

- A separate data file of addresses is sent to our contractor for advance letter notifications.
- In 2008…
  - 37.0% of our phone numbers had an address match.
    - 82.4% of our listed phone numbers (denstr=1)
    - 12.0% of our unlisted phone numbers (denstr=2)

Pre-Call Status

- CDC provides a variable called “precall”
  - To be called
  - Pre-screened as non-working
  - Cell phone – PRO – T-S
  - Pre-screened as business
  - Cell phone - Interviewer
- CDC recommends only calling “to be called” #s
- Texas calls all phone numbers since at least 2002 (exc. 2005)
  - 6.5% of interviews in 2008 came from last four categories.

Spanish Interviewing

- We purchase a Hispanic variable code for our sample indicating whether or not the HH will be Hispanic.
- Hispanic HH are called with a bilingual interviewer.
- 2009 is the first year that we are using a TexMex translation of our survey rather than the CDC Spanish translation.
- “Cheat Sheet”

Calling Protocol

- “Cell phone” categories are manually dialed.
- Call up to 15 times.
- Answering machine message left.
  - 4th attempt no HH contact
- 2 refusals
- Randomly select one adult

So How Do Questions Get Added to the BRFSS?

The CDC Process

Office of Management & Budget (OMB)

- OMB has to approve any national surveys that are conducted.
- The BRFSS is a state-level survey and bypasses OMB approval.
- State priorities vs. national priorities.

BRFSS Questionnaire

- Core Questions*
- Rotating Core Questions*
- Emerging Core Questions*
- Optional Modules*
- State-Added Questions

* Nothing is supposed to change in these sections without a 70% vote of the coordinators at the annual conference in March.

Key Working Groups

- CDC BRFSS Working Group
- BRFSS Expert Panel
- Internal/External Review Committees (I/ERC)

Long-Term Plan Through 2010

- CDC BRFSS Working Group
- Developed in 2004
- BRFSS Coordinators agreed to
- Didn't happen
  - Allow for 4 emerging core questions, get many more for "emergencies" – flu vaccine shortage in 2004-2005, Hurricanes Katrina & Rita, and now H1N1.

A comparison…

2008

- 20 min
- 1 survey
- 63 state-added/optional module questions
- CASRO: 48.1%

2009

- 26.7 min (after pan flu)
- Split survey
- 111 state-added/optional module questions
- CASRO: ~46%

Long-Term Plan (2011 – 2015)

- CDC BRFSS Working Group
- Developed in 2009
- BRFSS Coordinators have not agreed to.
- BRFSS Coordinators discussing on Texas hosted conference call next week.

CDC BRFSS Timeline

It takes about two years…

Timeline for 2011 Questionnaire

- Mar 09: RFP sent to CDC programs
- Apr 09: Proposals due from CDC programs
- May 09: I/ERC review
- Jun 09: I/ERC review comments sent to CDC programs
- Aug 09: Cognitive Testing Round 1
- Sep 09: Cognitive Testing Round 2
- Oct 09: CDC program's revise questions
- Nov 09: I/ERC review 2011 questionnaire
- Dec 09 (Feb 10): Draft of CDC questionnaire to coordinators
- Feb 10: Texas coordinator sends CDC draft questionnaire and CDC program proposals to HSUG for comment.
- Mar 10: CDC Proposals voted on by coordinators
- May 10: Revised CDC Draft Questionnaire to coordinators so optional modules may be chosen.
- Jun 10: Texas partner proposals are due for inclusion
- Jul 10: Texas proposals reviewed
- Aug 10: Texas oversamples due to coordinator
- Oct 10: Final 2011 Texas BRFSS Instrument
- Oct 10: Final sampling design to CDC

FV Consumption Questions

- Not counting juice, how often do you eat fruit? Count fresh, frozen, or canned fruit.

- Not counting juice, how often did you eat fruit? Count fresh, frozen, or canned fruit.
- Not counting juice, how many times per day, week, or month did you eat fruit? Count fresh, frozen, or canned fruit.
- During the past month, not counting juice, how many times per day, week, or month did you eat fruit? Count fresh, frozen, or canned fruit.

What would you do?

- 2011 Fruit & Vegetable Consumption Proposal

2011 FV Consumption Questions

Pro-s

- Better data
- Hits objectives & recommendations
- Not every year

Con-s

- Still 6 questions
- Trend data – GONE
- Interviewer burden

What would you do?

