# Health-care investments for the urban populations, Bangladesh and India

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| Objective | To estimate the costs and mortality reductions of a package of essential health interventions for urban populations in Bangladesh and India. |
| Methods | We used population data from the countries' censuses and United Nations Population Division. For causes of mortality in India, we used the Indian Million Death Study. We obtained cost estimates of each intervention from the third edition of *Disease control priorities*. For estimating the mortality reductions expected with the package, we used the *Disease control priorities* model. We calculated the benefit–cost ratio for investing in the package, using an analysis based on the Copenhagen Consensus method. |
| Findings | Per urban inhabitant, total costs for the package would be US$ 75.1 in Bangladesh and US$ 105.0 in India. Of this, prevention and treatment of noncommunicable diseases account for US$ 36.5 in Bangladesh and US$ 51.7 in India. The incremental cost per urban inhabitant for all interventions would be US$ 50 in Bangladesh and US$ 75 in India. In 2030, the averted deaths among people younger than 70 years would constitute 30.5% (1027/3362) and 21.2% (828/3913) of the estimated baseline deaths in Bangladesh and India, respectively. The health benefits of investing in the package would return US$ 1.2 per dollar spent in Bangladesh and US$ 1.8 per dollar spent in India. |
| Conclusion | Investing in the package of essential health interventions, which address health-care needs of the growing urban population in Bangladesh and India, seems beneficial and could help the countries to achieve their 2030 sustainable development goals. |

## Introduction

Cities promote national economic growth and prosperity, innovation and overall national welfare. The United Nations (UN) has pointed out that modern cities exhibit contrasts between wealth and poverty, opportunity and deprivation and vibrant potential and systemic decay. Cities have natural advantages in providing all kinds of services, not least because they are national economic drivers, with access to proportionately greater financing mechanisms than rural areas. Their size allows for a greater variety of services and economies of scale compared with sparsely populated areas. However, they also face challenges, for example, in establishing new health facilities where real estate is expensive and scarce, and in incorporating the long-neglected urban poor into comprehensive planning.

According to the UN, the proportion of the world’s population living in urban areas will increase, from an estimated 55% in 2018 to an estimated 68% by 2050. Bangladesh and India are experiencing some of the highest urban population growth rates in the world. The UN projects that the urban population will grow from 48 million in 2011 to 84 million in 2030 in Bangladesh. In India, the projected population increase is from 377 million to 612 million. This increase will be largely due to internal migration and natural population growth. Slums will account for an ever-greater proportion of urban inhabitants. In 2015, 62 cities in Bangladesh and India had more than 1 million population and five had more than 10 million; by 2030, 77 cities will exceed a population of 1 million and eight will exceed 10 million.

To meet the health needs of the growing urban population, health-care services need to expand. Currently, both countries have a mix of public and private health-care provision. In India, publicly-financed health services have been provided exclusively by public sector facilities, with little formal attention to either regulating the private sector or to delivering publicly-financed services through private providers. The Bangladeshi government has for the past two decades used some public financing to fund services through the nongovernmental organizations. In both countries, health infrastructure and services have steadily improved, but are still inadequate to serve the population need. Scarce efforts to improve urban health have been made over the last several decades, either by national governments or external partners.

To assess the cost and benefit of providing interventions for major public health, prevention and treatment needs for populations in Bangladesh and India, we identified interventions from the nine volumes of the third edition of *Disease control priorities*. The 208 interventions identified constitute a package of essential health services covering the most common causes of visits to doctors and admission to hospitals during the life course. This package includes almost all of the 218 interventions from the nine volumes of the third edition of *Disease control priorities*, omitting only those that are not relevant to South Asian populations, e.g., prevention and treatment of African trypanosomiasis. Box 1 presents some examples of the interventions; the full list is available in the third edition of *Disease control priorities*.

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### Abstracts in العربية, 中文, Français, Русский and Español at the end of each article.
available in the data repository. Here we estimate the costs, mortality reduction and the benefit–cost ratio of providing this package for the urban populations in Bangladesh and India.

**Methods**

**Demography and disease burden**

For both countries, we used population data from the 1991, 2001 and 2011 censuses, and the UN Population Division's (UNPD's) population projection for the year 2030. For cause-specific mortality estimates in urban India, we used data from the Medical Certification of Cause of Death for the years before 2001, and from the Million Death Study for 2001 and onward. Cause-specific mortality data for all ages are not available for Bangladesh.

