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Living longer: The effect of the Mexican conditional cash transfer program on elderly mortality ☆

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ABSTRACT

With both an aging population and a transition from communicable to chronic diseases, the health of the elderly is a growing issue in many developing countries. Conditional cash transfer programs are usually thought to benefit young people, but may also benefit other age groups since some programs require that all household members have regular preventive health check-ups. This paper exploits the phasing-in of the Mexican conditional cash transfer program, Progresa, between 1997 and 2000, and shows a 4% decline in average, municipality-level mortality for people aged 65 and older. The program not only reduced deaths due to more traditional infectious diseases, but also diabetes related deaths. Given that diabetes deaths are a leading cause of death in Mexico, and in the top 10 causes of death in many high- and middle-income countries, this is an important finding.

1. Introduction

With improving living standards and increasing life expectancy, many developing countries face the challenge of managing both an epidemiological (Gribble and Preston, 1993; Omran, 1971) and a demographic transition. As the epidemiological transition takes place, the relative contributions of communicable and non-communicable diseases to death rates, as well as to the burden of disease (loss of healthy life from death and disability) change. The major causes of death and of the burden of disease move from infectious diseases and undernutrition to non-communicable diseases such as cardiovascular disease, diabetes, and over-nutrition. An epidemiological transition combined with an aging population means that countries have the challenge of managing health care for a growing elderly population that suffers from traditional communicable diseases as well as chronic degenerative diseases. This paper investigates whether the Mexican conditional cash transfer (CCT) program, initially known as Progresa and now called Oportunidades, helped with this challenge by reducing elderly mortality.

Mexico is an example of a middle-income country that is fairly advanced in the epidemiological transition. In 1991, non-communicable diseases already accounted for 47% of the burden of disease, communicable diseases for 32%, and the rest was attributable to injuries and accidents (Lozano et al., 1995). By 2004, non-communicable diseases dominated, increasing to 68% of the burden of disease and 75% of total deaths, while communicable diseases had fallen to 14% of deaths and 18% of the burden of disease (Stevens et al., 2008). In addition, infectious diseases and malnutrition went from being 3 of the top 10 causes of death (respiratory infections, acute diarrhea, malnutrition) in 1991, to being only 1 of the top 10 causes of death (respiratory infections) in 2004. However, the speed of the transition differs by region in Mexico, with communicable diseases still accounting for up to a third of the

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burden of disease in 2004 in some of the poorer southern states (Stevens et al., 2008).

CCT programs are a popular social program in middle and low-income countries. They are usually thought of as a way to build the human capital of young children and break the intergenerational transmission of poverty. They pursue these goals through the provision of cash transfers conditional on beneficiaries engaging in positive behaviors such as children's attendance at school or regular health care visits (Fiszbein and Schady, 2009). However, the design of the Mexican CCT may also have led simultaneously to improvements in elderly health. In particular, the program required that all adults in a beneficiary household seek regular preventive health visits, and the health services provided addressed some of the health concerns of the elderly. A household member was also required to attend health education sessions to learn how to take better care of the health and nutrition needs of all family members, and not just the children (Adato et al., 2000). Moreover, the cash transfer increased the income of the entire household, allowing all household members to potentially improve their nutrition and buy more health inputs.

Progresa is one of the first large-scale CCT programs. It started in 1997 mainly in poor rural areas. By 2000, the program reached approximately 2.5 million families or about 40% of rural families (Coady, 2000). Subsequently the program expanded to include more urban areas, and served about 5 million households by 2007 (Adato and Hoddinott, 1999). Similar types of programs have been implemented in more than 30 middle- and low-income countries (Fiszbein and Schady, 2009). A prominent feature of Progresa is the randomized evaluation built into the design of the program. While many studies on Progresa take advantage of the data collected as part of the randomized evaluation, the sample size is insufficient to estimate the impact of Progresa on an important health indicator – elderly mortality – and does not contain information on cause of death. Due to these limitations, previous research has not examined the effect of Progresa on elderly mortality.

