



## Effect of interrupting free healthcare for children: Drawing lessons at the critical moment of national scale-up in Burkina Faso



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### ABSTRACT

With solid evidence that free healthcare increases the utilization of health services, Burkina Faso recently exempted all children under five and pregnant women from direct payment at health facilities. However, there is little insight into the capacity to maintain the gains attributable to free healthcare under routine conditions of implementation at the national scale. In particular, the repercussions of its interruption are unknown. The objective is to assess the effects of a sequence of natural interventions including the introduction, interruption and reintroduction of free healthcare on health-seeking practices and utilization of healthcare facilities by children under five. This is an embedded mixed methods study conducted in Kaya district, Burkina Faso. The quantitative component is based on a reversal longitudinal design. Pooled interrupted time-series analysis was performed to assess changes in the monthly number of visits from January 2005 to March 2015. Qualitative data were collected through in-depth interviews with health personnel and mothers to better understand the quantitative results. The results show that visits to health centres dropped immediately and significantly when free healthcare was interrupted ( $-146$ ,  $CI_{95\%}$   $[-255; -37]$ ). They increased again when free healthcare was reintroduced ( $+89$ ,  $CI_{95\%}$   $[-11; 187]$ ). Both urban and rural centres were affected. Self-medication and visits to traditional healers were reported more frequently during the withdrawal of free healthcare, and tensions between the population and health personnel increased. Implementation problems other than insufficient funding limited the coverage or intensity of free healthcare. While removing user fees could potentially improve mothers and children's health in Burkina Faso, this study shows that demand for healthcare remains highly sensitive to price changes. Gains in utilization attributable to free healthcare may vanish rapidly if user fees are reintroduced. It is essential to support an effective and sustainable implementation of this ambitious initiative.

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### 1. Introduction

In March 2016, Burkina Faso adopted a national policy titled “Free Healthcare for Mothers and Children under Five” ([Gouvernement du Burkina Faso, 2016](#)). The national scale-up in Burkina Faso has already begun and is planned to be completed by

June 2016. The policy echoes recommendations to abolish direct payment in health facilities that have been recently formulated by the major global health actors ([Robert and Ridde, 2013](#)). Notably, this strategy has been endorsed by the African Union since 2013 ([African Union, 2010](#)).

“Free Healthcare for Mothers and Children under Five” builds upon the successful implementation of free healthcare for pregnant women and children under five years of age in six Burkinabe districts ([Ministère de la Santé, 2015b](#)). These initiatives were applied between 2008 and 2015 by non-governmental organizations (NGOs) with the financial support of the European Community

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Humanitarian Office (Ministère de la Santé, 2012). Rapid increases in the use of primary care services have repeatedly been demonstrated, as well as reduced delays in consulting health facilities and lower inequalities in healthcare access (M. De Allegri et al., 2011; Druetz et al., 2015a; Heinmuller et al., 2012; Ridde et al., 2013). A mathematical simulation study suggested that these initiatives may also have contributed to reducing morbidity and mortality among children (Johri et al., 2014). Similar positive effects on the use of healthcare services have been observed in other countries that have introduced free healthcare (Hatt et al., 2013; Lagarde and Palmer, 2011; Ponsar et al., 2011).

Nonetheless, there is little insight into the sustainability of these gains, in Burkina Faso or elsewhere. For example, if the necessary funding to support free healthcare cannot be maintained, what would be the consequences of its interruption? To what extent would the demand for healthcare be affected? Would this provoke a return to the baseline situation? Scale-ups of free healthcare interventions often raise the issue of sustainable implementation, i.e. the capacity of the State or the implementer to continuously and effectively ensure that user fees are removed, without interruption (Olivier de Sardan et al., 2015).

This study takes advantage of a natural experiment in a district where free healthcare for children under five was introduced, then suspended, and finally re-established. The study intends to: (i) assess the effects of these transitions on the utilization of healthcare services, (ii) understand how households' health-seeking practices were affected, and (iii) determine whether health facilities reacted differently to the transitions. Although the withdrawal was short-lived (approximately three months), we advance the hypothesis that the demand for healthcare services was significantly affected by each of these transitions.