- 2011 Fruit & Vegetable Consumption Proposal
- 2009/2010 Carbon Monoxide Detectors & Gasoline Powered Generators Proposal

Carbon Monoxide Detectors & Gasoline Powered Generators – Emerging Core

Pro-s

- FREE data collection of all states

Con-s

- Making all states collect the data even if it's not a state priority
- Lengthens core & reduces state-added section
- Creates a choppy flow if module used
- Proposal states "core" not emerging core

Carbon Monoxide Detectors & Gasoline Powered Generators – Optional Module

Pro-s

- Standardized for all states and CDC
- Data reportable to CDC
- Funding from state program
- Funding from CDC program to BSB

Con-s

- State program may not have the funding
- CDC program may not have funding

Carbon Monoxide Detectors & Gasoline Powered Generators – State-Added

Pro-s

- Flexibility – use what questions are needed
- Reduces data that won't be used
- Funding from state program

Con-s

- State program may not have the funding

The Vote's In for 2010

What happened?

Emerging Core

- Veteran's Mental Health – 20%
- Family Planning – 21%
- Reactions to Race – 27%
- CO Detector & Gas Powered Generators – 28%
- Cognitive Impairment – 33%
- Excessive Sun Exposure – 43%
- Cancer Survivorship (Prev) – 64%

Optional Modules

- Veteran's Mental Health – 83%
- Cognitive Impairment – didn't get result but told approved

Texas BRFSS Process

Health Survey Users Group

- Established in 2005
- Help plan and develop annual questionnaire
- Given quarterly updates on progress
- Data collection methods
- 25 organizations/programs – 80 members

Texas BRFSS Process

- The RFP for questions
  - Documentation
  - Gives everyone a fair chance
  - Educates our interviewers
  - Must be present at July HSUG meeting
- Oversampling

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Question Guidance

- Look at other telephone surveys for questions…
  - NHIS
  - National Survey of Children's Health
  - SLAITS – State and Local Area Integrated Telephone Survey
- BRFSS coordinator can contact other coordinators
- Do some research

