

# Hypertension and older people



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## Key messages

- Hypertension is the leading cause of death and disability among older people in developing countries.
- New data from the World Health Organization (WHO) show that older people living in poverty in rural settings are particularly at risk of stroke, heart disease and other serious illnesses caused by hypertension, since they are less likely to manage their condition.
- Worldwide, less than one in ten older people with hypertension are taking effective treatment.
- Treatment for hypertension is simple and affordable, but remains a low priority among development agencies and governments.

## Introduction

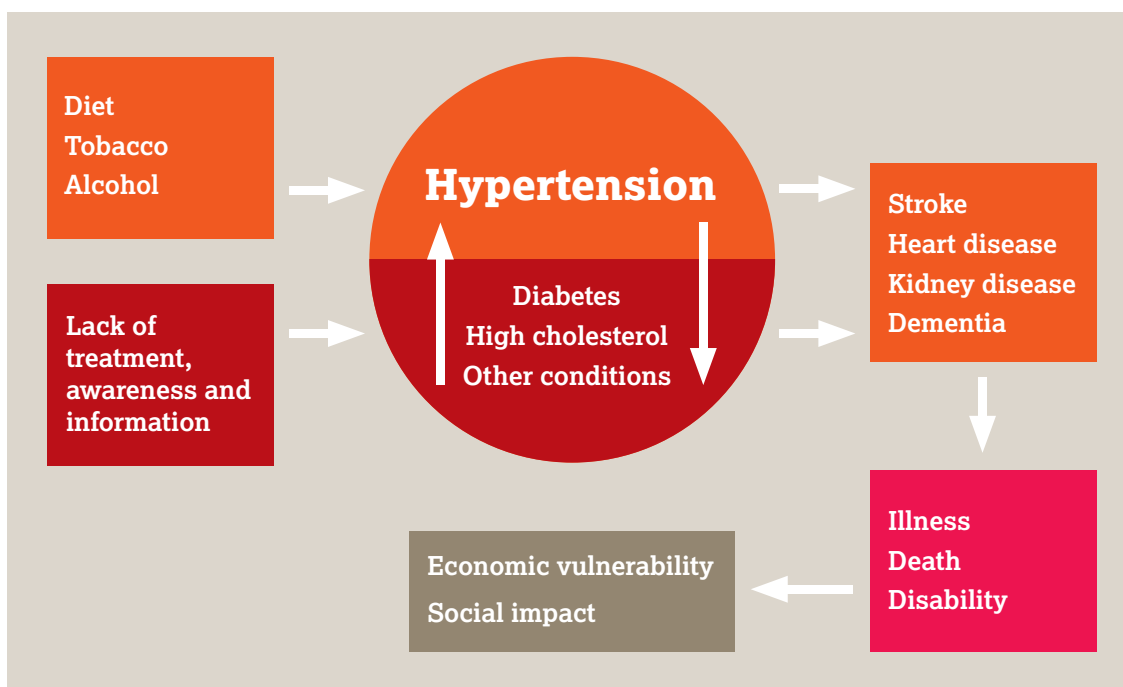
Every year, hypertension (dangerously high blood pressure) is responsible for as many as 7.3 million deaths in developing countries, mostly affecting people in older age.<sup>1</sup> This compares to an estimated 1.7 million deaths worldwide due to the HIV epidemic. Hypertension is also the leading cause of long-term illness and disability among older people in developing countries.

Despite these facts, hypertension is not commonly recognised as a leading cause of death, disability or illness. This is because it does not have easily noticeable symptoms, and levels of public awareness of hypertension are low.

Instead of producing direct symptoms, hypertension substantially increases the risk of other health conditions including stroke, heart disease, kidney disease and dementia. For example, the risk of experiencing a stroke is two to three times higher for people with hypertension than for those with safe levels of blood pressure.<sup>2</sup> Figure 1 summarises the key causes and effects of hypertension and associated conditions. There is a wide range of factors that increase the risk of developing hypertension, including behavioural factors such as diet and smoking. A lack of awareness and treatment reduces the capacity of hypertensive older people to manage their condition, increasing the risk that it will lead to serious health problems. The deaths and disability that result from these health problems heighten household economic vulnerability and have wider social effects.

Hypertension and its associated health conditions remain a low priority for development agencies and governments. For example, non-communicable diseases (NCDs) accounted for less than 3 per cent of global aid spending on health between 2001 and 2008.<sup>3</sup> One reason for this neglect is that it is often claimed these health conditions are relatively uncommon among poor people, especially in low-income countries.<sup>4</sup> However, new data show that hypertension affects poor people just as much as richer people and that poor people are less likely to have access to effective treatment. There is considerable scope to reduce the incidence of hypertension among older people and its impact on them and their families through simple and cheap forms of treatment. Currently, the great majority of older people in low- and middle-income countries are excluded from these services. Extending basic treatment could save millions of lives at very little cost. But this requires political will and a concerted effort by national and international agencies.

