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Delhi's health system exceptionalism: inadequate progress for a global capital city

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ABSTRACT

Objectives: India has proclaimed commitment to the goal of Universal Health Coverage and Delhi, the National Capital Territory, has increased investment in public health and other health services over the past decade. The research investigates whether Delhi's increased investment in health over this period is associated with a reduction in premature deaths, after the age of 1 year, which could have been avoided with better access to effective health care interventions (amenable mortality).

Study design: A population-based study of changes in amenable mortality (AM) in Delhi over the 2003–2013 period.

Methods: To calculate AM, a list of International Classification of Disease (ICD) codes from the published literature was relied upon. In defining AM in India, an upper age limit of 69 years was adopted, rather than the more common limit of 74 years. Population estimates and vital statistics were downloaded from the Delhi Statistical Handbook. Deaths by cause and age, including medical certification, are from the Vital Statistics site of the Delhi Government. To age-adjust these data, the direct method was employed, using weights derived from the 2010 United Nations world standard population.

Results: The research found that, between 2004 and 2013, the age-adjusted rate of AM rose from 0.87 to 1.09. The leading causes of death in both years were septicemia and tuberculosis. Maternal mortality is well above the global level for middle-income countries.

Conclusion: Recent investments in public health and health care and the capacity to leverage them to improve access to effective care have not been sufficient to overcome the crushing poverty and inequalities within Delhi. Large and growing numbers of residents die prematurely each year due to causes that are amenable to public health and health care interventions.

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Introduction

Delhi, the National Capital Territory (NCT) of India, with more than 16 million inhabitants is the second most populous city of the nation, one of the largest cities in the world, and it continues to grow, primarily due to internal migration from rural areas. Delhi is part of India's wealthiest territory whose population includes a rising number of people in high- and middle-income groups; yet half of its population lives in slums and other substandard housing. As with other global cities, overcrowding and poverty create tremendous public health challenges, and Delhi has responded by increasing public health and health care expenditures as a percent of the NCT's budget from 7 to 12 over the period from 2001 to 2011.[1] In addition, the availability of hospital beds in Delhi almost doubled between 1998 and 2013.[2] This is consistent with India's more recent 'aspirations' for Universal Health Coverage (UHC).[3]

The extent to which Delhi authorities have achieved public health and health care improvements is investigated, over the period between 2004 and 2013, as measured by the evolution of premature deaths, after the age of 1 year, which are amenable to health care interventions—amenable mortality (AM). This focus on Delhi is for two reasons. First, there exists a standard of comparison as other global cities from so-called BRIC nations (Brazil, Russia, India, and China) have succeeded in reducing AM through investments in public health and health care.[4] Second, Delhi's mortality statistics are more complete than those in India as a whole. Since 2003, medical certification of death was made compulsory for public and private hospitals in Delhi.[5] A 2016 study from the *Bulletin of the World Health Organization* found that only 16.8% of death records in India, in 2011, included a medically certified cause of death because there were not enough physicians available to review deaths that occurred outside the hospitals.[6] In contrast, just over 62% of the death records in Delhi (between 2004 and 2013) include cause of death.[7]

Delhi's health system

Delhi's health system reflects the contradictions of what Drèze and Sen have called the 'uncertain glory' of India.[8] The country is characterized by poor population health outcomes co-existing with a booming economy, the world's largest generic drug industry, thriving medical tourism, significant innovations in the delivery, financing and manufacturing of health care services and products,[9] yet failure to assure minimal standards of sanitation and public health. Public financing of health amounts to only 1% of gross domestic product (GDP) and out-of-pocket health spending represents 59% of health care expenditures of which 70% is spent on medicines alone, leading to indebtedness and poverty.[10] Moreover, the challenge extends beyond leveraging additional resources to improving policy capacity, governance, and implementation of government programs.

Some consequences of India's distribution of health care expenditure are well illustrated in Delhi where the private sector maintains a dominant position in the delivery of outpatient as well as inpatient health care services, including medical technology, diagnostic procedures, pharmaceuticals, and hospital construction.[11] Primary health centers (PHCs) are supposed to be responsible for providing primary and preventive care in the public health sector and medical professionals working at PHCs are salaried local government employees. In reality, PHCs are unable to meet the health care needs of most poor people living in Delhi and other urban areas of India. On average, there are only two medical officers responsible for providing care to as many as 400 patients a day.[5] Overall, in India, about 80% of outpatient and 60% of inpatient care is provided by the private sector.[3] This large private primary care sector, accounting for as much as 40% of services,[12] is made up of registered physicians in private practice and a range of unregistered health care providers, that the government considers 'unqualified'. Patients pay out-of-pocket for the services in the private sector, and there is no regulation of fees.[13] This severely limits access to care for the poor and puts those with lower incomes at risk of financial distress.

Specialty care, in the public sector, is available at publicly financed Community Health Centers and district hospitals. As with PHCs, medical professionals at these facilities are also salaried government employees. With the exception of the All India Institute of Medical Sciences and a few other public sector specialty hospitals, in Delhi, most public hospitals and other clinical facilities are in poor shape.[14] All India Institute of Medical Sciences is often left to care for low-income patients who could otherwise be treated at primary and secondary levels. The underfunding of the public hospital sector leaves enormous responsibility to the private sector which ranges from world class institutions such as the Fortis Escorts Heart Institute or Max Super Specialty Hospital to virtually unregulated private institutions that leave patients 'at the mercy often enough, of unscrupulous practitioners'.[8] The High Level Expert Group on UHC, in 2010, recommended that the government should increase spending on health care, strengthen the primary care workforce, and improve quality, governance, and accountability. These recommendations were adopted, but never implemented.[3]

The Delhi health authorities have made considerable efforts to respond to their population health and health care system challenges, but the multiple levels of government involved makes regulatory policies exceedingly complicated. The Federal government's ministries and departments, the Delhi NCT, and local government authorities (Municipal Corporation of Delhi, the New Delhi Municipal Corporation, and the Delhi Cantonment Board) share responsibility for different aspects of the system. As a result, governance and health care are fragmented and complex.

The Health and Family Welfare Department has extensive health care responsibilities, not only for the registered residents but also shares in caring for the migrant population. There are some 39 Delhi Government hospitals charged with inpatient care as well as outpatient services, including preventive care and health worker training.[15] The Family Welfare Directorate is also involved along with other agencies of Delhi Government, as well as non-governmental organizations (NGOs) in primary health care activities,[16] schemes to provide financial assistance as well as free services to pregnant women, and adolescent health clinics. The extensive plans and projects of the Health Department, including an inventory