## 2. Methodology

### 2.1. Intervention under study

In July 2011, *Save the Children* (STC) introduced free healthcare in the 54 primary health centres and 3 hospitals in Kaya district of Burkina Faso. The intervention covered the cost of services provided at health facilities (consultation, care, medication, and part of the costs for medical evacuations) for all children under five. Healthcare was provided free of charge, and STC reimbursed the health facilities' management committees monthly for the cost of the services provided. The expenses incurred by patients outside of health facilities (transport, medication from private pharmacies, etc.) were not covered. In December 2013, fearing an imminent lack of cash flow and liquidity issues, STC informed district authorities that it would be immediately suspending free healthcare to children under five, with the exception of malnourished children. Unexpectedly, healthcare without fees was reintroduced approximately three months later, in March 2014, once STC was able to secure funding from the European Commission. The intervention was re-established in the same form, except that STC added control measures to limit costs and the amounts to be reimbursed to management committees. From June 2016 onwards, the intervention will be integrated into the national "Free Healthcare for Mothers and Children under Five" policy.

### 2.2. Study site

A research program has been conducted in collaboration with the Kaya Health and Demographic Surveillance System since 2010 (Kouanda et al., 2013). The study area covers a radius of 20 km around the city of Kaya and includes two urban sectors and 15 villages. Healthcare services are provided by two urban and four

rural centres. In 2014, Kaya District registered approximately 250,000 child consultations in its health facilities, an average of 2.26 visits per child per year (Ministère de la Santé, 2015a). Malaria is the main reason for visits (57% of the children in 2014, with a 78% proportion of malaria cases that are confirmed by microscopy or rapid diagnostic test), to such a degree that attendance in health facilities reflects malaria's seasonal variations (Druetz et al., 2015a; Yé, 2008). More details on the study site are available elsewhere (Druetz et al., 2015b, 2015c).

### 2.3. Study design

This is a mixed methods study with an embedded design. The study's qualitative and quantitative components were conducted simultaneously and focused on the same research question. Qualitative analyses were performed in an integrated QUANTI-quali design model to further interpret the quantitative results (Creswell and Plano Clark, 2011). This evaluative research was conducted under realistic implementation conditions; the intervention and sequence of events were not controlled by the research team, and no comparable control group was available.

The quantitative component is based on an "ABAB" reversal longitudinal design that takes advantage of natural changes of the intervention at different points in time (Fok et al., 2015). The design allows us to assess the specific responses to the sequence of baseline (A), exposure (B), withdrawal (A) and then reintroduction (B) of free healthcare (Biglan et al., 2000; Shadish et al., 2001). In order to validate the estimates and explore the heterogeneity of responses, a multiple time-series approach was adopted (Duncan and Duncan, 2004). Pooled interrupted time series analysis was conducted on the five health centres in the study area that were open before and after the intervention. The outcome variable is the number of child visits per month in each centre. The data for attendance were extracted from all centres' registers, validated and aggregated by month. Double entry was performed, with a recount by a third party in case of inconsistency. All available registers were collated. The window of observation covers a period of more than 10 years from January 2005 to March 2015 (123 months), with a useful long baseline of 80 month-observations.

The qualitative component is cross-sectional and analyses data obtained from semi-structured interviews conducted in October–November 2014, approximately seven months after the reintroduction of free healthcare. An interview guide was developed to explore the effects of the interruption on child health-seeking practices. Overall, 12 individual interviews were conducted (4 head nurses, 5 parents, and 3 drug stock managers). The sampling of health personnel was exhaustive (all available nurses and drug stock managers were interviewed). During the visit, one parent per health centre was also recruited. No additional parents were recruited given that data saturation was achieved (Poupart et al., 1997).

### 2.4. Data analysis

Time-series data were fitted by using a multi-level latent growth model in order to assess each transition's average effect, as well as subject (centre)-specific trajectories and responses (Duncan et al., 2006; Rabe-Hesketh and Skrondal, 2012). Random intercepts provided estimates of the magnitude of discontinuities. At each transition, the average treatment effect was estimated as the absolute difference between the predicted outcome immediately after the change and two counterfactual values: (1) the predicted value under the baseline segment, and (2) the predicted value under the hypothesis of the prolongation of the preceding segment. A linear relationship between time and the outcome was chosen as a

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