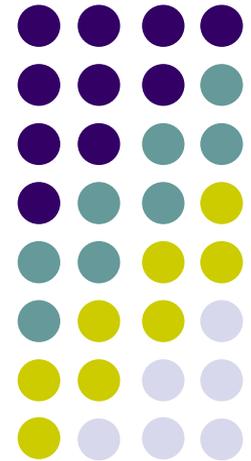


Methodological Uses of TUS to Inform Design and Analysis of Tobacco Control Surveys

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Why is methods research in *Tobacco Surveillance* important?

- Measuring individual behavior over time is crucial to studies of tobacco use
- Tobacco control researchers face a number of methodological challenges that need focused attention, including but not limited to:
 - Declining response rates
 - Measurement (e.g., standardization, validity)
 - Sampling

Methodological issues can affect tobacco control outcome indicators

- Differences in timing (seasonality)
- Consent procedures
- Survey questions and ordering
- Sampling approach
- Participation rates
- Weighting
- Editing/consistency check procedures
- Operational definitions

***Inattentiveness to these
methodological aspects can create the
illusion of positive change, when none
is there, as well as mask successes...***

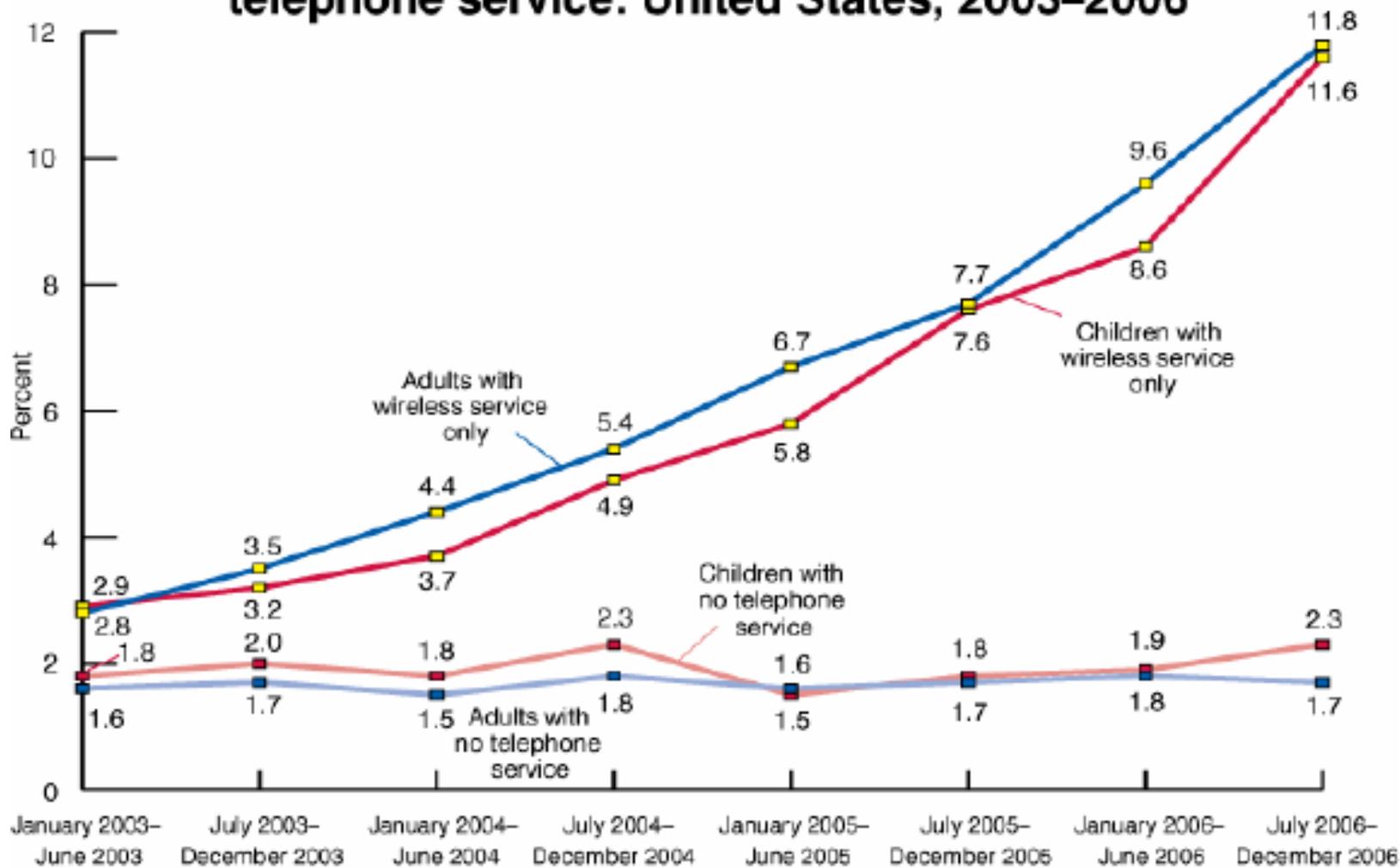
How is TUS useful in this regard?

