3ie-IFPRI seminar: Do mass polio vaccination campaigns limit the use of other healthcare services?
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Stephane Helleringer, Assistant Professor at the Johns Hopkins Bloomberg School of Public Health, presented his research on the impact of mass polio vaccination campaigns, also called polio supplementary immunization activities (SIAs), on the utilization of routine immunization (RI) at the 3ie-IFPRI joint seminar series in Washington D.C. on November 12th. To assess the effect of SIAs on RI utilization, the researchers use the number of oral polio vaccine (OPV) doses received by infants under four months old (recommend three) as a proxy for RI utilization, and rely on Demographic and Health Surveys from Bangladesh, Benin, Guinea, Mali, Namibia, Senegal and Uganda-between 1998 and 2011.

The Global Polio Eradication Initiative supplements RIs with SIAs in its effort to eradicate the disease. Yet, it is unclear whether SIAs are affecting RI services by, for example, drawing resources from RIs by relocating health workers and reducing availability of RIs during the campaigns. In addition, mothers may decide to wait for an SIA instead of accessing RI services. Conversely, SIAs could increase utilization of RIs by increasing awareness of their importance.

The researchers employ a regression discontinuity design (RDD), taking advantage of the fact that children born a few days after a vaccination campaign would not have SIA exposure. The evaluation design assumes that there is no systematic difference between children born just before or after an SIA (treatment or control groups); that birth dates are random; and that the two groups differ only by exposure to the SIA. To test these assumptions Helleringer analyzes discontinuities around the birth threshold for variables that should not be affected by the SIAs. He finds no significant discontinuities across the two groups, confirming his assumptions.

The study finds a statistically significant discontinuity in SIA participation across the two groups, supporting the use of RDD, though the discontinuities are smaller than anticipated. Helleringer proposes two explanations for this: a) children born after an SIA were nonetheless reported to have participated in the SIA, possibly due to inaccurate birth or SIA dates, and b) children less than a month old had low reported SIA participation, possibly due to a cultural practice of keeping newborns secluded to protect them from infection. The study finds no effect of SIAs on RI uptake up to the age of 4 months. The author acknowledges that the evaluation has several limitations, such as low statistical power due to small sample sizes and the unreliability of the DHS data.

Johannes van Dam, Director of Program Sciences of FHI 360, served as a discussant at the seminar. He acknowledged that the approach used by the research was promising and was encouraged by the fact that the evaluation did not find that SIAs had a negative effect on RIs. He argued that it may be problematic that the study only used countries where mass immunizations were infrequent and that countries with more frequent campaigns could create stronger effects. He acknowledged that this could create difficulties in identification. He also noted that social desirability could have created a bias in some of the survey responses. During the discussion, other participants recommended using alternative data sources to check the results, especially because birthdays could be incorrectly reported. Another concern was that countries from which the data have been pooled were not comparable enough, and suggestions were made to disaggregate the data by country. However, due to sample size considerations, this was not possible using the current analysis method.