**Cost of the package**

To estimate the cost of the package, we obtained cost estimates of each intervention for lower-middle income countries in 2012 United States dollars (US$), from the third edition of Disease control priorities. We used 2012 exchange rates from the World Health Organization (WHO) reports and the Global Burden of Disease model-based estimates for South-Asia for 2016. The earliest data were from 2011. Where epidemiological data were not available, we used estimates from the third edition of Disease control priorities for lower-middle-income countries.

For baseline coverage data, we used the Indian National Family Health Survey and the Demographic Health Survey in Bangladesh, which provide data on the urban population for most reproductive, maternal and child health, and...
household sanitation interventions.\textsuperscript{23,24} For other interventions, we used data from the published literature. For interventions similar to an intervention with available coverage data, we used that intervention as a proxy. We used WHO coverage estimates for malaria and tuberculosis diagnosis and treatment.\textsuperscript{29,30} For missing data (e.g. for mental health disorders) we used baseline coverage estimates for lower middle-income countries from the third edition of Disease control priorities.\textsuperscript{7,22}

To account for the costs of infrastructure, surveillance, regulation and other support activities, we added 40% of the total direct cost, that is, personnel, drugs and equipment costs. This infrastructure excess was based on an earlier detailed costing analysis for India.\textsuperscript{4} Using the above inputs, we estimated overall current annual spending, current annual spending per capita, and the incremental and total annual cost needed to achieve 80% coverage of the package. We also allocated the cost across major disease groups, and by platforms of health system (that is, population-based interventions, community services, health centres, first-level hospitals and referral and specialized hospitals) and the type of care provided (that is, urgent, recurrent for chronic diseases and others, such as childhood immunization).

Mortality reduction

We estimated the number of premature deaths (before 70 years of age) averted by the package by first estimating the age and sex distributions for urban population in Bangladesh and India for 2030. We did so by applying the age and sex distributions of the urban population of the 2011 Bangladesh and India censuses to the UNPD urban population projection for 2030.\textsuperscript{3,10} We projected 2030 baseline deaths using cause-specific mortality rates from the Million Death Study for urban India.\textsuperscript{12} Such data were unavailable for Bangladesh, so we used the average cause-specific mortality rates in urban West Bengal and Assam, the major Indian states bordering Bangladesh, as proxies. We used the effect sizes of the package interventions on mortality reduction for lower-middle income countries from a published working paper,\textsuperscript{31} assuming uniform effect sizes across all age groups and 80% efficiency in intervention delivery at baseline. We compared the estimated mortality reduction to the so-called 40x30 reduction target, which is a set of selected disease-specific targets to help achieve the sustainable development goal 3.\textsuperscript{32} This reduction target aims for a 40% reduction in deaths among people younger than 70 years; a two-thirds reduction in child and maternal mortality and mortality due to human immunodeficiency virus infection, tuberculosis and malaria; and one-third reduction in premature deaths from other communicable diseases, injuries and noncommunicable diseases.\textsuperscript{32}

Benefit–cost ratio

To estimate the benefit–cost ratio for investing in the package, we used a published method\textsuperscript{33} that is based on the Copenhagen Consensus method.\textsuperscript{34} We converted the number of deaths averted in the age groups 0–4 years and 5–69 years to disability-adjusted life years (DALYs). For the age group 0–4 years we used a factor of 97 DALYs per death averted. For the age group 5–69 years, we used 97 DALYs per death averted for the ages 5–49 years and 42 DALYs per death averted for ages 50–69 years. The conversion factors were derived by dividing the total all-cause DALYs by the total number of deaths in each age group in lower-middle income countries from the 2016 WHO global health estimates.\textsuperscript{35} We monetized the DALYs conservatively by multiplying by twice the 2016 gross domestic product (GDP) per capita in each country. We obtained GDP per capita from the World Development Indicators.\textsuperscript{21} We applied a 3% discount rate to costs and benefits over 15 years.

Sensitivity analysis

To examine the effect of the package on mortality reduction at different levels of delivery efficiency and coverage levels, we conducted sensitivity analyses at 70%, 80%, 90% and 95% efficiency in intervention delivery and at 60%, 70%, 80%, 90% and 100% coverage levels. All analyses were performed in Stata version 15.1 (StataCorp. LCC, College Station, United States of America).