- Wireless substitution
- Question wording/context effects
- Mixed mode

Sampling, wireless substitution and the RDD Survey

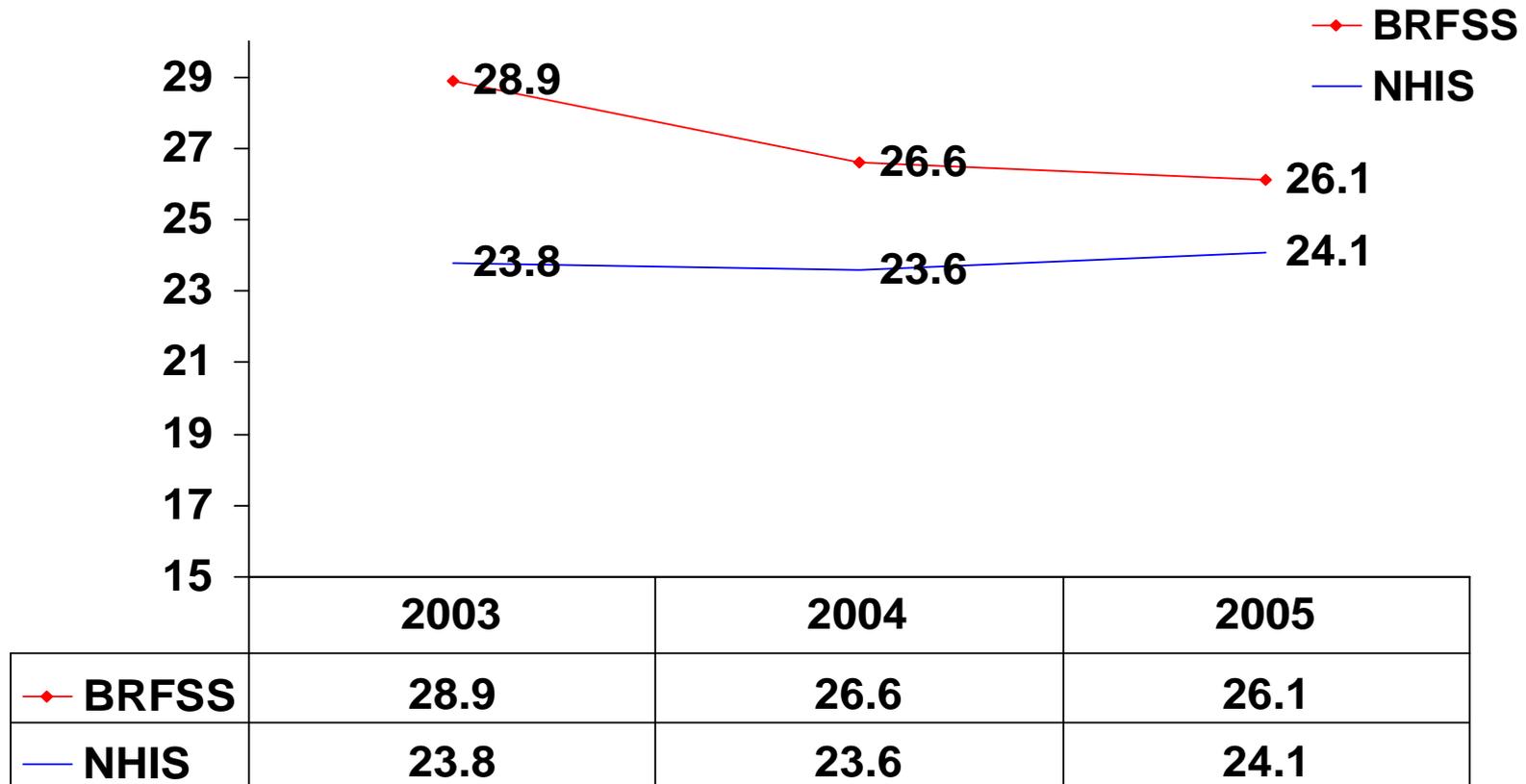
- State programs rely heavily on RDD surveys to estimate smoking prevalence
- An emerging issue for traditional RDD surveys is the exclusion of adults living in cell phone-only households
- Wireless substitution raises questions about the impact their exclusion from RDDs will have over time on prevalence estimates
- In due course, the effect of wireless substitution could mask or exaggerate real variations in prevalence estimates

