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REPUBLIQUE DU RWANDA
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Impact of Supply on Contraceptive Use: Building Evidence in Rwanda

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Background

Research shows that effective contraception prevents unwanted pregnancies and improves the lives of women and children. While global donors and national governments have worked together to coordinate and increase access to contraception, most research has concentrated on factors that influence demand. The effect of modern contraceptive method availability on contraceptive use is rarely studied. See figure 1 for the research hypothesis.

Figure 1. Hypothesis of Analysis[i]

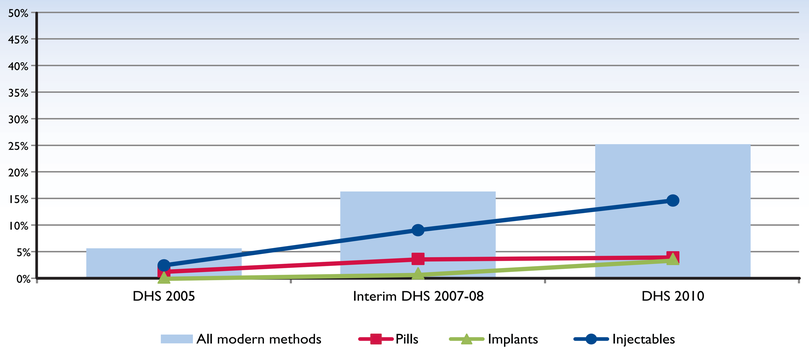
The current analysis from the Rwandan Ministry of Health, with technical support from the USAID | DELIVER PROJECT, shows the positive influence on the contraceptive prevalence rate (CPR) when modern contraceptive methods, supported by an effective supply chain, are reliably available.

Methodology and Results

Contraceptive Use from the Demographic and Health Survey

According to the 2010 Rwanda Demographic and Health Survey (DHS) data, the modern CPR in Rwanda has quadrupled in the last five years, primarily due to the increased use of injectable contraceptives.

Figure 2. Modern CPR for All Women, Rwanda DHS[ii]



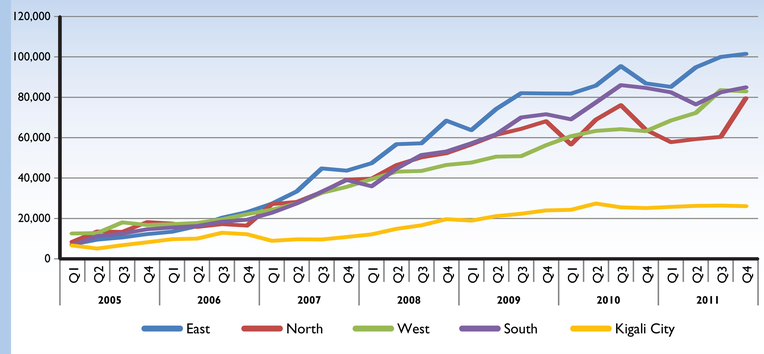
i Many factors contribute to increases in CPR—in addition to the effectiveness of the supply chain—including changes in demand and shifts in cultural norms and the acceptability of using family planning.

ii National Institute of Statistics of Rwanda (NISR) [Rwanda], Ministry of Health (MOH) [Rwanda], and ICF International. 2012. *Rwanda Demographic and Health Survey 2010*. Calverton, Maryland, USA: NISR, MOH, and ICF International; Ministry of Health (MOH) [Rwanda], National Institute of Statistics of Rwanda (NISR), and ICF Macro. 2009. *Rwanda Interim Demographic and Health Survey 2007-08*. Calverton, Maryland, U.S.A.: MOH, NISR, and ICF Macro; Institut National de la Statistique du Rwanda (INSR) and ORC Macro. 2006. *Rwanda Demographic and Health Survey 2005*. Calverton, Maryland, U.S.A.: INSR and ORC Macro.

Volume Data from Logistics Management Information System

This significant growth is also reflected in the logistics management information system (LMIS) data from the same time period. In figure 3, each of the five provinces show a continuing increase in the volume of injectables dispensed to clients at the health-facility level.