Results

Demographics in 2030

As urban populations are increasing over the next decades, the population structure will shift towards middle and older ages, with the largest increases in the 30–69-year age group in both countries. The proportion of population aged 30–49 years will increase from 26.7% (12.8 million /48.1 million) in 2011 to 32.0% (26.9 million/84.1 million) in 2030 in urban Bangladesh, and from 28.2% (106.2 million /377.1 million) to 31.6% (193.5 million /611.5 million) in urban India. The proportion of population aged 50–69 years will increase from 10.4% (5.0 million /48.1 million) to 17.2% (14.5 million /84.1 million) in urban Bangladesh, and from 13.1% (49.2 million /377.1 million) to 18.2% (111.4 million /611.5 million) in urban India.

Fig. 1. Distribution of leading causes of mortality in urban India, 1990–2015

| Year | Cardiovascular disease | Infection | Injury | Perinatal |
|------|------------------------|-----------|--------|-----------|
| 1990 |                        |           |        |           |
| 1995 |                        |           |        |           |
| 2000 |                        |           |        |           |
| 2005 |                        |           |        |           |
| 2010 |                        |           |        |           |
| 2015 |                        |           |        |           |
(available in the data repository). This shift reflects migration patterns, a progress in preventing deaths in infancy and childhood, natural population growth and increased life expectancy due to income growth, education and better health-care services.

**Causes of mortality**

In urban India, noncommunicable disease deaths are rising as a proportion of overall mortality, such as cardiovascular disease, respiratory diseases and injuries (Fig. 1 and data repository). However, infectious diseases are still a problem. Urban crowding, lack of clean water and sanitation and mobility contribute to continuing transmission of infectious diseases. For example, India has a high tuberculosis burden, and Mumbai, a megacity of more than 18 million people, is a particular hotspot.

**The intervention package**

**Cost**

Table 1 shows the current annual spending on health services for the urban population in Bangladesh and India, and the incremental and the total annual cost if interventions in the package were implemented. At 80% coverage, the suggested package would cost US$ 75.1 per urban inhabitant in Bangladesh and US$ 105.0 in India by 2030. To achieve this coverage, the Bangladeshi government would need to increase their health spending by US$ 49.3 per urban inhabitant, while the Indian government would need to increase this sum by US$ 74.6 per urban inhabitant. To cover 80% of urban populations in 2030, both Bangladesh and India would need to spend about an additional 2.0% of the 2016 GDPS. This spending is an addition to the current spending of about 1.0% of the 2016 GDP.

The total incremental cost would be US$ 35.2 million in Bangladesh and US$ 53.3 million in India (Table 1). In both countries, most of the incremental cost would be invested in health centres, followed by first-level hospitals and community- and population-based interventions. Investment in referral and specialized hospitals accounts for only 5.3% (US$ 1.9 million) of the total incremental cost in Bangladesh and 3.8% (US$ 2.0 million) in India (Fig. 2).

Examining the distribution of package costs by type of provision showed that in both countries, more than half of the incremental cost, 50.9% (US$ 17.9 million) in Bangladesh and 58.6% (US$ 31.2 million) in India, would be invested in management of chronic conditions to reduce risk of further events. Routine interventions would account for 28.2% (9.9 million) of incremental costs in Bangladesh and 26.5% (14.1 million) in India. Urgent conditions account for the remaining incremental costs (Fig. 3).

**Mortality reduction**

If the countries’ governments would implement the recommended package, we estimate that per million population, the number of premature deaths in the

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**Table 1. Estimated cost of an urban package of essential health services for a city with a population of one million, Bangladesh and India**