Percentage of adults and percentage of children living in households with only wireless telephone service or no telephone service: United States, 2003–2006



Source: CDC, National Health Interview Survey

Current cigarette smoking among young adults, 2003-2005, NHIS & BRFSS



Source: Delnevo, Gundersen & Hagman, Declining prevalence of alcohol and smoking estimates among young adults nationally: artifacts of sample under-coverage? *Am J of Epidemiology*, *in press*

Value of TUS?

- The sampling for TUS is an area probability sample and not subject to trends in wireless substitution
- TUS can serve as a “reality check” for states that use BRFSS and/or ATSS

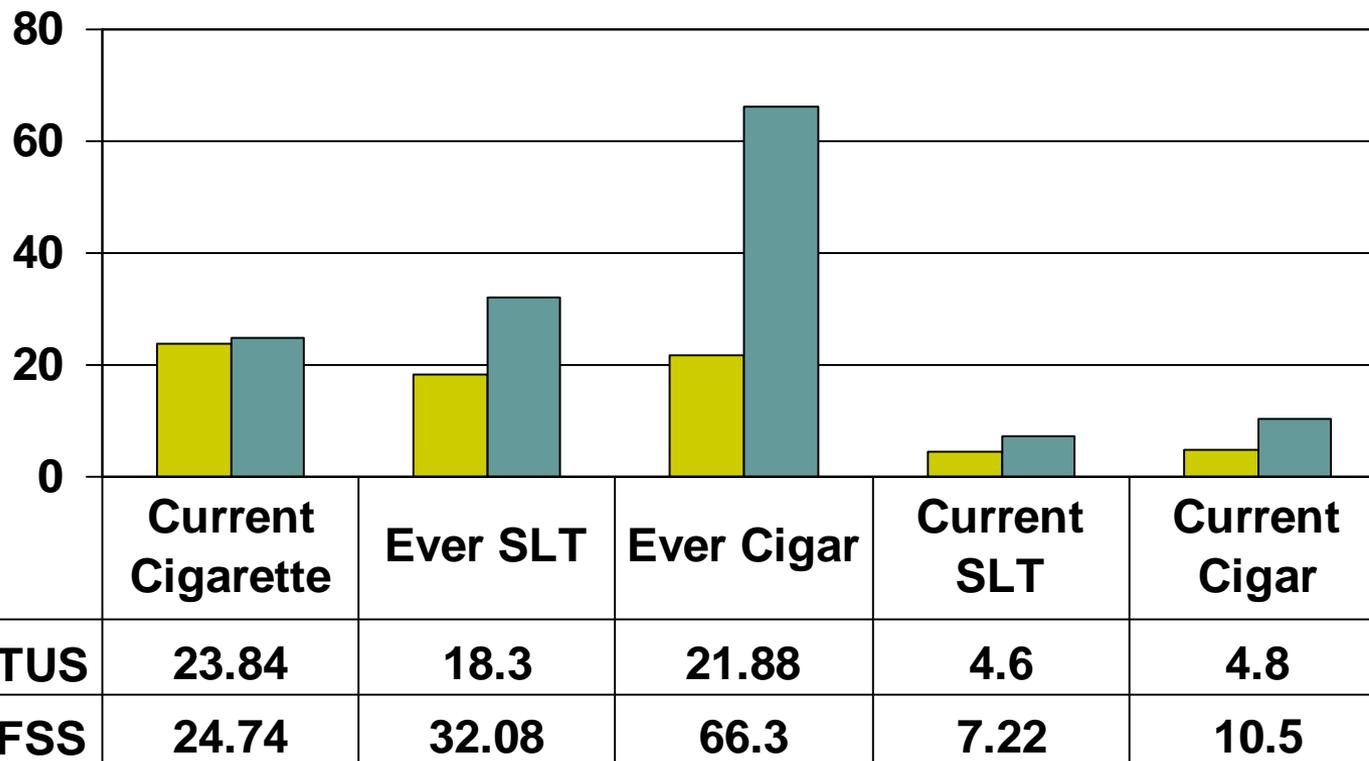
Question wording/context effects

- Differences in operational definitions can impact prevalence estimates
- Ordering of questions on survey instruments can impact responses provided, and respondents' willingness to complete a survey
- Sequencing of questions also important
 - Respondents' answers to one question may affect their answers to the next question in sequence ("context effects")

Cigar smoking survey questions by key tobacco surveillance systems

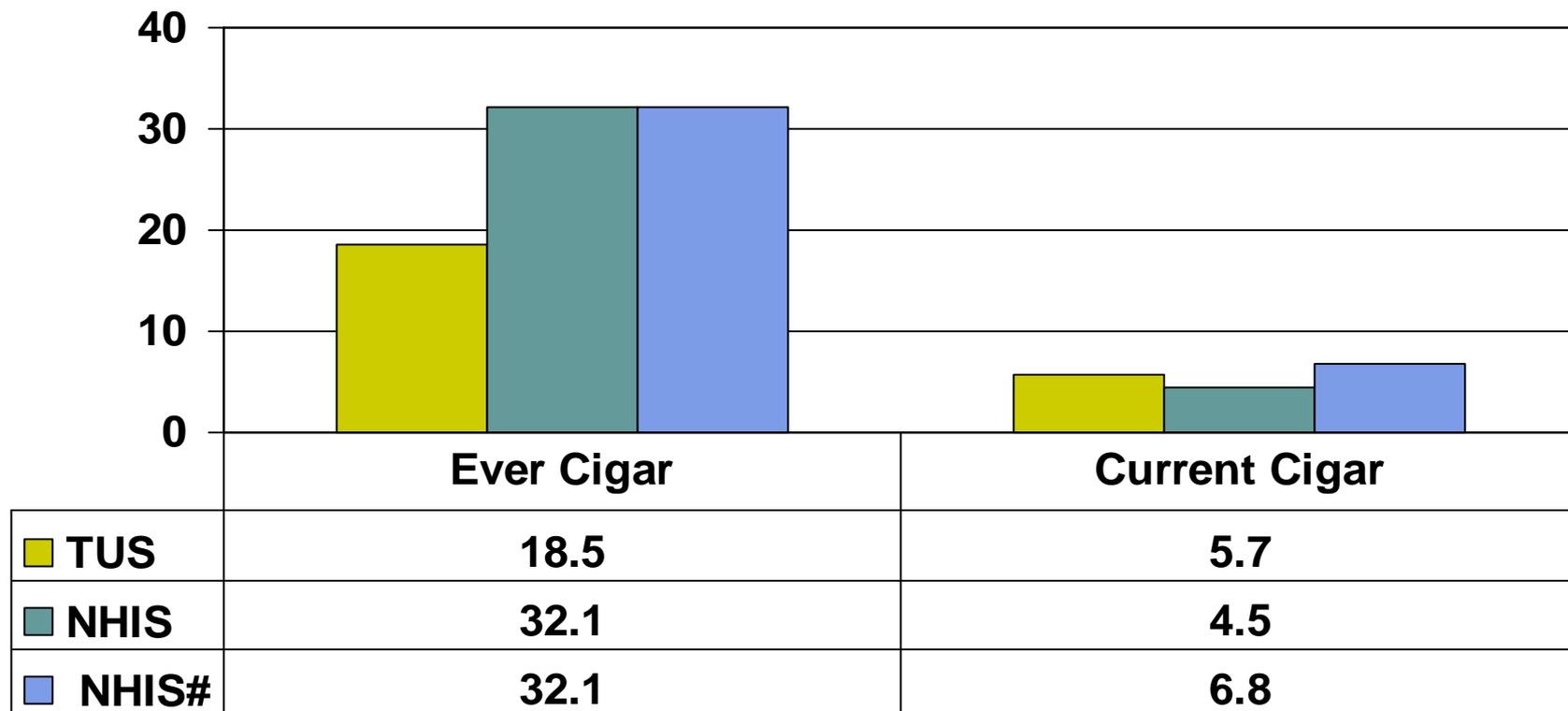