**Figure 1: Potential risk factors and effects of hypertension**



## Who has hypertension?

Until recently, data on hypertension rates among older people in low- and middle-income countries were quite limited. Newly available data from the WHO's Study on Global Ageing and Adult Health (SAGE) survey (Box 1) show that hypertension affects a large share of older populations, even in relatively poor countries such as Ghana (Table 1). These rates compare to those reported for high-income countries – indeed, South Africa's is the highest rate for any country in the world for which data are available.

### Box 1: The WHO Survey of Global Ageing and Adult Health (SAGE)

**SAGE is a collection of nationally representative household surveys for people aged 50 and over in six countries: China, Ghana, India, Mexico, South Africa and the Russian Federation. These surveys were conducted between 2008 and 2010, and include 35,125 people aged 50 and over.**

**More information about the SAGE sampling methods and design and the individual and household questionnaires is available at: [www.who.int/healthinfo/systems/sage](http://www.who.int/healthinfo/systems/sage)**

**Table 1: Population aged 50 and over measured as hypertensive (%)**

	Average	Men	Women	Rural	Urban	Poorest 20%	Richest 20%
China	60	59	60	62	57	63	57
India	33	30	35	31	37	36	40
Ghana	57	55	60	51	66	47	66
Mexico	58	55	61	61	58	64	52
Russian Federation	71	66	75	71	71	72	61
South Africa	78	75	80	78	78	76	79

It is sometimes claimed that diseases such as hypertension mainly affect relatively wealthy and privileged groups of people, especially in poorer countries. But the data in Table 1 show that this is not the case. In China, Mexico and the Russian Federation, rates of hypertension among the poorest quintile were in fact higher than average. Table 1 also shows that hypertension is more common among older women.

Further, Table 1 reveals large variations in rates of hypertension, which do not match variations in relative national prosperity: average rates for Ghana, Mexico and China, for example, are very similar. National variations are much larger than disparities between richer and poorer older people in the same country. The causes of these variations are quite complex, but one factor that stands out as especially significant is national differences in rates of overweight/obesity among older people. This can be seen in Table 2, which shows patterns of overweight/obesity that broadly match rates of hypertension. For example, India had both the lowest rate of overweight/obesity (13 per cent) and the lowest rate of hypertension (33 per cent).

Table 2 shows that overweight/obesity is a condition that affects poorer groups of older people, even in some low-income countries such as South Africa, where 61 per cent of the poorest group are obese.

**Table 2: Population aged 50 and over who are either overweight or obese (%)**

	Average	Men	Women	Rural	Urban	Poorest 20%	Richest 20%
China	35	31	40	32	39	24	42
India	13	9	16	9	22	3	26
Ghana	30	25	35	19	44	12	51
Mexico	78	78	78	73	79	69	81
Russian Federation	75	71	78	76	75	72	76
South Africa	72	66	77	64	76	61	81

## Awareness and control of hypertension

Hypertension does not have obvious symptoms and therefore people are unlikely to be aware of their condition unless they have had their blood pressure measured. Limited access to healthcare services, particularly in poorer countries, partly explains very low levels of awareness among older people. Table 3 shows that, with the exception of the Russian Federation, less than half of hypertensive older people were aware of their condition before their blood pressure was tested by the survey team. Awareness was particularly low among poorer groups and those living in rural areas. For example, in India and Ghana, awareness among the poorest was less than half the national average, at 19 per cent and 11 per cent respectively.

Limited awareness of hypertension reduces the likelihood that older people will seek and adhere to treatment, and bring their blood pressure back down to safe levels. Table 4 shows the low proportion of older people with hypertension who had managed to do so. Average rates of control are less than 15 per cent for any country, and less than 10 per cent for China, Ghana and South Africa. Predictably, rates of control are lower for poorer older people, due to their more limited access to health services. In five of the six countries, rates of control for this group were just 6 per cent or less. Reduced rates of hypertension control among older people who are poor mean that they are particularly at risk of associated illnesses such as stroke and heart disease.