| Variable | Cost per urban inhabitant, US$ | % of service delivery costs |
|----------|------------------------------|-----------------------------|
|          | Current annual spending | Incremental annual cost | Total annual cost in 2030 |
| Bangladesha | | | | |
| Package | | | | |
| Age-relatedd | 6.5 | 3.2 | 9.7 | 18.1 |
| Infectious disease | 6.5 | 5.4 | 11.9 | 22.2 |
| Noncommunicable disease and injury | 6.5 | 30.0 | 36.5 | 68.1 |
| Health service | 3.5 | 4.4 | 8.0 | 14.8 |
| Cost after removing duplicated interventionsf | 18.4 | 35.2 | 53.6 | 100.0 |
| Health system costf | 7.4 | 14.1 | 21.5 | NA |
| Total cost | 25.8 | 49.3 | 75.1 | NA |
| Total cost to cover all urban population by 2030, % of national GDP in 2016g | 1.0 | 1.9 | 2.9 | NA |
| Indiah | | | | |
| Package | | | | |
| Age-relatedd | 7.3 | 1.5 | 8.9 | 11.8 |
| Infectious diseases | 7.9 | 10.9 | 18.9 | 25.1 |
| Noncommunicable disease and injury | 8.7 | 43.0 | 51.7 | 68.9 |
| Health services | 3.2 | 6.1 | 9.3 | 12.5 |
| Cost after removing duplicated interventionsf | 21.7 | 53.3 | 75.0 | 100.0 |
| Health system costf | 8.7 | 21.3 | 30.0 | NA |
| Total cost | 30.4 | 74.6 | 105.0 | NA |
| Total cost to cover all urban population by 2030, % of national GDP in 2016g | 0.8 | 2.0 | 2.8 | NA |

GDP: gross domestic product; NA: not applicable; US$: United States dollars.

a Values are US$ except values for total cost to cover all urban population by 2030 that are in percentage.

b Some interventions are included in more than one package, hence the sum of the percentages is larger than 100.

c Total urban population of 2016 was 55.4 million people in 2016 and is projected to be 84.1 million in 2030.

d Age-related package includes maternal and newborn health interventions, child health interventions, school-age health and development interventions, adolescent health and development interventions, and reproductive health and contraception interventions.

e Some of the interventions are included in more than one package.

f Calculated as 40% of total service delivery cost.

g Based on GDP per capita of US$ 1717.47.

h Based on GDP per capita of US$ 1358.78.

i Total urban population of 2016 was 439.5 million people and is projected to be 611.5 million people.

j Based on GDP per capita of US$ 1717.47.

k Notes: We assumed that the interventions would cover 80% of the people. The monetary values are in 2016 US$.

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**Figure 1.** Urban health investments in Bangladesh and India Daphne CN Wu et al.
year 2030 would decrease from 3362 to 2335 in Bangladesh and from 3913 to 3085 in India. These averted deaths would constitute 30.5% and 21.2% of the baseline deaths in Bangladesh and India, respectively. The package would contribute to achieving the 40x30 reduction target by averting 76.3% (1027/1345 per million population) of premature deaths set by the target in Bangladesh. In India, this percentage would be 52.9% (828/1565 per million population). Furthermore, both countries would make progress towards the 40x30 target for under-five mortality by averting 168 deaths in Bangladesh and 163 deaths in India per million urban population, resulting in 58.2% of deaths set by the 40x30 reduction target to be averted (Table 2). Progress towards the 40x30 target for noncommunicable diseases would be much higher in Bangladesh (90.9%; 586/645) than in India (64.5%; 504/782).

**Benefit–cost ratio**

We estimated that in Bangladesh, the benefits of investing in the package would yield US$ 1.2 of benefits to each dollar spent; in India, the benefit would be US$ 1.8 (Table 3).

**Sensitivity analysis**

In Fig. 4 and Fig. 5, we have plotted varying intervention delivery efficiencies and coverage levels to demonstrate whether they would achieve the 40x30 reduction target for a city of one million population. Both countries could only achieve the 40x30 target for under-five mortality with at least 90% coverage and at least 90% efficiency in intervention delivery. In the 5–69-year age group, we found that in Bangladesh, the 40x30 reduction target could be achieved if the package was implemented with at least 90% efficiency and at least 85% coverage, or at least 80% efficiency and at least 90% coverage. In India, while substantial progress could be made, the 40x30 target could not be achieved even at the highest coverage and efficiency levels tested.

**Discussion**

We estimated that investing in a hypothetical package of 208 cost–effective health interventions that addresses the health-care needs of the growing urban population in Bangladesh and India is beneficial. For example, noncommunicable disease burden can be controlled with treatments that are low cost and feasible to deliver in primary care and hospital facilities, coupled with public health measures to reduce the impact of major risk factors, such as smoking and obesity. However, access to many of the most cost–effective health system interventions is currently limited, especially among the poorest population groups.

Expanding universal coverage of essential health interventions for adults could have a similar levelling effect as seen for improving child health with free or inexpensive vaccines and primary care.