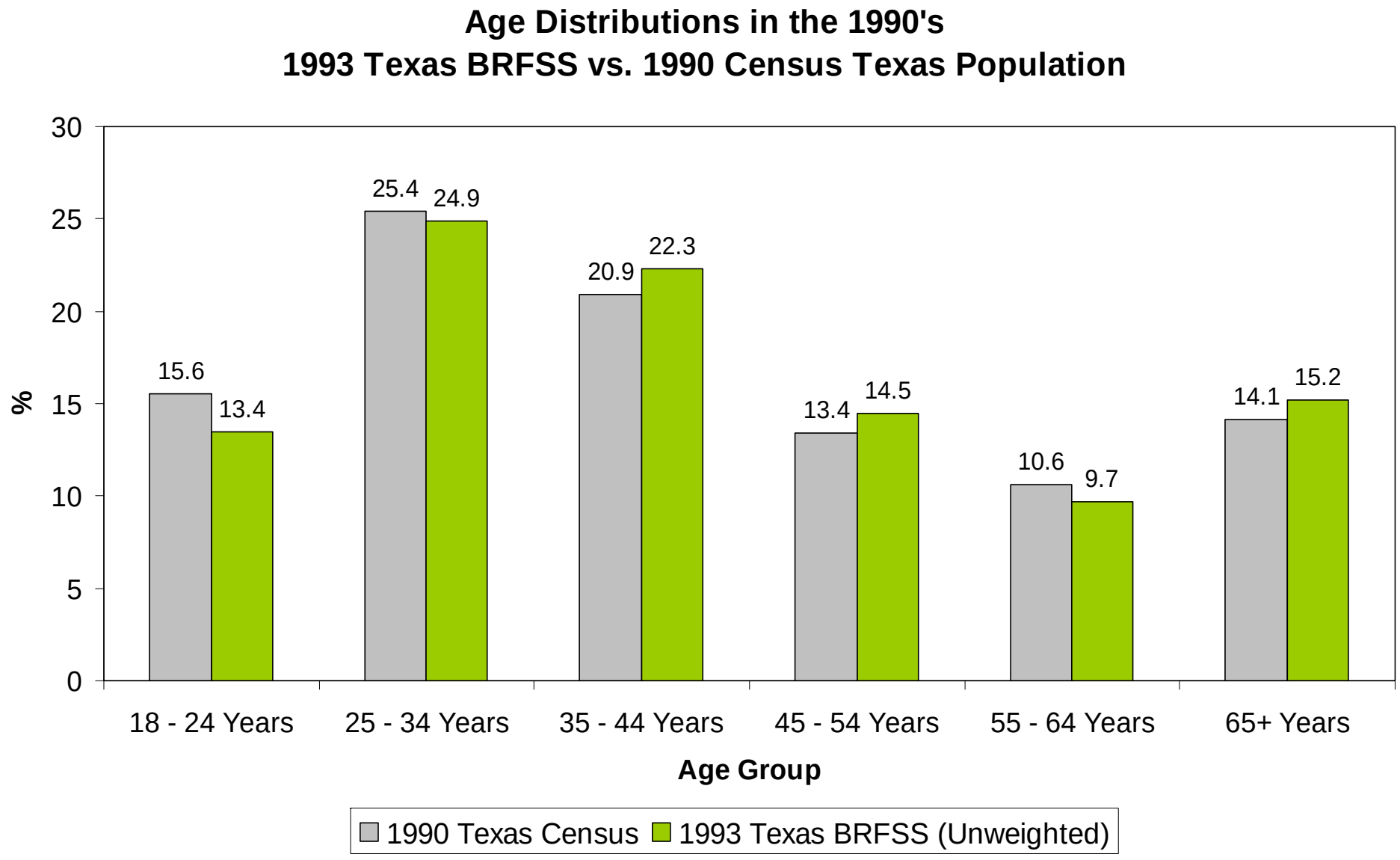
Pilot Projects

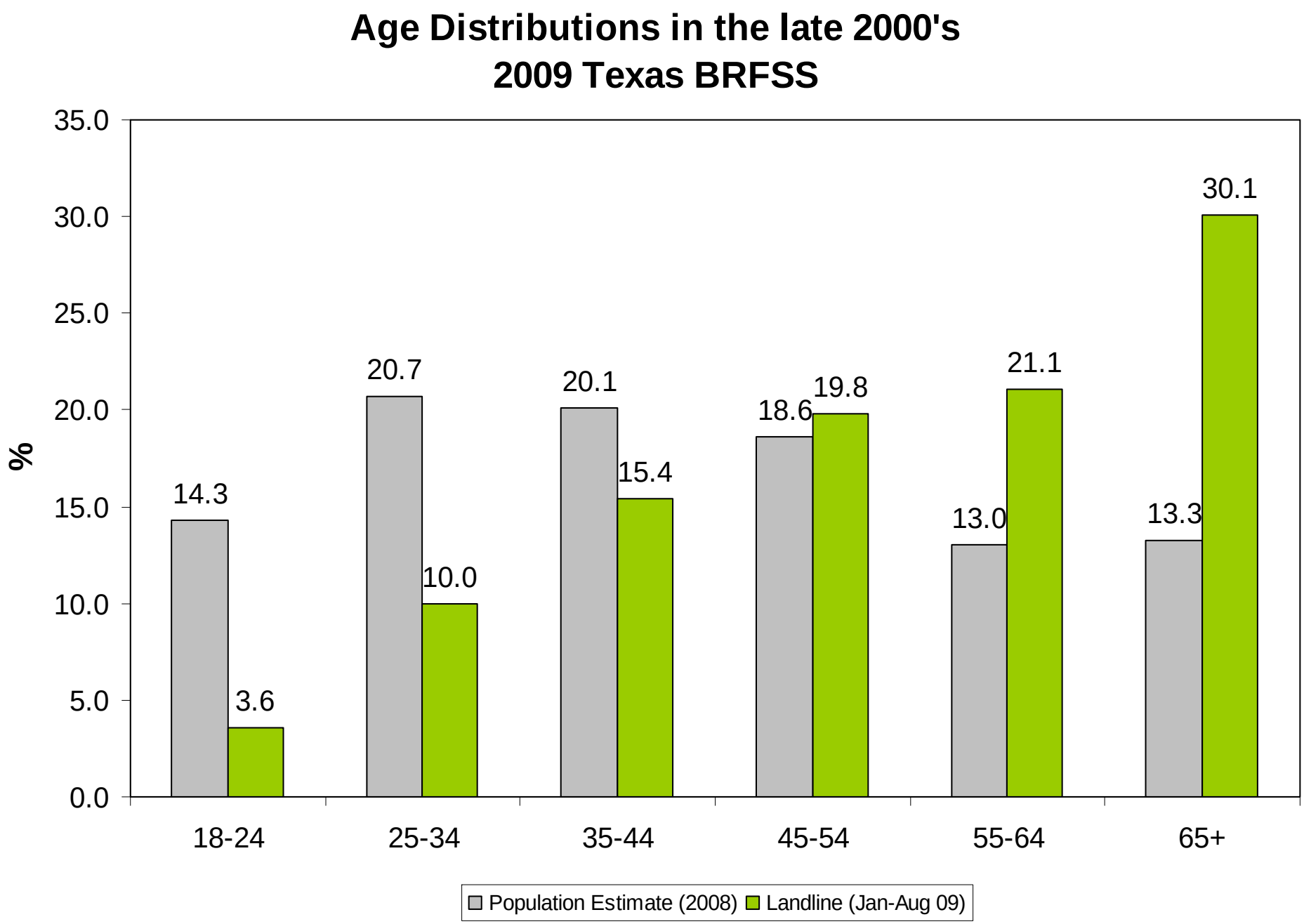
Cell Phone Supplement

Mail & Web Surveys

BRFSS Limitations

- Self-reporting
- Recall bias
- Language barriers
- Telephone coverage
  - Only landlines can be used
    - Working on cell phone supplement
    - Estimated 20.2% are wireless only homes – second half 2008
  - Technology barriers
- Non-response


Age Distributions in the 1990's
1993 Texas BRFSS vs. 1990 Census Texas Population
30
25
20
15
10
5
0
%
15.6
13.4
25.4
24.9
20.9
22.3
13.4
14.5
10.6
9.7
14.1
15.2
18 - 24 Years
25 - 34 Years
35 - 44 Years
45 - 54 Years
55 - 64 Years
65+ Years
Age Group
1990 Texas Census
1993 Texas BRFSS (Unweighted)


Age Distributions in the late 2000's
2009 Texas BRFSS
%
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
14.3
3.6
20.7
10.0
20.1
15.4
18.6
19.8
13.0
21.1
13.3
30.1
18-24
25-34
35-44
45-54
55-64
65+
Population Estimate (2008)
Landline (Jan-Aug 09)

Cellular Telephone Supplement

- Piloted in 2006.
- Required by CDC in 2009.
- No advance letters.
- Just the core questionnaire.
- No geographic stratification.
- 12 call attempts – all manually dialed.
- Voice message left on first attempt.
- No incentives (in Texas).
- Collecting data for other states.
- Response rates are lower than landline survey.
  - YTD Landline (Jan-Aug 09) – 46.2%
  - YTD Cell Phone (Jan-June 09) - ~30%

Get to know your post office…

- Pre-sorted first class is bulk mail.