<i>Current Population Survey-Tobacco Use Supplement</i>		
<u>Year</u>	<u>Questions</u>	<u>Operational Definition</u>
2000	EVER used a pipe, cigar, chewing tobacco or snuff? If YES, which ones? If (CIGAR), NOW use every day, some days or not at all?	Current Use defined as smoking cigars everyday or somedays
2001-03	EVER used a pipe, cigar, chewing tobacco or snuff, <u>even one time</u> ? If YES, which ones? If (CIGAR), NOW use every day, some days or not at all?	Current Use defined as smoking cigars everyday or somedays
<i>National Health Interview Survey (Cancer Control Supplement)</i>		
<u>Year</u>	<u>Questions</u>	<u>Operational Definition</u>
2000	Have you EVER smoked a cigar? Have you smoked at least <u>50 cigars</u> in your ENTIRE LIFE? Do you NOW smoke cigars every day, some days, or not at all?	Current Use defined as smoking 50 or more cigars in lifetime and now smoking everyday or somedays
<i>Behavioral Risk Factor Surveillance Survey (Other Tobacco Products Module)</i>		
<u>Year</u>	<u>Questions</u>	<u>Operational Definition</u>
2001-03	Have you EVER smoked a cigar, even one or two puffs? Do you NOW smoke cigars every day, some days, or not at all?	Current Use defined as smoking cigars everyday or somedays

