

# Sampling Techniques Used to Select a Nationally Representative Sample of WIC Participants for the WIC Infant and Toddler Feeding Practices Study – 2 (ITFPS-2)

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# Survey Objectives

- Examine the differential effects of Women, Infants and Children (WIC) policies and practices on early childhood nutrition (e.g., breastfeeding practices).
- Longitudinal study (prenatal – 36 months, 13 interviews)
- Provide updates to measures/analyses from earlier studies.
  - ❖ 1994 Infant Feeding Practices Study (IFPS)
  - ❖ 2008 Nestlé Feeding Infants and Toddlers Study (FITS) and IFPS-2

# Original Sampling Plan

- Nationally representative sample of WIC enrollees (infants).
- 2-stage sampling of 80 WIC sites.
- Recruitment window assigned to each site based on new enrollee flow rate.
- Sample approximately 98 new WIC enrollees per site during an assigned recruitment window.
- Oversample certain demographics for increased precision of estimates for certain subgroups from designated interviews.

# Original Sampling Plan

- All new WIC enrollees during an assigned recruitment window were to be asked to participate the study at the WIC site.
- Half of new WIC enrollees were to be sampled as core sample and the other half as supplemental sample.
- Supplemental sample was to be subjected to subsampling algorithm to sample only the subgroups which needed added precision for subgroup analyses conducted in certain interviews (e.g., estimates from 1-month interview, but not prenatal).

Interview	Core sample	Supplemental sample
Prenatal	x	
1-Month	x	x
3-Month	x	x
5-Month	x	
7-Month	x	x
9-Month	x	
11-Month	x	
13-Month	x	x
15-Month	x	
18-Month	x	
21-Month	x	
24-Month	x	x
30-Month	x	x
36-Month	x	x

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- Imperfect frame of WIC sites.
- Oversampling certain subgroups when no national frame of WIC enrollees available.
- Approximately fixed number of participants per site required.

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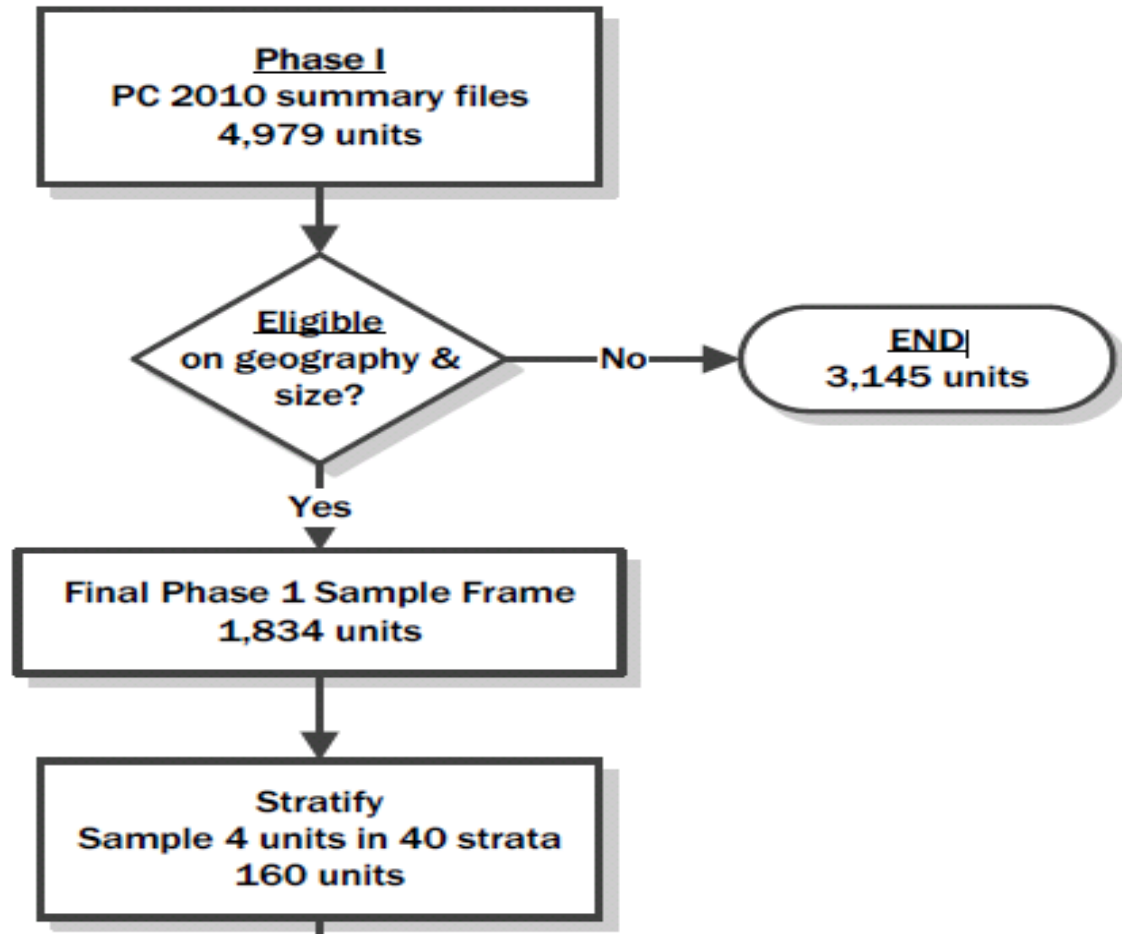
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- Built frame from list of reporting units<sup>a</sup> = local agencies or individual sites.
  - Used two-stage sampling.
- Current eligibility of each reporting unit was unknown.
  - Used two-phase sampling in the 1<sup>st</sup> stage to select 80 eligible reporting units.
    - ❖ Create measure of size (MOS) for phase 1 using the estimated number of new enrollees based on the April 2010 enrollment counts from the PC 2010.
    - ❖ Sampled 4 reporting units per stratum (40 strata) with probability proportional to MOS.
    - ❖ Determined eligibility of each reporting unit.
    - ❖ Subsampled 2 eligible reporting units per stratum with equal probability.

