

Submission for Population Association of America

Does Contracting Out Primary Care Services Improve Child Health? The Case of Guatemala

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Introduction

Around a third of the welfare gains for developing countries in the last four decades can be attributed to improvements in longevity and health (Becker et al. 2005). Reductions in infant mortality are a key component of this improvement: individuals whose deaths are saved as infants are expected to enjoy long life spans due to the U-shape of mortality rates. Hence, public interventions that improve child health and ultimately save babies' lives are important not only from a public health perspective but also from a welfare-enhancing point of view.

Regarding the type of public health intervention that could best attain these goals, a strong notion that primary health care should play a central role in health systems aroused in the 1978 during the first International Conference on Primary Health Care in Alma Ata, Kazakhstan. Since then, the empirical evidence that has accumulated on this issue has been mixed. Starfield (2005) in its review of the literature, including mainly studies focusing the U.S. population, reported the existence of robust correlations between the supply of primary care services and positive outcomes.

On the other side, Filmer et al. (2000) reviewed the literature on developing countries and concluded that there is little evidence that increased public spending in primary health spending produced actual increases in health care services. The authors lay out two reasons for this weak link. First, difficulties in translating increases in resources into real increases in services provided due to the government inability to induce adequate behavior of public employees. Second, the significant "crowding out" effect of the provision of curative public primary health care, because this is the health market that naturally arises in the absence of public action. Hence, Filmer et al. (2000) emphasized the importance of investing in preventive primary health care services, with high positive externalities and low crowding-out effects, and also in acknowledging country-specific capacity constraints that may preclude real increases in health services.

These ideas of the need to scale-up rapidly global initiatives targeting certain health problems together with the notion of the difficulties faced by the public sector to produce increases in health services due to the lack of accountability of public employees has fueled a significant interest and experimentation in contracting out the provision of health services to the private suppliers. In "contracting out" arrangements the public sector

purchase the provision of certain specifically delimited range of health services to a targeted population to private suppliers, typically NGOs. The assumption behind this innovative approach is that contracting the provision of health services could produce increases in access in an efficient manner by linking payments to suppliers to specific results.

However, an important debate has arisen about whether contracting-out mechanisms could outperform solutions based on public provision of services. A number of theoretical reasons have been put forward by Liu et al. (2008) highlighting certain shortcomings of the contracting out solution. First, significant administrative costs are involved in this solution. Second, the assumptions about the number of potential providers in a market that would allow competitive bidding have shown to be unrealistic. Third, the solution can produce further fragmentation of the health system. Fourth, governments with weak capacity to provide services may be unable to monitor private providers properly. Finally, linking payments to pre-specified outcomes may give incentives to providers to game the system. In particular, to transfer resources from activities impacting unmeasured to measured outcomes.

Summing up, there are valid reasons about why contracting may or may not be more efficient than public provision of health services and hence this debate can only be settled with solid empirical evidence. Unfortunately, the reviews of the growing empirical literature regarding the effectiveness of contracting out arrive to the same conclusion about the weak evidence accumulated so far and the needs of producing more rigorous evaluations. Liu et al. (2008) reviewed 16 studies about the effectiveness of contracting out primary care services and express that “most of the studies are descriptive, which does not allow one to control for the influence of potential confounders on program effects”. The authors also reported that only four of the interventions reviewed had been analyzed using regression analysis. Similarly, England (2004) pointed out that though there was a growing literature on contracting out, “few of these experiences have been subject to proper evaluation”.

This paper aims to contribute to fill this gap by analyzing a large-scale contracting out program in Guatemala. The *Programa de Extension de Cobertura* (Coverage Extension Program, or PEC) was launched in 1996 after Peace Accords ended a civil strife that lasted more than three decades. By this agreement, the government promised to provide health care services to a significant fraction of the population, mostly rural, poor and indigenous, that were underserved by the existing public health network. With multinational donor funding and technical assistance the government started in 1996 contracting NGOs to provide a basic package of health services to geographically delimited populations. The set of health services covered stressed preventive actions and were primarily focused to improve maternal and child health. The second innovative feature of the program, besides its contracting-out nature, was that the NGOs had to set up medical mobile teams which would visit the covered communities monthly. Pushed by political considerations, the government expanded rapidly coverage reaching 3 million of individuals covered in 1999. Total population covered remained fairly stable until 2004 when under renewed funding from international donors the number of beneficiaries started to increase again, reaching around 4.5 million in 2007 (around a third of the country’s population).