Comparison of tobacco prevalence estimates from two surveys



2001-02 TUS 2001 BRFSS

Comparison of tobacco prevalence estimates from two surveys



■ TUS ■ NHIS ■ NHIS#

Changes in 2006 TUS- “*Ever Use*”

Have you ever used any of the following, even one time?

A cigar including a small cigar? Y/N

A pipe filled with tobacco? Y/N

Chewing tobacco such as Redman, Levi Garrett or Beechnut? Y/N

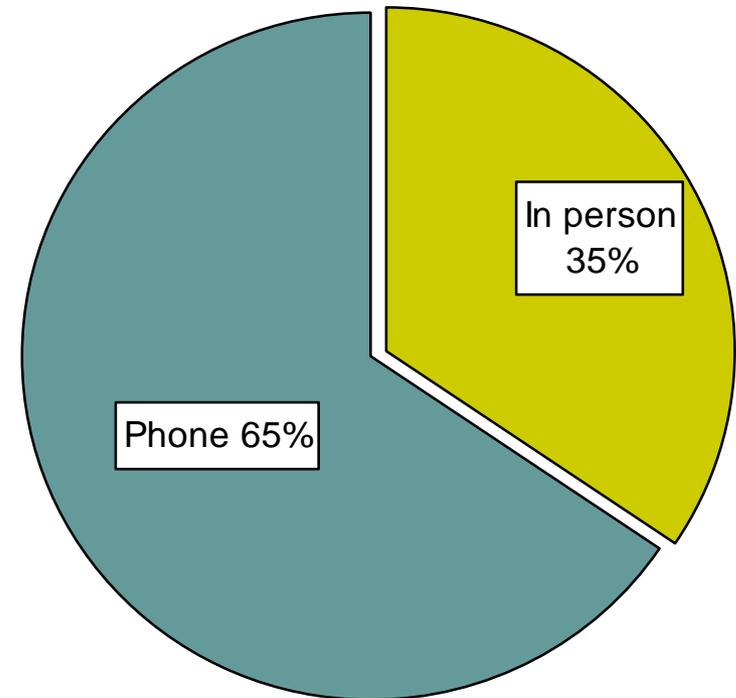
Snuff such as Skoal, Skoal Bandits or Copenhagen? Y/N

