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Demand for Reproductive Health Services in Guinea: Determinants of Birth Weight

Abstract

Guinea is one of the African countries with the worst reproductive health indicators in the world. According to the data of the Demographic and Health Survey (DHS) III 2005, the country's maternal and infant mortality rates are respectively 980 per 100,000 births and 163 per 1,000 births. Birth weight is a synthetic indicator of maternal and child health but its principal causes are not obvious. We use the control function approach to study the determinants of low birth weight and to propose policy interventions on the basis of our results.

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Country where the research takes place

Guinea

How does the research describe the impact of population/reproductive health on poverty reduction and/or economic growth?

This paper presents the results of the application of this framework of analysis to measure the effects of the vaccination of pregnant women on birth weight to protect their newborns against tetanus and the determinants of the vaccination of pregnant women against tetanus in Guinea from the data of DHS III carried out in 2005.

The paper seeks to answer a certain number of questions:

- Is the complementary hypothesis of reproductive health services verified in Guinea?
- Does immunisation against tetanus have an effect on birth weight?
- What are the determinants of anti-tetanus vaccination?

Before answering these questions, we will try to successively analyse the relation between reproductive health (child health), economic growth and poverty, birth weight as a measure of child health, specification of the model and the statistical sources of the data.

How will the research address a policy need, and what kind of policy lesson is expected?

The estimations of the birth weight command function suggest that information that mothers have about technologies that improve their health plays a critical role by motivating them to put a lot into behaviours and consumption that are complementary to immunisation against neonatal tetanus in increasing the improvement of birth weight. A mother's immunization against tetanus during pregnancy reduces the risk of a child dying from a tetanus infection during delivery. Consequently, the complementary hypothesis of the risk competition model expects that mothers would be highly motivated to reduce other risks in order to guarantee the survival of their child, for example, the risk of a child dying of the syndromes linked to a low birth weight. The mechanisms by which pregnant mothers reduce this risk include investment in better nutrition, avoiding smoking and alcoholic drinks, and especially using antenatal care services. These are elements of a technology of production of health. Unless mothers have information on this technology, they are not very likely to adopt behaviours and consumption models that are complementary to tetanus immunisation by improving child health. For example, mothers could receive anti-tetanus vaccination and continue smoking or consuming alcohol because they lack information on the harmful effects of these types of consumption on the foetus. Such information should be provided to women by health workers who deal with vaccination. Information would reduce or fill all the knowledge gaps existing among women who receive tetanus immunisation in health facilities or at home. We assume that the variation of birth weight observed between vaccinated and unvaccinated women comes from the heterogeneity of access to infor-

mation on services that are complementary to vaccination. There is therefore a need to study the contents of mother's health education in the various regions and the various health facilities during vaccination days. The fine-tuning of such information would enable women to have access to the same reproductive healthcare technology. Consequently, the immunisation of mothers against tetanus (or implementation of safe childbirth interventions) would be accompanied by behaviour and consumption models that increase rather than reduce child health.

More generally, the results suggest that health workers in charge of vaccination must go beyond immunisation to inform women about services that ensure the survival of the child. Specifically, when receiving immunisations, mothers should be advised about other things that they can do to maintain their health and that of their future children. This therefore requires the training of these workers on these complementary services, hence the development of a new policy integrating vaccination and the other complementary services. The adopted policy can be uniform in the rural and urban areas.

Methods used

We use a control function approach to estimate the effect of anti-tetanus vaccination on birth weight using the data of the DHS III carried out in 2005 in Guinea. A structured model of the determination of birth weight is estimated on the basis of the hypothesis that immunization against neonatal tetanus is complementary to the behaviours and other health services which improve birth weight, namely, antenatal care, food supplements and behavioural change during pregnancy. First stage regressions give reduced parameters of form of a control function for tetanus vaccination in which the instruments for vaccination include the education of the mother and of the head of household, the time spent on drawing water and the composite welfare index. Since birth weight is censored, the effect of the sample selectivity on the structural parameters envisaged in the second stage regression is also considered.

Data used

The present study is based on the Demographic and Health Survey (DHS) of Guinea carried out in 2005 by the National Department of the Statistics and Data Processing, with the technical aid of Macro International Inc.