- Bulk mail does not have to return to sender (RTS).
  - No assurances
- Bulk mail is cheaper.

Mail & Web Survey Pilot Projects

- Advance letters
- Call sample (all phone numbers, not just precall=1)
- If not coded the following, household eligible for pilot…
  - 110/120 – completed landline phone interviews
  - 405 – out of state
  - 410 – HH – no eligible respondent
  - 420 – not a private residence
  - 430 – dedicated fax/data/modem
- 5 different groupings to look at effectiveness
  - Group 1 – No follow-up
  - Group 2 – web survey
  - Group 3 – mail survey
  - Group 4 – web survey then mail survey if they didn't respond
  - Group 5 – mail survey then web survey if they didn't respond

Pilot Protocol

- Calling ends the 21st of each month
- ~1 week for processing
  - Envelope stuffing
  - Postage
  - Labels
- 2nd mail outs occur 3 weeks after first
- Double data entry for mail

Pilot Protocol…Continued

- Advance letters are sent first class.
- Returned letters are entered into a database and seqno's are returned to our contractor to be removed from subsequent mailings.
- Mail survey – bulk mail for cost.
- Postcards – first class mail.
- Add +4 zip code or not?
- To Texas Resident or HH name?

- Phone #s flagged as Hispanic get both an English and Spanish booklet.
- Postcards are bilingual.
- Next birthday to fill out survey.
- First interview received back would be the entered interview (for groups 4 & 5).