Mixed Modes and Mode effects

- Growing interest in mode effects because of the growth in mixed mode surveys
 - Declining response rates
 - Society becoming more fragmented
- Same questions asked in different modes can produce different responses
- Problem of confounding – are differences substantive or just due to mode differences?

Mixed Mode

- TUS utilizes two main data collection modes
 - Computer Assisted Personal Interview (CAPI)
 - Computer Assisted Telephone Interview (CATI)
- Analyzed 2001/02 data, restricted to adult (i.e. 18 years +) self-respondents (n= 184,947)



Mixed Mode – TUS CPS

	In-Person	Telephone	Difference
Gender			
Male	25.7%	21.5%	4.2%
Female	20.4%	17.5%	2.9%
Age			
18-24	26.7%	22.5%	4.2%
25-44	27.0%	22.9%	4.1%
45-64	23.5%	20.0%	3.5%
65+	9.7%	8.8%	0.9%
Race			
White	23.9%	20.0%	3.9%
Black	23.2%	18.2%	5.0%
Asian	15.1%	12.1%	3.0%
Hispanic	16.7%	14.7%	2.0%
Other	38.8%	34.2%	4.6%
Education			
<HS	27.6%	23.9%	3.7%
HS/GED	27.9%	25.2%	2.7%
Some College	23.1%	19.8%	3.3%
College Degree	10.7%	9.5%	1.2%
Total	23.2%	19.5%	3.7%