In the last decades, the advance towards universal health coverage (UHC)
and the recognition that a healthy population is cost beneficial with substantial welfare gains, make a compelling case for public investment in urban health. In India, public expenditure on health was just over 1.0% of GDP in 2015, and in Bangladesh, this percentage was 0.8% in 2014. In both countries, out-of-pocket spending on health accounted for more than two-thirds of the total health expenditure. Increasing public spending on health could reduce out-of-pocket payments, as shown in other countries, while improving the quality of services. Increased public health expenditure advances UHC and avoids the impoverishment that often results from impovishment that often results from

Table 2. Estimated deaths averted by an urban package of essential health services in a city with a population of one million in Bangladesh or India, 2030

| Group                        | Bangladesh | India |
|------------------------------|------------|-------|
|                              | No. of projected deaths | No. of deaths averted if 40x30 target achieved* | Package implemented | No. of projected deaths | No. of deaths averted if 40x30 target achieved* | Package implemented |
| Age                          |            |       |                |                          |                                      |                    |
| 0–4 years                    | 432        | 288   | 168 (38.9)     | 58.2                     | 420                                 | 280                |
| 5–69 years                   | 2930       | 1057  | 859 (29.3)     | 81.3                     | 3493                               | 1285               |
| 0–69 years                   | 3362       | 1345  | 1027 (30.5)    | 76.3                     | 3913                               | 1565               |
| Cause                        |            |       |                |                          |                                      |                    |
| Infectious, maternal and perinatal conditions | 564       | 318   | 250 (44.3)     | 78.5                     | 586                                 | 297                |
| Noncommunicable diseases     | 1935       | 645   | 586 (30.3)     | 90.9                     | 2345                               | 782                |
| Injuries                     | 272        | 91    | 23 (8.5)       | 25.0                     | 432                                 | 144               |

* The 40x30 reduction target aims for a 40% reduction of deaths among individuals 0–69 years, a two-thirds reduction in child and maternal mortality and mortality due to human immunodeficiency virus infection, tuberculosis and malaria, and one-third reduction in premature deaths from other communicable diseases, injuries and noncommunicable diseases.

Notes: The package consists of 208 health interventions we identified through the third edition of Disease control priorities. Examples of interventions are presented in Box 1 and the full list is available in the data repository. Implementation of the package would also reduce mortality in people older than 70 years. However, we have not included these benefits.

Table 3. Benefit–cost ratio for an urban package of essential health services in a city with a population of one million in Bangladesh or India, 2016

| Cost or benefit                                      | Bangladesh | India |
|------------------------------------------------------|------------|-------|
| Total cost of package, million US$                    | 75         | 105   |
| GDP per capita, US$                                  | 1 359      | 1 717 |
| Total no. of deaths averted                          | 1 027      | 828   |
| Total DALYs averted                                  | 33 558     | 55 914|
| Benefit in monetary terms, million US$               | 91         | 192   |
| Discounted cost of package, million US$               | 48         | 67    |
| Discounted benefit, million US$                       | 59         | 123   |
| Benefit-cost-ratio with 3% discounting               | 1.2        | 1.8   |

DALY: disability-adjusted life year; GDP: gross domestic product; US$: United States dollars.

* Cost and benefit discounted at 3% over 15 years

Given the enormous gains in health and welfare from healthy populations in cities, countries could also responsibly take low-interest loans from the international market, with federal guarantees for on-lending or for grants to cities.

and improving the quality of-pocket payments, as shown in other spending on health could reduce out-of-pocket expenditures. Expecting that the governments of Bangladesh or India can immediately increase their expenditures to the suggested levels would be unrealistic, but they can plan for a decade-long scale-up of health spending and deploy new tactics to increase revenue to finance health-care. For example, they could require mandatory contributions from people with high income through taxation, and/or compulsory earmarked contributions for health insurance. Innovative financing schemes, such as issuing diaispora bonds to expatriates and imposing taxes on foreign exchange transactions, could be adopted. For instance, in 2017, an average daily turnover of foreign exchange amounted to US$ 58.0 billion in India; a transaction levy of 0.005% on every working day would yield about US$ 630.0 million a year. Taxes on tobacco and other harmful substances and reduced government subsidies on fossil fuels have also been recommended as strategies to increase revenue available for the health sector. Although tobacco taxes would not themselves provide enough to cover the financial needs of UHC, they could make significant contributions.