The study of this case can contribute in important ways to the limited empirical literature on contracting out of health services due to several reasons. First, the large scale of the

intervention makes easier to detect impacts due to large sample size of the treatment group. Moreover, it may be feasible to detect somewhat small impacts on key variables such as infant and child mortality. This is important because this paper could be able to provide evidence impacts on health outcomes and not just on measures of health service access. Second, the fact that the program was geographically delimited and that there were sharp increases in coverage makes it easier to overcome standard problems in the estimation of program effects by exploiting within units over time variation. Third, as it is described below, the richness of the data sets available allows one to tackle with higher chance of success the problems of differences in baseline outcomes for treated and untreated areas. Fourth, the particular set of services covered, mostly preventive, follows the idea that crowding-out of private provided should be minimized and hence could produce better results than other type of services. Finally, the target population comprised mostly indigenous population and hence this may be an interesting case to check whether the assumption of greater flexibility and adaptability of private providers, compared to public ones, can improve outcomes in this social context.

Data

A central aspect of the methodology pursued involves determining geographically the intervened areas. Guatemala is divided in 22 departments and each department is comprised by a number of municipalities (similar to U.S. counties, a total of 330 in the country). Moreover, the National Institute of Statistics has developed a higher level of geographic disaggregation: the “community” level. Hence, each individual is assigned to a community and there are around 20,000 identified communities in the country. Data on the geographic penetration of the program is available at the community level.

We plan to produce three complementary analyses and for them corresponding data sources will be used. First, we plan to use the census of all births and deaths in Guatemala since 1990 to 2006. Births and deaths are identified at the municipal level. Hence, coverage rates will be computed at the municipality-year level as well as certain outcome variables (infant and child mortality, fraction of births performed by physicians and by skilled personnel).

Second, we plan to use the 100-percent sample of the 1994 and 2002 Population Censuses to construct certain measures of child mortality for mothers together with a number of important covariates. This data set includes community identifiers and hence it can be merged to the data on program penetration at the same level.

Third, to estimate the impact of the program on health access measures we plan to use the 2000 and 2006 Guatemala Living Standards Surveys which contain important information regarding vaccination to mothers and children, prenatal and postnatal care, prevalence of diarrhea and acute respiratory infections and a large number of covariates. Also, we are exploring the possibility of using the 1995, 1998 and 2002 Guatemala National Surveys of Maternal-Child Health. However, we have not been assured that it is possible to identify individuals in this survey at the necessary disaggregation level to merge this information to the program penetration data set.

Methodology

The empirical strategy has to overcome important challenges. First, the selection of geographical areas covered was non-random. Second, key outcomes (e.g. infant mortality) are expected to be measured with significant error. Third, as infant and child mortality are rare events, large samples are needed to detect the program's impacts. We plan to tackle these problems by using the rich longitudinal data available and exploiting differences in within variation over time in outcome variables for covered area and uncovered areas.

In the case of the analysis using the Census Population data we plan to estimate fixed-effects regression models and estimate the following equation:

$$(1) \quad Y_{i,t} = \alpha + \beta PEC_{i,t} + \delta X_{i,t} + \mu_i + \tau_t + \varepsilon_{i,t}$$

where Y is the outcome variable (Child Mortality), PEC represents the health coverage status, X is a vector of controls and μ and τ represent area and year dummies. In the equation i indexes geographical units and t indexes time (years).

A similar specification will be used for the analysis using the Living Conditions Surveys to estimate the impact of the program on measures of health access. An important consideration in this analysis as well as the one using Population Census data will be to identify untreated areas with similar pre-treatment conditions in order to ensure that the identifying assumption, i.e. similar trends between the treatment and control groups in the absence of the program, is met.

Finally, for the analysis at the municipal level in which Vital Statistics data will be used, we will estimate fixed-effects models in an analogous fashion to equation (1). However, the outcome and treatment variables are computed as averages to this level of aggregation. To indirectly test that the identifying assumption is met for this case, we have already checked whether pre-treatment health trends are similar across high- and low-intensity municipalities and found that we could not reject the null hypothesis of similar trends.

References

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