

SUSTAINABLE DEVELOPMENT GOALS

Fight non-infectious diseases and save 5m lives

COMMENTARY

DR BJØRN LOMBORG

For the first time, more people in the developing world are dying from strokes and heart attacks than infectious diseases

In rich countries, the biggest causes of death are strokes, heart attacks and cancer, accounting for more than two-thirds of all deaths. For the poorer ones, people often assume that infectious diseases like diarrhoea, tuberculosis, Aids, malaria, measles and tetanus are the biggest killers. That is no longer true. While they are still substantial threats, the availability of medication and vaccines along with higher living standards have caused deaths due to communicable diseases such as these to drop to below nine million each year.

For the first time, more people in the developing world are now dying from strokes and heart attacks than infectious diseases. Combined, the diseases that are not infectious — the non-communicable diseases or NCDs — cause almost two-thirds of all deaths in the developing world, over 30 million each year. For Kenya, almost 22 per cent of all deaths are caused by NCDs.

The good news is that there are ways to help, that could avoid up to five million deaths each year. Because generally the NCDs have received less attention, the solutions are often very effective and cheap.

This is the argument made in a new paper written by Rachel Nugent of the University of Washington. Hers is one of a series commissioned by the Copenhagen Consensus Centre, from over 60 teams of top economists. The idea is to be able to compare the costs and benefits of a wide range of proposed tar-

gets to help the global community adopt the best.

In the year 2000, the world's governments made an historic commitment to a set of ambitious 15-year targets under the umbrella of the Millennium Development Goals. While much has been achieved, there is still more to be done. That's why 193 national governments are now debating hundreds of proposed targets for the next 15 years. In September, the world will agree to a list of targets to help build a better life for the world's poorest people. Our economic analyses show where the world's leaders can help the most for each dollar spent.

Prof Nugent looks at a range of targets that collectively could cut almost a third of all premature deaths from NCDs by 2030. This is a pretty demanding target because premature death rates are already quite low in the developed world, and most of those below the age of 70 occur in poorer countries. And the problem is accelerating. The number of people affected by these diseases is set to increase by 17 per cent over the next 10 years, and by 27 per cent in Africa. For Kenya, deaths from NCDs have increased by more than half over the past two decades.

Tobacco, the single biggest killer will cause 10 million deaths by 2030. In China, one-third of all male deaths will be caused by tobacco then (but very few female deaths, since just a small percentage of Chinese women smoke). As the rich



A man receives emergency defibrillation. Defibrillation is used to treat a life-threatening irregular heart-beat (arrhythmia) or in the case of cardiac arrest (stopped heart). Pic: File

countries have shown, the most effective way to cut smoking is to increase taxes dramatically. A tax in low- and middle-income countries that causes a rise in the cost of cigarettes by 125 per cent would still leave cigarettes cheaper than in the West. Even considering that smuggling would increase, it would likely cut consumption by half.

Administration of this tax costs \$3.5 billion annually, but it would save 2.5 million premature deaths every year. Every dollar spent would give benefits valued at \$22.

About a billion people on the planet suffer from high blood pressure, causing nine million deaths. This affects 44.5 per cent of adults in Kenya. This is not just a disease of the rich world — it affects 46 per cent of African adults and 49 per cent in Uganda. The cost of diagnosis and cheap hypertension medication would be \$2.50 per year per capita, so helping the higher-risk patients would cost \$500 million but avoid 770,000 premature deaths each year. Every dollar invested would do \$47 of good.

One of the simplest ways to reduce high blood pressure is to lower the salt intake. Gradual reduction of the salt content in bread and other processed foods has been successful in a number of countries, with very little sign of consumer resistance. Reducing salt intake by 30 per cent is reckoned to avoid 815,000 premature deaths (and more than double this number if deaths over the age of 70 are also counted). It would also be a great use of resources, paying back \$39 for every dollar spent.

Finally, there are about 100 million people below 70 surviving their first stroke or heart attack, or at high risk of dying from heart disease. Providing them with a multi-drug regimen including aspirin, blood pressure lowering drugs, and cholesterol-lowering drugs can prolong their lives considerably. At \$55, the cost is substantial but it will save almost a million lives. Every dollar will provide a benefit of \$7.

The choice that the global community is faced with when agreeing the set of post-2015 goals is not an easy one, but it is vital that the targets included can do the most good and provide value for money. Based on this analysis, reducing deaths from non-communicable diseases deserves very serious consideration.

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Dr Bjørn Lomborg, an adjunct professor at the Copenhagen Business School, directs the Copenhagen Consensus Centre, ranking the smartest solutions to the world's biggest problems by cost-benefit. He is the author of *The Sceptical Environmentalist* and *Cool It, His new book is How To Spend \$75 Billion to Make the World a Better Place.*

Scientists find promising drug for multiple sclerosis

By CHRISTABEL LIGAMI
Special Correspondent

SCIENTISTS AT the Centre for Addiction and Mental Health in Toronto, Canada, have discovered a promising new drug to treat multiple sclerosis.

Multiple sclerosis (MS) is a progressive, often disabling neurological disease, which is most often diagnosed among young adults between the ages of 15 and 40.

While the exact cause of MS is unknown, the body's immune response is involved, and is the target of all current medications used in treatment. These medications do not cure the illness, but help to alleviate symptoms and slow the progression of the disease.

In their findings reported in

the *Annals of Clinical and Translational Neurology* journal, the scientists they identified a previously unknown change in the spinal cord related to MS, and a way to alter this change to reduce the nerve cell damage that occurs with the disease.

"This approach aims to stop the nerve damage related to an important brain transmitter called glutamate," said Fang Liu, the lead scientist for the study.

The focus of the scientists' investigation was a spinal cord change that involved a protein, that attaches to a specific cell receptor for the glutamate neurotransmitter. Glutamate is involved in learning and memory.

"This linked receptor-protein complex was present at higher

levels in spinal cord tissues of deceased MS patients and in animal models for MS," said Dr Liu.

Using techniques developed in the lab, the researchers created a new peptide — a tiny piece of protein — to try and disrupt this change in animal models of MS.

"We found that our peptide disrupted this linkage, and led to major improvements in neurological functioning," said Dr Liu.

Specifically, motor function was significantly better compared with a comparison group. The peptide also had a positive impact on the nerve damage associated with MS — it reduced neuron death, and rescued the protective coating of neurons called myelin, which is characteristic of MS. It also increased the survival of the cells

that produce myelin.

In MS, inflammation damages myelin in the central nervous system, which can harm the underlying nerves and interrupt the transmission of nerve impulses. MS is associated with a wide variety of symptoms, based on where the damage occurs in the central nervous system.

Importantly, the new peptide didn't appear to suppress the body's immune response system directly, and did not impair physiologically essential neuron transmission in the brain — a common side effect for drugs targeting the glutamate system, said Dr Liu. "Our priority now would be to extend this research and determine how this discovery can be translated into treatment for patients."



Scientists have identified and found a way to alter a previously unknown change in the spinal cord that would reduce the nerve cell damage linked to multiple sclerosis. Pic: File