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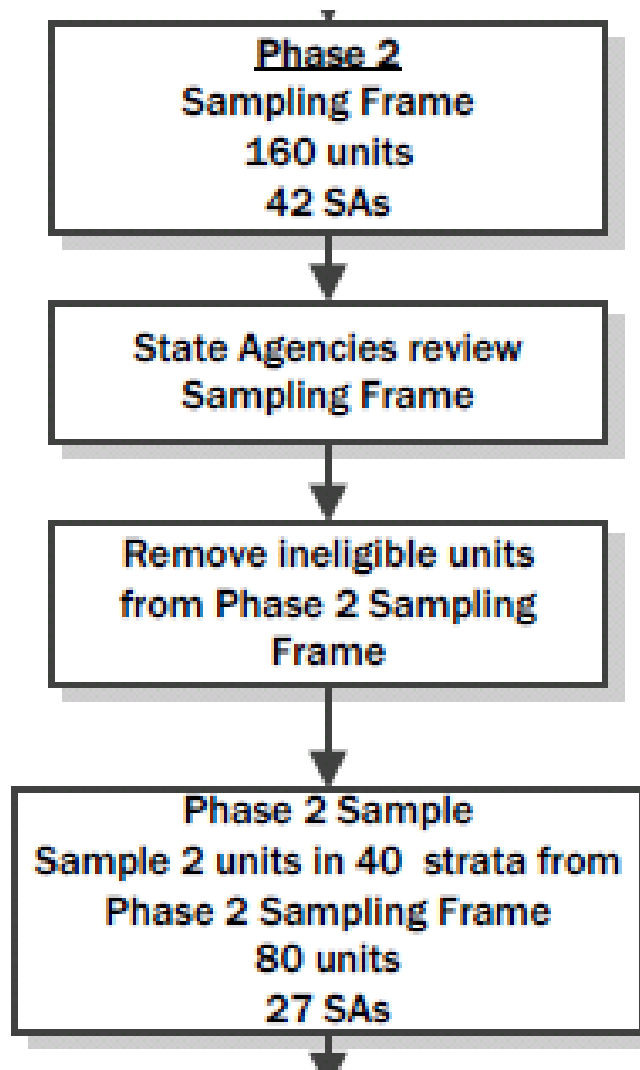
## -Stage 1, Phase 1-