**Table 3: Population aged 50 and over who are hypertensive and aware of their condition (%)**

	Average	Men	Women	Rural	Urban	Poorest 20%	Richest 20%
China	44	38	47	31	57	34	52
India	38	36	40	31	52	19	53
Ghana	23	19	27	15	33	11	38
Mexico	45	39	49	51	43	53	51
Russian Federation	72	61	78	73	72	64	82
South Africa	38	33	42	33	41	28	44

**Table 4: Population aged 50 and over who are hypertensive and control their condition (%)**

	Average	Men	Women	Rural	Urban	Poorest 20%	Richest 20%
China	8	8	8	2	16	5	11
India	14	13	15	11	21	5	24
Ghana	4	4	4	2	7	2	10
Mexico	12	7	16	17	10	16	13
Russian Federation	11	9	12	7	12	6	14
South Africa	8	6	9	5	9	3	11

## The economic and social impact of hypertension on older people and their families

Obtaining treatment for hypertension need not have a significant economic impact on older people and their families. The cost of generic medication to control high blood pressure is relatively low or freely available (in theory if not in practice) from government providers.<sup>5</sup> For many older people, the main barrier to treatment is unavailability of drugs rather than cost.

The most important social and economic effects of hypertension occur indirectly, through increased risk of stroke, heart disease and other serious health conditions. The WHO SAGE survey does not provide data on these effects, and evidence from other studies is very limited. The few available studies indicate that these health conditions account for a significant and growing share of household impoverishment. For example, a national survey in China found that 37 per cent of patients and their families fell below a US\$1 a day poverty line within three months of experiencing stroke.<sup>6</sup> One reason for this large economic impact is that emergency stroke treatment is very expensive. A second reason is that a large proportion of stroke survivors experience permanent and serious disability, reducing their earning capacity and leading to substantial care needs (see boxes 2 and 3).

### Box 2: The household impacts of stroke in Brazil

**Marco spent his life working on cacao plantations in the north east of Brazil. He retired at 65, and received a basic state pension, supplemented with earnings from odd jobs.**

**When he was 67, Marco suffered a stroke and was hospitalised for a month. He did not have medical insurance, but his treatment and medication were provided free of charge. Following discharge, he received free physiotherapy and after three months was able to walk again, albeit with difficulty. Despite this, Marco became very depressed and tearful, and he was no longer able to work. His wife cared for him, helped by a young woman in exchange for board and lodging. A few months later, Marco suffered a second stroke and he died a week later, aged 67.**

**Marco's widow was not entitled to benefit from his pension after his death. Without Marco's pension and earnings from odd jobs, the family found it increasingly hard to cope financially and fell into debt. His wife developed hypertension and became depressed after Marco's death.**

Source: Lloyd-Sherlock P, *The situation of older people in Ilhéus: preliminary findings from the in-depth interviews*, 2010, [www.sed.manchester.ac.uk/research/ageingandwellbeing/index.htm](http://www.sed.manchester.ac.uk/research/ageingandwellbeing/index.htm)

### Box 3: The household impacts of stroke in Indonesia

Bima was a civil servant from a middle-class family in Jakarta. He first became aware he had hypertension when he was 45 and suffered a minor stroke. Bima was treated in a government hospital and prescribed anti-hypertensives. These were not effective in lowering his blood pressure, so he purchased expensive imported drugs, which consumed about half of his household's income. To cover these extra costs, the family sold both their cars, land, and used up savings.

When he was 62, Bima had a second, more serious stroke, which left him partially paralysed and mentally impaired. His family paid for physiotherapy and acupuncture, as well as a full-time nurse. Combined with the cost of the drugs, this took up the vast bulk of the household income. They sometimes needed help from friends and their wider family.

Five months after his second stroke, Bima suffered a third stroke and was hospitalised for two weeks. By now, he was increasingly depressed, bad-tempered and difficult. The nurse found this stressful and his wife was forced to pay her in compensation. Over the following months, Bima lost the ability to speak and started to refuse food and drink. Nevertheless, with intensive nursing and care from his wife, he survived for a further three years. Bima's wife remains distressed by the loss of her husband and the unpleasant, prolonged nature of his illness. Recently, she herself developed high blood pressure and was hospitalised.

Source: Lloyd-Sherlock P, *Population ageing and international development: from generalisation to evidence*, Policy Press, Bristol, 2009

## Conclusion: meeting the hypertension challenge

As with the response to the HIV epidemic, an effective response to the global hypertension crisis requires multiple strategies, including awareness raising, prevention and medication. Given the close association between hypertension and overweight/obesity, interventions targeting diet and exercise should be given high priority. Restricting salt intake through voluntary changes by the food industry in terms of food processing and consumer advice should also be promoted. However, these policies face resistance from powerful economic interests, as well as cultural reluctance to embrace behaviour change.<sup>7</sup>

An equally important strategy to reduce the health risks associated with hypertension is through use of simple medication to control the condition. Theoretically, treating hypertension is relatively cheap and easy, especially when compared to drug therapies for tuberculosis (TB) and HIV. For example, the WHO has estimated that the cost of drug therapy to control hypertension and cholesterol for an older person in South Africa for an entire year is just US\$2.<sup>8</sup> However, in practice, there are often significant barriers to effective treatment. Patients may not take the medication on a daily basis, either because of lack of a reliable drug supply, undesirable side-effects or (particularly in the case of the very old) due to forgetfulness and cognitive impairment. Since hypertension is often asymptomatic, these effects are not offset by any immediate, noticeable health benefits to the user. There may also be specific cultural barriers that lead to suspicion or mistrust of medication. Efficacy can be enhanced by prescribing the correct drug and providing the user and their families with suitable advice about the condition and its treatment.