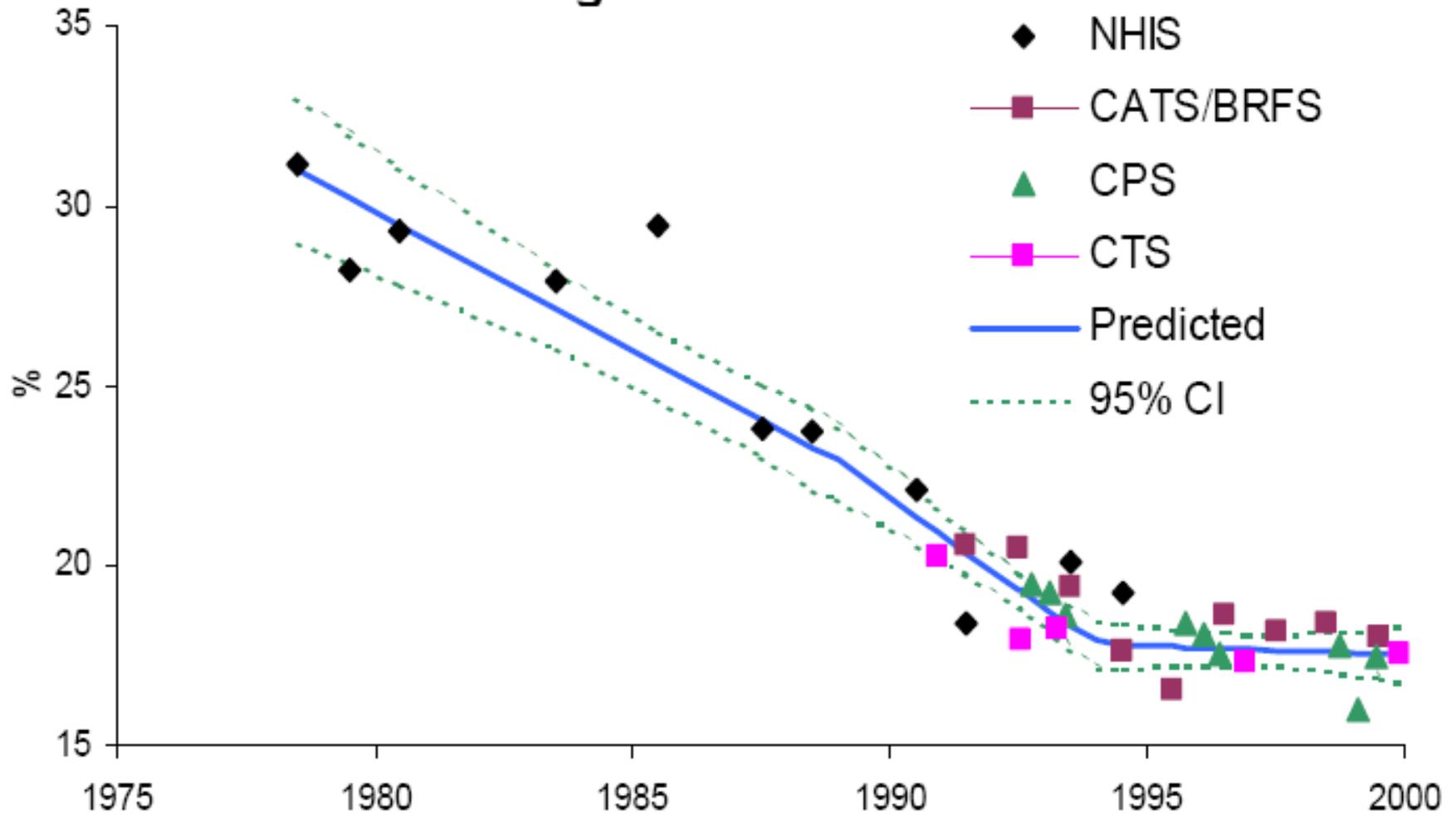
Mixed Mode and TUS

- Mixed mode data collection is an inevitability in tobacco control monitoring and surveillance
- TUS data has unique historical data that can help us understand the implications of mixed mode on tobacco control outcome estimates