# Sampling WIC Sites

## -Stage 1, Phase 2-



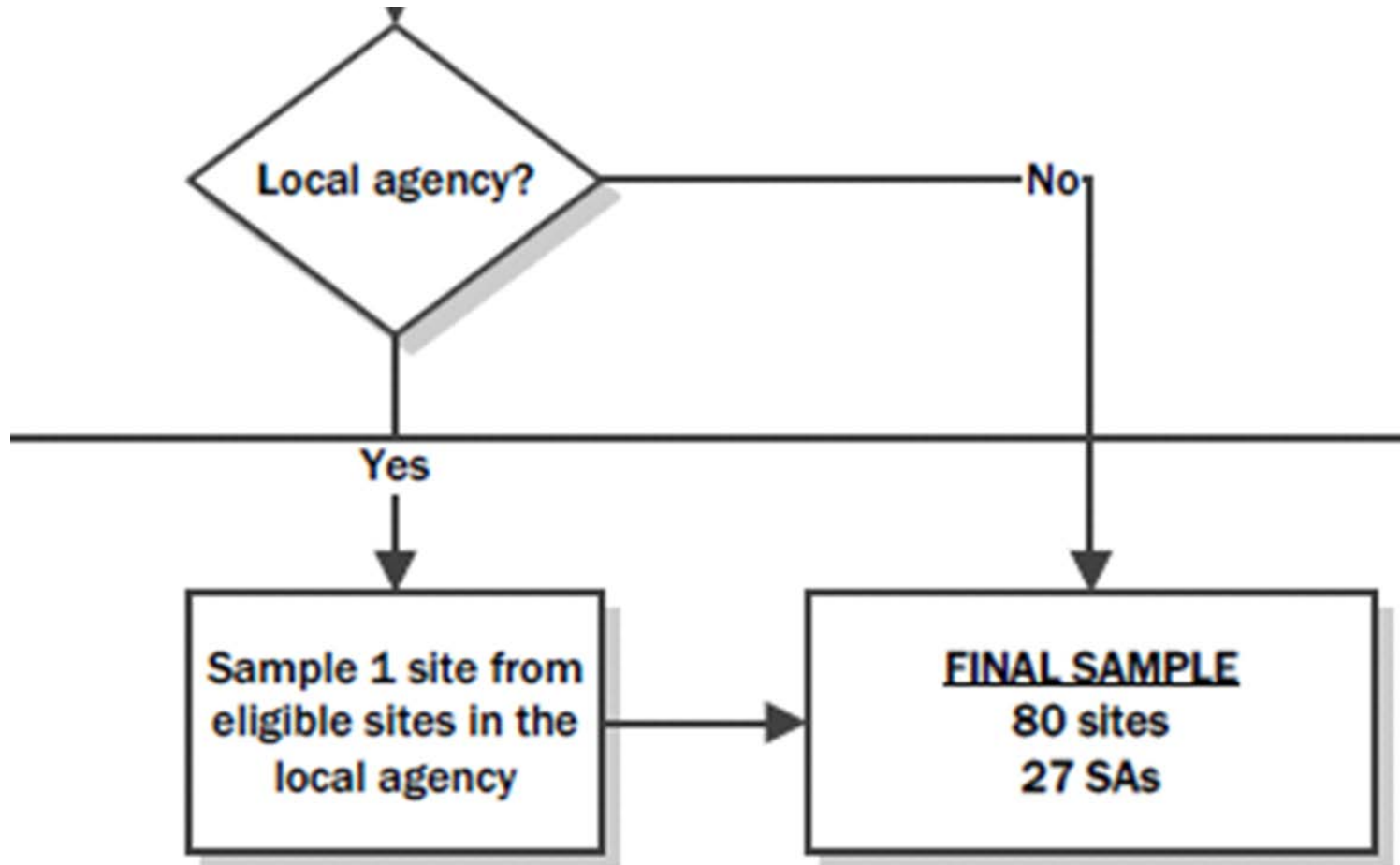
# Sampling WIC Sites

## -Stage 2-

- If a sampled reporting unit in stage 1 was a local agency, sample one site among eligible sites within each sampled local agency (with probability proportional to MOS).
  - Result in a sample of 80 sites.

# Sampling WIC Sites

## -Stage 2-



## Challenge #2: No National Frame of WIC Enrollees

How to sample infants at a selected site?

- Targeted approximately *98 new WIC enrollees* per site.
- Determined a *recruitment window length* for each site based on average daily flow and schedule.
  - Initial window lengths ranged from 4 days to 77 days.
- Problems encountered with recruitment windows:
  - ❖ The site enrollment schedule  $\neq$  The site operation schedule.
  - ❖ WIC site enrollment schedule and flow varied per site.
  - ❖ WIC site average daily eligible enrollment varied.
    - Needed to get updated enrollment information from each site.

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24-Month	x	x
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36-Month	x	x



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- Designated 50% of new enrollees to Core sample and 50% to Supplemental sample (original plan).

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- Subsampled important subgroups in supplemental sample to take more enrollees from rarer subgroups.
- Subsampling rates based on precision requirement and population distribution.

	Target		
	Core	Supp	Total
Total attempted to recruit	3920	3920	7840
Total consented & enrolled	2804	1186	3991

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  - Increased the proportion of sampled cases designated to Core to 87.5%.
  - Eliminated subsampling in the Supplemental sample; Supplemental sample became "take all" once change was in place (not retroactive).

	Target			Actual		
	Core	Supp	Total	Core	Supp	Total
Total attempted to recruit	3920	3920	7840			6775
Total consented & enrolled	2804 (70%)	1186 (30%)	3991	3503 (80%)	864 (20%)	4367

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- A flexible, creative approach was key.
- Successfully overcame challenges by making informed decisions that maintained the integrity of the sample and the quality of the data.
  - Two-stage sampling and two-phase sampling in the first stage to select 80 sites.
  - Oversampling of certain demographics by taking 2 samples (core and supplemental).
  - Assigning recruitment window considering updated individual site information.
  - Monitor sampling progress and make adjustments to meet the goal (sampling rate change, global extension of recruitment window).
  - Participant level base weight is calculated by  $1/\{\text{Pr}(\text{selecting site}) * \text{Pr}(\text{selecting individual in a site})\}$ .

# Thank you!

Questions? Comments?  
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