We estimated that to cover all million-plus cities in Bangladesh and India by 2030, governments must increase their current health spending about threefold. While this increase is large, this level of health spending is consistent with WHO recommendations, India’s Choosing Health Report and the National Commissions for Macroeconomics and Health in both countries. Expecting that the governments of Bangladesh or India can immediately increase their expenditures to the suggested levels would be unrealistic, but they can plan for a decade-long scale-up of health spending and deploy new tactics to increase revenue to finance health-care. For example, they could require mandatory contributions from people with high income through taxation, and/or compulsory earmarked contributions for health insurance. Innovative financing schemes, such as issuing diaspora bonds to expatriates and imposing taxes on foreign exchange transactions, could be adopted. For instance, in 2017, an average daily turnover of foreign exchange amounted to US$ 58.0 billion in India; a transaction levy of 0.005% on every working day
Fig. 4. Sensitivity analysis of reduction in under-five mortality for an urban package of health interventions, Bangladesh and India

![Graph showing the sensitivity analysis of under-five mortality reduction in Bangladesh and India.](image)

Notes: The estimations are based on cities of one million population. The 40x30 reduction target aims for a 40% reduction in deaths among people younger than 70 years, a two-thirds reduction in child and maternal mortality and mortality due to human immunodeficiency virus infection, tuberculosis and malaria; and one-third reduction in premature deaths from other communicable diseases, injuries and noncommunicable diseases.32

Fig. 5. Sensitivity analysis of reduction in mortality among individuals 5–69 years for an urban package of health interventions, Bangladesh and India

![Graph showing the sensitivity analysis of mortality reduction in individuals aged 5-69 in Bangladesh and India.](image)

Notes: The estimations are based on cities of one million population. The 40x30 reduction target aims for a 40% reduction in deaths among people younger than 70 years, a two-thirds reduction in child and maternal mortality and mortality due to human immunodeficiency virus infection, tuberculosis and malaria; and one-third reduction in premature deaths from other communicable diseases, injuries and noncommunicable diseases.32
Borrowing from development partners, such as the Asian Development Bank and the World Bank is also attractive, given the large returns produced by investments in population health. Novel mechanisms to enable cities to borrow or spend with federal financing and support could also be developed. For example, in addition to providing loan financing, the Asian Development Bank provides technical assistance and advisory services to enhance and accelerate operationalization of the government’s investment on health policies, programmes or projects. This investment will be returned by improved economic growth, and by lifting many out of poverty and maintaining the vibrancy and enhancement of many of the world’s largest cities.

Our study has several limitations stemming mainly from the limited reliable data available for many of the inputs. Data on intervention costs in low- and middle-income countries are particularly sparse. We believe the Disease control priorities cost information is the best currently available data, but many of the costs are based on very few studies and in some cases, based on similar interventions because no reliable cost studies were found. Improved studies of local intervention costs in multiple sites are needed to improve estimates, including the benefits that may come with economies of scale in urban areas. Data on current coverage levels for several interventions are lacking. In our study, we used global estimates for lower-middle income countries for coverage and populations in need of mental health interventions and rehabilitation services from Disease control priorities because country-specific data are missing for both countries. Reliable mortality data for Bangladesh are also missing.

Better population health is a profitable investment, resulting in increased productivity and economic stability. Expanding health expenditure increases productivity and years lived with good health, and the health sector is a source of employment at every level, raising the national GDP. Sufficient funds for expansion of coverage of health interventions may not be immediately available, but future economic growth, driven by cities, is justifying that Bangladesh and India should expand investments in urban health.

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ملخص

استثمارات الرعاية الصحية لسكان الحضر في بنغلاديش و الهند

غرض التكاليف و حالات انخفاض معدلات الوفيات لمجموعة من التدخلات الصحية الأساسية لسكان الحضر في بنغلاديش و الهند، يبدو مفيدًا ويمكن أن يساعد البلدان والدول التي تلبي احتياجات الرعاية الصحية لنسبة السكان الحضرية.

إن الاستثمار في حزمة التدخلات الصحية الضرورية، فإن نسبة حالات الوفيات التي تم تجنبها بين الأشخاص الأصغر من 70 عامًا سوف تصل إلى 30.5% (3362/10272), 21.2% (3913/18828) من وفيات عموم الصدق في بنغلاديش و الهند، على الترتيب، مع الأوبئة القاحفة في الحزمة." و بحلول عام 2030، فإن معدلات الوفيات التي تم تجنبها بين الأشخاص الأصغر من 70 عامًا سوف تصل إلى 51.7% (1027/2030) في بنغلاديش، و 51.8% (1027/2020) في الهند.