We exploit the phasing-in of Progresa throughout Mexico over time and location, and take advantage of the high quality death certificate data available in Mexico to estimate the effect of Progresa on elderly mortality for those aged 65 and older. Similar to Barham (2011), we use the percentage of households receiving Progresa transfers in a given year and municipality as the treatment variable and compare municipalities phased-in during 1998 to those in 1999 since they are the most similar to each other. Using a municipality-level dataset covering the period 1992–2002, and a municipality and time fixed-effects model, we show that Progresa led to a 4% reduction in the average, municipality-level elderly mortality rate; the effects are similar for men and women. Results by cause of death reveal that Progresa was successful at reducing deaths related to infectious diseases, diabetes, and nutrition and anemia, but not those related to transportation accidents, as would be expected given the program interventions. Given that the empirical model uses the second lag of the treatment variable, the results focus on the effect of Progresa through 2000, when the program mainly operated in poorer rural areas. We do not examine the effect of the program expansion into more urban areas after 2000 since the effect of Progresa on elderly health during this time period is confounded by the introduction of health reform. The health reform included an increase in public spending on health and a new public health insurance scheme, *Seguro Popular*, which benefited a similar population to that served by the CCT program (Frenk et al., 2006).

Previous research on the effects of CCTs on adult health and especially those 65 and older is limited, but the research that does exist focuses on Progresa and demonstrates that Progresa had short-run effects on possible pathways influencing health outcomes which suggest that it is reasonable to expect that the program led to a reduction in elderly mortality. For example, beneficiaries aged 50 or older experienced a 60% increase in health visits in the previous two months, a reduction in self-reported sick days, an increase in the number of days they were able to carry out normal activities, an increase in the proportion reporting that they could carry out vigorous activities, and a reduction in the proportion reporting high blood pressure (Behrman and Parker, 2011; Gertler and Boyce, 2001). Fernald et al. (2008) also show that the program resulted in a lower prevalence of uncontrolled hypertension among people aged 30–65 years old.[1] However, this is the first paper which demonstrates that Progresa has indeed reduced elderly mortality.

The rest of the paper proceeds as follows. Section 2 summarizes the Progresa program and the pathways through which program interventions may affect elderly mortality; Section 3 describes the data; Section 4 lays out the identification and estimation strategy; the findings are discussed in Section 5; and Section 6 concludes.

2. The Progresa program

2.1. Background

Progresa was introduced in 1997, and between 1997 and 2000 gave preference to rural localities since poverty was highest in these areas, though a limited number of urban localities were included. The program was expanded starting in 2001 to include more urban areas. The program was originally designed to alleviate short-term poverty and to break the intergenerational transmission of poverty by improving the health and development of children. A secondary objective of the program was to improve adult health (Fernald et al., 2008). Progresa combines two traditional methods of poverty alleviation: cash transfers and free provision of health and education services. Conditioning receipt of the cash transfers on children attending school, all family members obtaining regular preventative health care, and at least one family member attending health education training sessions, links the two objectives. Therefore, the income transfer not only relaxes the household budget constraint, but also helps improve the utilization of health and education services. There are separate transfers provided for the health and education conditionalities, so receiving the health transfer does not depend on the family also meeting the education conditionalities. The conditionalities were provided to a designated woman in the beneficiary household. Together, these conditionalities led to an increase in average beneficiary income levels of 22% in rural areas (Parker and Teruel, 2005).

2.2. The Progresa health and nutrition component

The health component of Progresa was designed to address health issues of all members of the family. The conditionalities required that all adults in the household, including senior citizens, have one preventative health check-up a year, and that at least one family member attend regular health education training sessions (Adato et al., 2000). Nutritional supplements were also given to mothers and young children. Transfers based on the health conditionality were paid every two months and were only paid if all the members of the beneficiary households attended the required health care visits and health education training sessions for that two-month period. Health clinics were required to provide a minimum package of services to ensure a basic quality of care. This package did not cover all types of health issues faced by families or the elderly but did include: family planning; education on basic sanitation, and accident prevention; prenatal, childbirth

[1] Fernald et al. (2008) found significant reductions in the body mass index and prevalence of obesity due to the program, but results are not significant once covariates are included.