Figure 3. Volume of Injectables Dispensed to Clients, 2005–2011, by Province

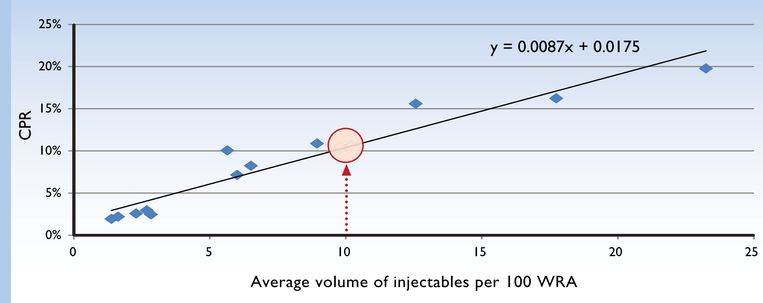


Volume Compared to CPR for Women of Reproductive Age

An analysis controlling for population size was also conducted.[iii] Comparing volume to CPR by province, it showed that new users caused the increase in volume dispensed, not the differences between provinces' populations or population growth between years. This analysis also allowed for a comparison between provinces. The average of the quantities dispensed in a province during the quarter of the DHS survey, and the previous quarter, was divided by the mid-year population for women of reproductive age (WRA) in the province; that number was multiplied by 100 to determine the number of contraceptives dispensed per 100 WRA, per quarter, corresponding to the DHS surveys.

In the provinces where 10 injectables were distributed for every 100 WRA, the CPR was about 10%.[iv] See figure 4, where each point represents a province for each DHS year.

Figure 4. Average Volume of Injectables per 100 WRA, per Quarter, by CPR



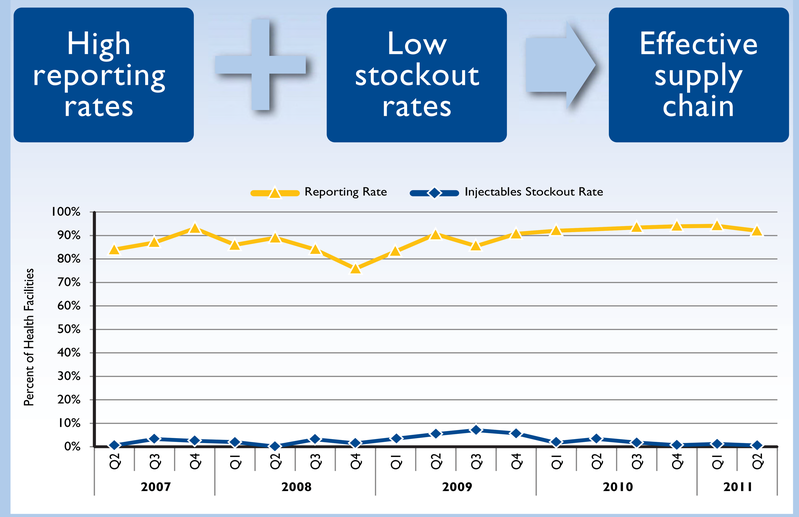
iii Population data is from the AfriPop Demography 2005 and 2010 datasets (interpolating the 2007/2008 values). Data accessed February 2012 from http://www.clas.ufl.edu/users/atatem/index_files/AfriPop.htm

iv Slight deviations from this one-to-one relationship may be caused by the use of contraceptives from a non-public sector source, a disconnect between the time period of the DHS survey and the LMIS data used; or inaccurate population, CPR, or LMIS data.

Measuring Reliability of Commodity Supply

To ensure commodity availability at the service delivery point, there must be a well-functioning supply chain. The supply chain and LMIS work well in Rwanda, where there are low stockout rates, high health facility reporting rates, and facilities stocked according to plan. From data beginning in 2007, stockouts are consistently low (below 10% of health facilities stocked out of injectables), suggesting a high-performing supply chain. In addition, the health facility reporting rates are high, indicating that (1) the stockout and other logistics data are nationally representative, and (2) the LMIS is functioning at a very high level.

Figure 5. Rwanda Health Facility Stockout and Reporting Rates



Conclusions

Using two independent data sources (DHS and LMIS), this analysis validated that the increasing trend in contraceptive use, shown in the DHS, corresponds to the same increasing trend in contraceptive supply dispensed to clients from 2005–2010.

However, the supply chain must keep pace with this demand or the health system risks losing clients if contraceptives are stocked out at the health center. This analysis indicates that an efficient family planning supply chain plays a critical role in preventing unintended pregnancies, as well as maternal and child morbidity and mortality. These data indicate that the supply chain in Rwanda has responded to increasing demand over the past five to seven years, keeping products reliably available across the country; and enabling Rwandan women to choose, obtain, and use contraceptives whenever and wherever they want.