أعمال: سنكون إجمالي تكاليف الحزمة لكل مقيم بالحضر هو 36.5 دولارًا أمريكياً في بنغلاديش و 51.7 دولارًا أمريكياً في الهند. ومن هذه المبالغ، كانت الوقاية من الأمراض غير المعدية وعلاجها تمثل 36.5 دولارًا أمريكياً في بنغلاديش و 51.8 دولارًا أمريكياً في الهند.

استثمار الرعاية الصحية لسكان الحضر في بنغلاديش و الهند

 الاستثمار في حزمة التدخلات الصحية الأساسية لسكان الحضر في بنغلاديش و الهند، بحلول عام 2030، سوف تصل إلى 75.1% (1027/1362) من 70 عامًا، سوف تصل إلى 75.1% (1027/1362) من 70 عامًا، في بنغلاديش و 70.5% (1027/1462) في الهند.

تعتبر رصدت نتائجنا في حزمة التدخلات الصحية الأساسية، والتي تغطي الرعاية الصحية للسكان الحضرية المتواجدة في بنغلاديش و الهند، يمكن أن يساعد البلدان في تحقيق أهداف التنمية المستدامة لعام 2030.

ملخص

孟加拉国和印度对城市人口的卫生保健投资

目的 旨在评估孟加拉国和印度城市人口一系列基本卫生干预措施的成本和死亡率降低情况。

方法 我们使用了来自各国人口普查和联合国人口司的人口数据。我们使用印度和孟加拉国国家医疗卫生研究中的数据调查印度人口死亡原因。我们从第三版《疾病控制》优先事项中获得了每项干预措施的成本估算数据。我们使用了疾病控制优先事项模型计算该方案预期降低的死亡率。我们使用基于哥本哈根共识方法的分析，计算了投资该系列计划的效益成本比。

结果 每位孟加拉国城市居民的总费用为 751 美元 (US$), 每位印度城市居民的总费用为 1050 美元。其中，每位孟加拉国城市居民用于预防和治疗非传染性疾病费用为 36.5 美元，印度为 51.7 美元。孟加拉国所有干预措施的城市居民人均增量成本为 50 美元，印度为 75 美元。到 2030 年，70 岁以下人群的避免死亡人数将分别占孟加拉国和印度估计基线死亡人数的 30.5% (1027/3362) 和 21.2% (828/3913)。投资该系列计划的卫生保健效益将使孟加拉国和印度分别获得人均 1.2 美元和 1.8 美元的回报。

结论 投资该系列基本卫生干预措施可解决孟加拉国和印度不断增长的城市人口对卫生保健的需求，有助于帮助这些国家实现其 2030 年可持续发展目标。
Resumen
Investiciones en atención de la salud para las poblaciones urbanas, Bangladesh y la India

Objetivo Estimar los costos y las reducciones de la mortalidad de un conjunto de intervenciones sanitarias esenciales para las poblaciones urbanas de Bangladesh y la India.

Métodos Se utilizaron datos de población de los censos de los países y de la División de Población de las Naciones Unidas. Para las causas de mortalidad en la India, se utilizó el Royal Million Deaths Study (Estudio del Millón de Muertes en la India). Se obtuvieron estimaciones de costos de cada intervención a partir de la tercera edición de Disease control priorities (Prioridad para el control de enfermedades). Para estimar las reducciones de mortalidad esperadas con el paquete, se utilizó el modelo de Disease control priorities. Se calculó la relación costo-beneficio para invertir en el paquete, utilizando un análisis basado en el método del Consenso de Copenhagen.

Resultados Por habitante urbano, el costo total del paquete sería de 75,1 dólares estadounidenses (USD) en Bangladesh y 105,0 USD en la India. La prevención y el tratamiento de las enfermedades no transmisibles representan 36,5 USD en Bangladesh y 51,7 USD en la India. El costo adicional por habitante urbano para todas las intervenciones sería de 50 USD en Bangladesh y 75 USD en la India. En 2030, las mayores beneficios para la salud de invertir en el conjunto de intervenciones esenciales de la salud de Bangladesh y la India, sería de 1,2 USD por cada dólar invertido en Bangladesh y 1,8 USD por cada dólar invertido en la India.
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