Lessons Learned on the Mail Survey

- Review review review
  - Arthritis Burden skip pattern missing.
  - Missing “student” for employment.
- Twice we have received booklets back from the same HH who had received an English and a Spanish booklet.
- Not too many complaints.

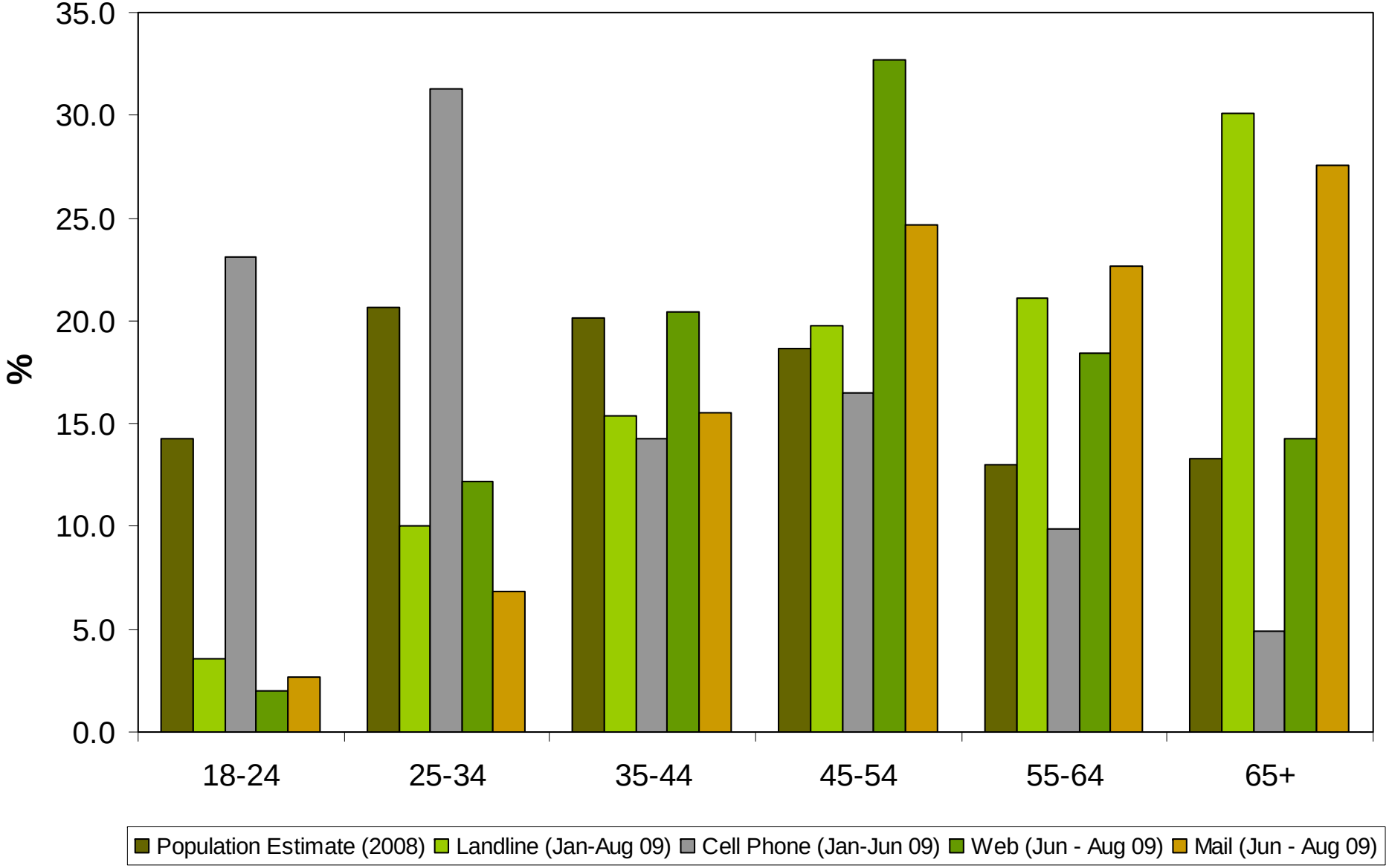
Lessons Learned on the Web Survey

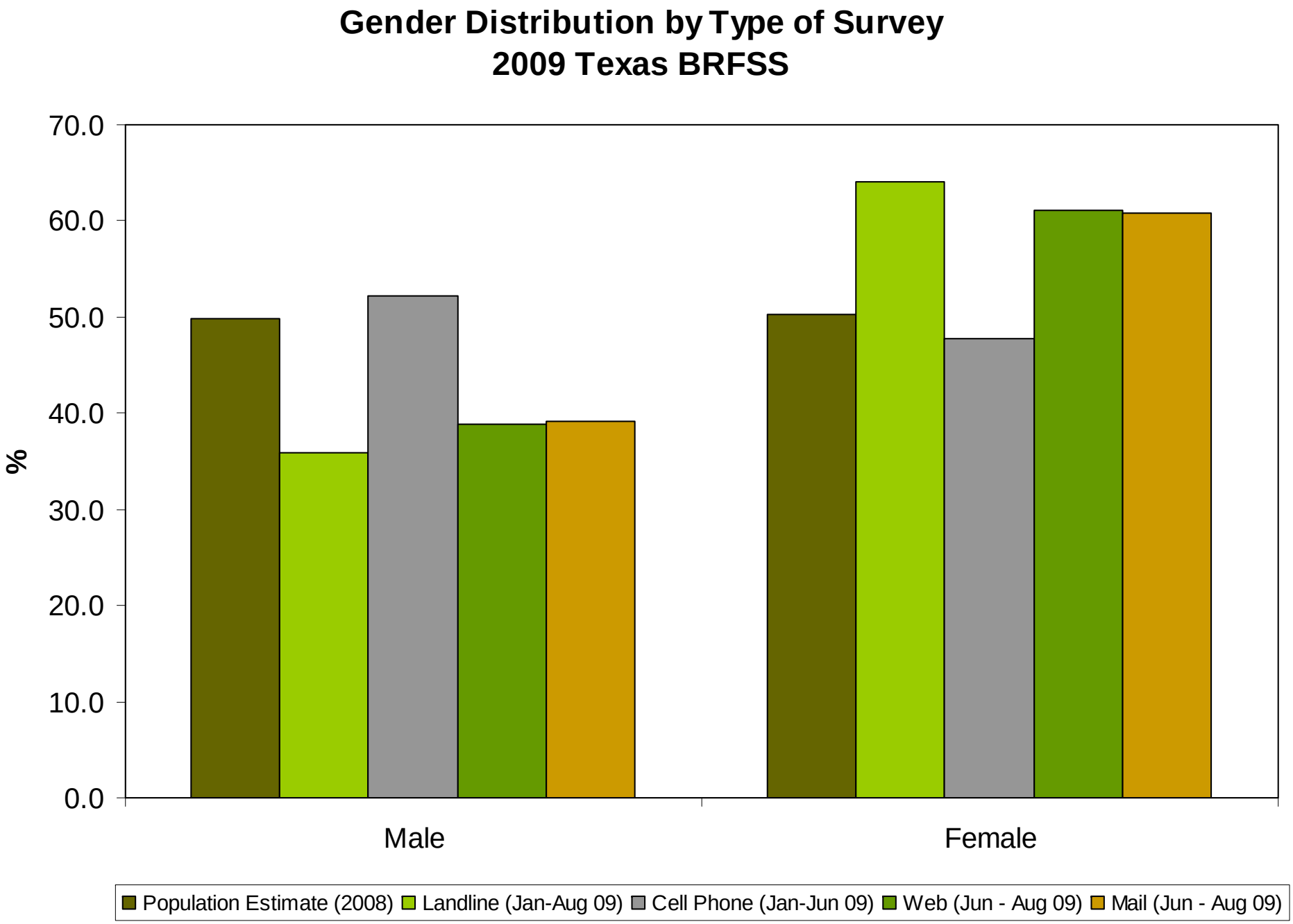
- Not many are going to the website
- Changed “entering phone #” to “entering seqno”