The new WHO data show that low levels of awareness and gaps in service provision are also key barriers to treatment, especially for poor older people in rural settings. This calls for public awareness campaigns accompanied by modes of



service delivery tailored to specific settings. In rural South Africa, for example, there may be opportunities to link treatment of hypertension and other common NCDs with monthly distributions of social pensions. These interventions need to recognise the challenges of providing treatment in a form that is acceptable to older people and that encourages them to follow treatment guidelines.

Treating hypertension requires a reorientation of drug procurement systems and primary healthcare services away from an exclusive focus on infectious disease and maternal and child health towards NCDs. This would enhance the relevance of health services to older adults as well as to the population more generally. There are opportunities to link hypertension services with basic interventions for other conditions, including infectious diseases, through a more general upgrading of primary healthcare. Evidence suggests it is feasible to integrate service provision for HIV with services for NCDs such as hypertension and diabetes.<sup>9</sup>

In recent years, global health policy makers have highlighted the potential health benefits of extended access to health insurance, as well as cash transfers.<sup>10</sup> To what extent can these interventions help enhance hypertension treatment and control? Analysis of the SAGE data found that the effect of health insurance was very uneven across different countries.<sup>11</sup> These divergent results probably reflect differences in the design of health insurance schemes and local variations in health service provision. Put simply, even if older people can afford health insurance, they are unlikely to benefit from it unless suitable health services are supplied with affordable essential and appropriate treatments. Similarly, there is no evidence that generous cash transfers can compensate for a lack of basic health awareness and effective health services (see Box 4).

How feasible is extending control of hypertension in low- and middle-income countries? Most high-income countries rarely achieve hypertension control rates of over 30 per cent,<sup>12+13</sup> although Japan has achieved a rate of 42 per cent for people aged 60 and over, which has been identified as the main factor extending life expectancy in that country.<sup>14+15</sup> Barriers to control are inevitably greater where resources and infrastructure are limited, but achieving a target of 20 per cent should be feasible for most developing countries. India has already exceeded this rate for its urban population. Globally, reaching this 20 per cent target could translate into hundreds of thousands of lives saved every year.

## **Box 4: Pensions and hypertension in South Africa**

**It is sometimes claimed that pensions can improve older people's health. This may occur in various ways, such as by helping them pay for essential medication.\* Yet South Africa has the highest rate of hypertension ever recorded for a developed or developing country, and a generous pension scheme upheld as a model for other countries.**

**A new study using SAGE data for South Africa performed statistical analysis of pension effects on health outcomes, taking into account a range of other factors such as education and rural/urban location. It found that receiving a pension was associated with higher rates of outpatient service use, as well as higher rates of hypertension awareness and treatment. Despite this, the study did not find that receiving a pension was associated with higher rates of hypertension control; in part, because treatment was ineffective for over three-quarters of the sample.**

**This shows that, although pensions may potentially enhance some aspects of health, their impact on conditions such as hypertension also depends on good health awareness and the local availability of effective treatments.**

\*Case A, *Does money protect health status? Evidence from South African pensions*, NBER Working Paper 8495, National Bureau of Economic Research, Cambridge MA, 2001

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## Resources

The NCD Alliance [www.ncdalliance.org](http://www.ncdalliance.org)

WHO Noncommunicable diseases factsheets [www.who.int/mediacentre/factsheets/fs355/en/index.html](http://www.who.int/mediacentre/factsheets/fs355/en/index.html)

WHO Study on global AGEing and adult health (SAGE) [www.who.int/healthinfo/sage/en/index.html](http://www.who.int/healthinfo/sage/en/index.html)

## Endnotes

1. This calculation is made by dividing the total number of deaths in less developed regions, excluding least developed countries (on average 38.7 million a year between 2010 and 2015) by the proportion of deaths in middle-income countries attributable to hypertension (17 per cent); and performing the same calculation for least developed countries (8 per cent of 8.2 million deaths). The data is taken from the WHO Global Burden of Disease and the United Nations Population Division. The categories less/least developed and low/middle income countries do not perfectly match, reducing the accuracy of this calculation.

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