Attachment B

MEMORANDUM FOR Documentation

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Subject: A Basic 6-Cell NR Bias Adjustment Scheme for YVCES

Introduction/statement of problem

The 2008 YVCES will sample from those in the appropriate age group who were eligible for the 2007 CPS Volunteer Supplement (VS), plus (from supplement-eligible households) teens who were ineligible for the supplement due to being under 15.

We know that volunteerism is subject to nonresponse bias: people who do not volunteer are disproportionately likely to be survey nonrespondents (Abraham et al, 2007). There's no established means of adjusting for this: this is new ground.

The proposed approach

Since the YVCES samples from the VS, my thought is that a catch-and-release approach, while usually used to estimate an unknown *number* of persons in a cell, could be used to estimate indirectly the *proportion* of volunteers in the cell of nonrespondents to both the YVCES and the VS.

The idea is that we will know from the YVCES the proportion of volunteers who were respondents to the YVCES, broken down by whether they (a) were or (c) weren't respondents to the VS. We also will know from the VS the proportion of volunteers (b) who responded to the VS but not the YVCES. But we will not directly know the proportion of volunteers among (d) the nonrespondents to both the VS and the YVCES.

What I'd like to say is that with respect to the proportion of volunteers, the ratio of (c) to (d) should be similar to that of (a) to (b).

Details:

The supplement-eligible sample can afterwards be divided into four NR bias adjustment cells, based on whether eligibles did or didn't respond to the YVCES and/or the VS.

We will also have the too-young group, which we'd only have YVCES data on, so we'd only have two cells for them: YVCES respondents, and YVCES nonrespondents.

The cells are shown in the following chart. Let a through f be the volunteerism rates for each of the cells.

	YVCES		
VS		**R**	**NR**
	R	a	b
	NR	c	d
	Too Young	e	f

We will know a, b, c, and e, but not d or f.

First, we'd need to compare a and b. If b is not significantly less than a, we wouldn't have evidence of NR bias in the YVCES survey, and we'd do a normal NR adjustment. For the rest of this discussion, though, we'll assume that b is significantly lower than a.

We would then assume the same drop-off in volunteerism proportion between c and d (and e and f) as between a and b. So if a and b were 50% and 30%, we'd multiply c and e by 30/50 to get d' and f', the indirect estimates of d and f, respectively, that we'd use.

Example:

Counts (V=volunteers, NV=nonvolunteers):

	YVCES		
VS		**R**	**NR**
	R	1500 V, 1500 NV	1500V, 3500 NV (from VS)
	NR	100 V, 400 NV	1500 (V status unknown)
	Too Young	600V, 900 NV	3500 (V status unknown)

Volunteerism Proportions:

	YVCES		
VS		**R**	**NR**
	R	.50	.30 (from VS)
	NR	.20	d (unknown); d' = .12
	Too Young	.40	f (unknown); f' = .24

In this example, d' = .20 * (.30/.50) = .12; f' = .40 * (.30/.50) = .24.

This would lead us to derive the following counts:

Revised Counts (V=volunteers, NV=nonvolunteers):

	YVCES		
VS		**R**	**NR**
	R	1500 V, 1500 NV	1500 V, 3500 NV (from VS)
	NR	100 V, 400 NV	180 V, 1320 NV (from d')
	Too Young	600V, 900 NV	840 V, 2660 NV (from f')

We'd weight up on that basis from left to right in each of the three horizontal pairs of cells. In the last row, for instance, the 600 too-young volunteer respondents would be weighted up to represent the hypothesized 840 too-young volunteer nonrespondents as well as themselves, and similarly with the 900 and 2660 real and hypothetical nonvolunteers.

Each volunteer in the too-young cell would get a NR weight of 2.4 = (600 + 840)/600, and each nonvolunteer in the too-young cell would get a NR weight of 3.955… = (900 + 2660)/900. The NR adjustment in the other rows would be handled in the same manner.