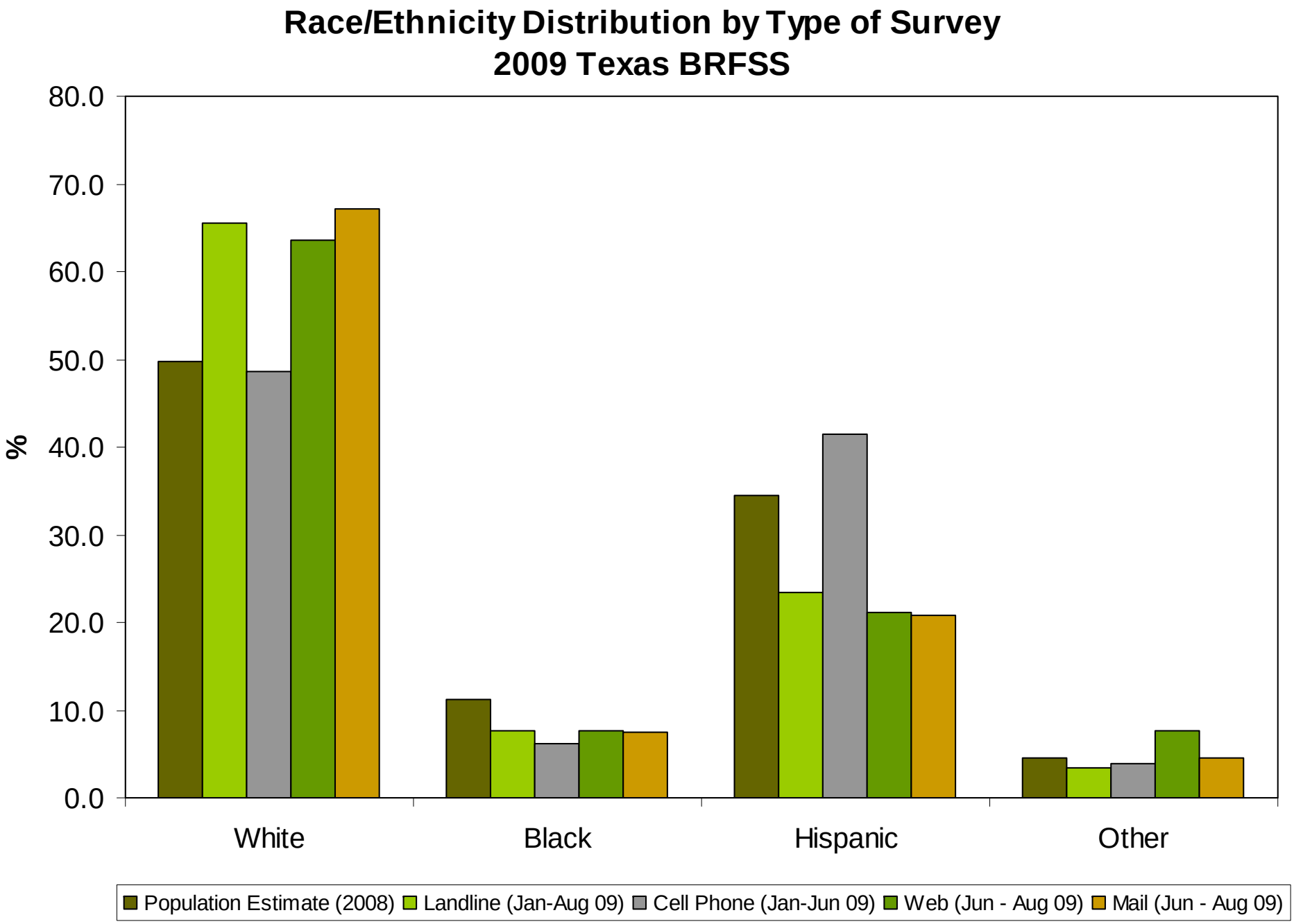
- If change above doesn’t work, we’ll try letters instead of postcards.

