**Patterns of Biomarker Participation for Children in Wave 2 of the
Los Angeles Family and Neighborhood Survey (L.A.FANS-2)**

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The objective assessment of respondents' health status in social science surveys has grown rapidly in the past several years. Rather than just asking respondents to self-report on their health status—such as whether they have been diagnosed with specific diseases or conditions—many surveys now collect biomeasures or conduct assessments that allow these diseases or conditions to be assessed directly. Among the new objective assessments collected in such surveys are measured height and weight, spirometry, blood pressure, and blood- and saliva-based indicators. These new measures are less susceptible to misreporting, recall error, the presence of undiagnosed or undetected conditions, and other problems associated with self-reports. However, objective health assessments may be affected by many other factors, such as the time of day that measures are collected, the degradation of samples during collection, shipping, and storage, and inaccurate laboratory results.

In this paper, we focus on one specific aspect of collecting biomeasures in social science surveys—rates of respondent participation in the biomeasure collection. Using new data from Wave 2 of the Los Angeles Family and Neighborhood Survey (L.A.FANS-2), we examine overall rates of biomeasure participation, differences in participation rates by mode of collection (distinguishing between measures collected by interviewers on the first visit, health technicians on a subsequent visit, and respondents themselves following the interview), and the relationship of demographic, socioeconomic, and health status to participation rates. Drawing on the survey research literature, we test several hypotheses related to biomeasure participation, including that they are related to cultural factors and acculturation (such as language and duration of residence in the U.S. among immigrants), to child behavior and schooling achievement, and to the value of respondents' time and their interest in the topic.

The results from this analysis will provide useful information for researchers analyzing the L.A.FANS data (and, potentially, other surveys that have collected biomeasures) as well as for future studies that are considering the collection of biomeasures. The L.A.FANS results are particularly valuable because few social surveys to date have collected biomeasures for children—most have focused instead on collecting these measures for adults.

The Los Angeles Family and Neighborhood Survey

The Los Angeles Family and Neighborhood Survey (L.A.FANS) is a new panel survey of children, families, and neighborhoods in Los Angeles County (Sastry et al., 2006). It was designed to study the effects of family and contextual factors on health, development, and well-being of children and adults in Los Angeles. Wave 1 of L.A.FANS was fielded in 2000–2001 and Wave 2 in 2007–2008. L.A.FANS public use and restricted use data (available through ICPSR) have been widely used by researchers to study a large variety of topics (see http://www.lasurvey.rand.org/pubs/ for a comprehensive listing of publications).

All Wave 1 respondents were eligible for reinterview in Wave 2, with in-person interviews for respondents who lived in Los Angeles County and telephone interviews for those who moved away. L.A.FANS collected extensive information about dwelling characteristics, interviewer attributes, and neighborhood factors that support the detailed analysis of participation rates. Wave 2 of L.A.FANS also collected biomarkers of asthma, obesity, glucose metabolism, and cardiovascular risk factors for children and their parents. These biomarkers were assessed through the collection of saliva samples, dried blood spot samples, and interactions with interviewers that included anthropometry, spirometry, and blood pressure assessments.

The diversity of the L.A.FANS sample is a significant advantage for studying biomarker participation rates: the survey includes large samples of whites, Latinos and African Americans. L.A.FANS also includes a substantial number of Latino and other immigrants to examine the effects on biomarker participation rates of national origin and time of arrival in the U.S. (including documentation status), language of interview (English or Spanish), poverty status, and other demographic and socioeconomic factors.

Preliminary Results

Preliminary analyses have revealed major differences in biomarker participation rates by mode of collection. For the measures collected at the time that the interviewer visited the respondents to an conduct in-person interview, the biomarker participation rates were extremely high—between 97 and 99 percent. There was a major drop-off in participation rates associated with the second mode, which involved a separate visit by a health technician (generally, a licensed phlebotomist) to collect finger-stick blood samples. Participation rates for this mode were approximately 77 percent. The final biomarker collection mode was based on respondents collecting and mailing back saliva samples after the interview. Participation rates were only 49 percent for this mode.

Preliminary regression analyses reveal few significant associations between covariates and participation in the blood collection. Nevertheless, there are some significant covariate effects, including language (with much higher participation rates among Spanish-speakers) and whether the saliva samples were returned (lower participation rates among those who did not provide blood samples). The regression results for saliva participation revealed a large number of statistically significant covariates, which point to differences in participation rates by age, race, sex, language, and children's behavior and school performance.

Final Comments

After finalizing the preliminary results, the next step for the paper is to examine the effects of the selectivity of respondent biomarker participation on substantive findings. In particular, we will investigate various ways to account for the selective response rates (e.g., by including covariates associated with non-response in the outcome models or by constructing weights based on the participation models and using them in the analysis of outcomes). We will compare the different approaches and provide an assessment of their effectiveness—relative to each other and compared to ignoring the issue entirely.

The analysis for this paper is far along and will be completed well in advance of the 2011 PAA Annual Meeting. The results are promising (at least in terms of telling an interesting story) and are quite robust.

References

Sastry, N., B. Ghosh-Dastidar, J. Adams, and A.R. Pebley. 2006. "The Design of a Multilevel Survey of Children, Families, and Communities: The Los Angeles Family and Neighborhood Study," *Social Science Research* 35(4): 1000–1024.