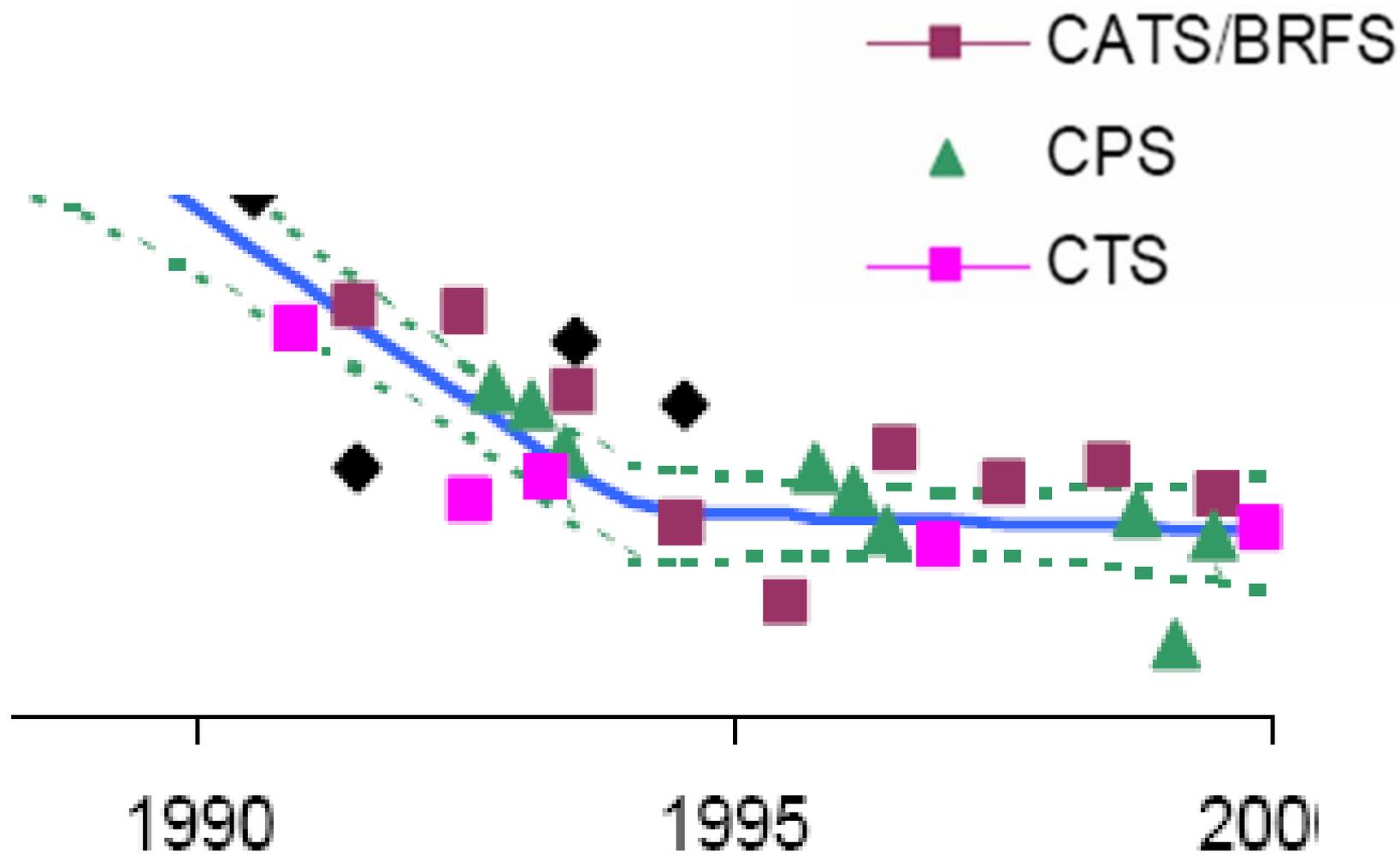
Triangulation

- The use of multiple data elements or methods to observe patterns from several perspectives
- For example, data relevant to prevalence are collected in State (Adult) Tobacco Surveys, BRFSS, and TUS
- Triangulation strengthens study validity, which aids the evaluator to infer valid conclusions

Smoking Prevalence Among California Adults, Aged 18 or Older



Source: Gilpin EA, Emery SL, Farkas AJ, et al. The California Tobacco Control Program: A Decade of Progress, Results from the California Tobacco Surveys, 1990-1999



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Switching to light cigarettes and cessation

- Switching associated with 52% reduced odds of cessation in 2000 NHIS (*Tindle et al., AJPH, 2006*)
- Analysis of TUS also found odds of cessation reduced by 57%
 - Also explored reasons for switching; cessation outcomes varied by reasons (*Tindle, SRNT 2007*)
- TUS's value- improving on prior studies
 - Larger sample size; ~31K (TUS) vs.~13K (NHIS)
 - Richer information on reasons for switching to lights

Opportunities to triangulate tobacco use: *State level data*

	Youth	Young Adults	Adults
<i>Youth Tobacco Survey</i>	Yes		
<i>Youth Risk Behavior Survey</i>	Yes		
<i>Adult Tobacco Survey</i>		Yes	Yes
<i>Behavioral Risk Factor Survey*</i>		Yes	Yes
<i>Tobacco Use Supplement - CPS</i>	15+	Yes	Yes

*Data available thru federal agencies

Opportunities to triangulate tobacco use: *National level data*

	Youth	Young Adults	Adults
<i>National Youth Tobacco Survey</i>	Yes		
<i>National Youth Risk Behavior Survey</i>	Yes		
<i>Monitoring the Future</i>	Yes	Yes	
<i>Behavioral Risk Factor Survey</i>		Yes	Yes
<i>Tobacco Use Supplement - CPS</i>	15+	Yes	Yes
<i>NHIS</i>		Yes	Yes
<i>National Household Survey on Drug Abuse</i>	Yes	Yes	Yes

Summary: TUS and methods research

- An excellent resource for “triangulating” findings
 - National level- very rich data, large sample sizes
 - State level- comparison to state-specific RDD surveys increases confidence in study findings
 - Especially in the context of wireless substitution
- Mixed Mode data collection
 - We need to better understand mixed mode from a surveillance perspective