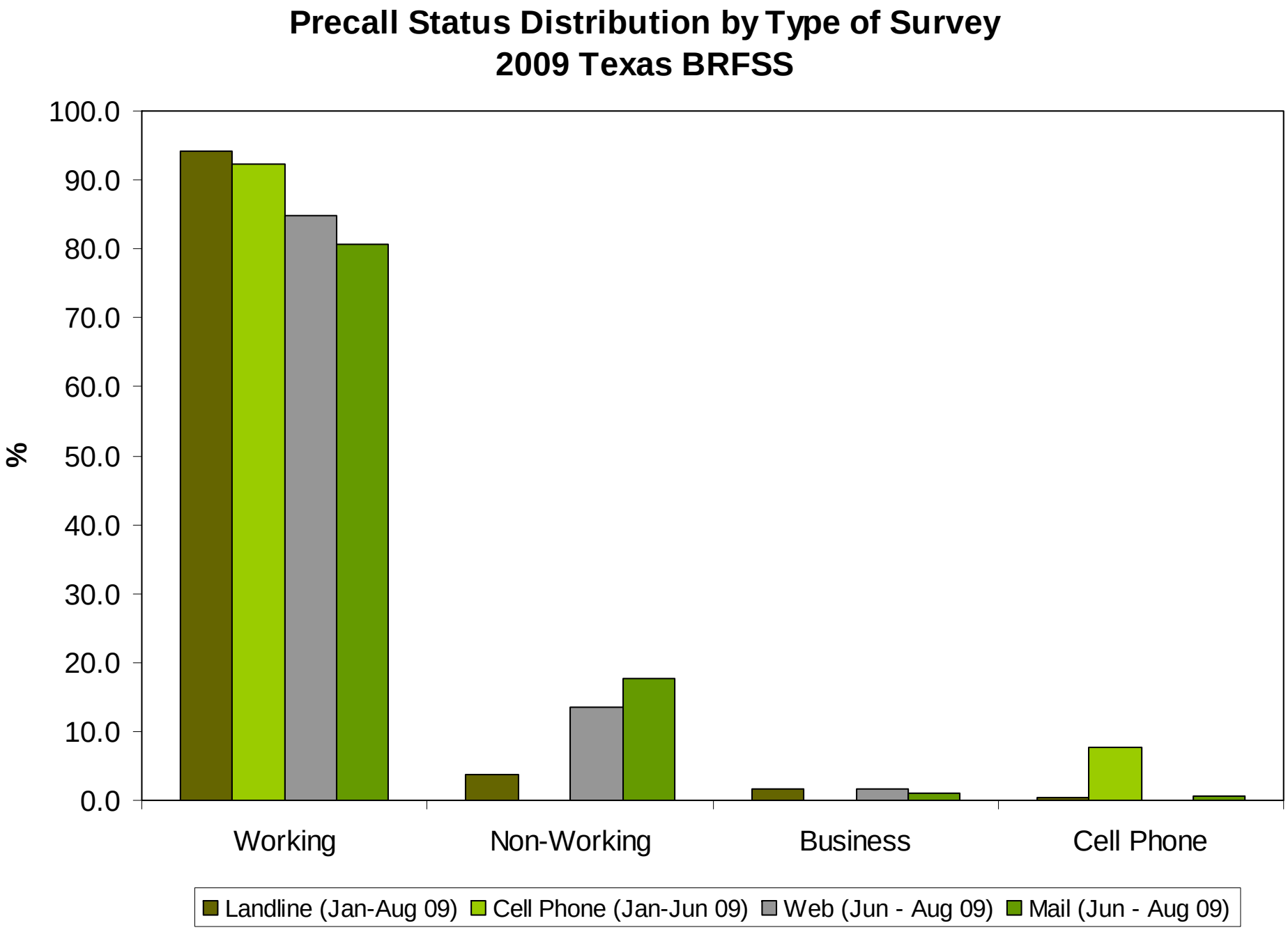
Who are we reaching in the pilots?

Age Distribution by Type of Survey
2009 Texas BRFSS




Gender Distribution by Type of Survey
2009 Texas BRFSS
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
%
Male
Female
Population Estimate (2008)
Landline (Jan-Aug 09)
Cell Phone (Jan-Jun 09)
Web (Jun - Aug 09)
Mail (Jun - Aug 09)


Race/Ethnicity Distribution by Type of Survey
2009 Texas BRFSS
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
%
White
Black
Hispanic
Other
Population Estimate (2008)
Landline (Jan-Aug 09)
Cell Phone (Jan-Jun 09)
Web (Jun - Aug 09)
Mail (Jun - Aug 09)


Precall Status Distribution by Type of Survey
2009 Texas BRFSS
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
%
Working
Non-Working
Business
Cell Phone
Landline (Jan-Aug 09)
Cell Phone (Jan-Jun 09)
Web (Jun - Aug 09)
Mail (Jun - Aug 09)

Questions to be answered…

- Knowing that we are not reaching the hard to reach groups by mail and web, should we continue using those modes?
- Should we just do mail surveys of those with non-working #s?

My current thoughts

- Landline telephone survey.
- Increase cell survey.
- Mail survey of nonworking #s who don't complete landline survey.

- BUT we still need to look at a number of different things this year in the analysis part.

Questions?????