



Medicine for Managers

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Global Warming

Everyone knows about global warming and the significant increase in global temperatures, with 2024 being the warmest year on record. The last decade has contained the ten warmest years and the earth's temperature has risen by between 1.3 and 1.4°C since the pre-industrial era around 1850. Humankind has generated increasing levels of greenhouse gases which have resulted in all the changes reported daily on the news media.

Melting ice caps, rising sea levels and extreme weather events have all become daily news stories. Not only is the globe warming three times more quickly than it did in 1850 but the trend has continued to increase since the 1970s.

Oceans absorb much of the heat increasing sea temperatures. Land temperatures increase more quickly than the oceans and the rise is happening more than twice as quickly in the Arctic.

So, polar ice is melting, sea levels are rising and many more extreme weather events are now occurring.

Greenhouse gases added to the air increased by over 50% in the last 35 years with carbon dioxide levels alone increasing by 42%

Little has been reported about the impact of the changes on health and healthcare.

Apart from the physical challenges of extreme weather events, heatwaves and flooding will result in an increase in a range of medical problems such as heat-related illness, the spread of vector-borne diseases and respiratory problems.

The effect of rising temperatures has already been most keenly felt in the tropical areas and so, inevitably, the most adverse health effects have generally been felt by the poor.

Difficulties develop directly as a result of damage to healthcare facilities and compromise of services like energy and water. In the UK the health system and particularly in-patient beds, will come under

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extreme strain through increased demand during events such as heatwaves.

The healthcare providers also contribute to global warming because:

- They contribute to greenhouse gases because of their high electricity and other service demands to maintain facilities
- Production and transport of staff, medical equipment, pharmaceuticals and other required products
- The production and disposal of substantial medical waste materials, not least from single use devices
- Anaesthetic gases which are potent greenhouse gases, and propellants used in some inhalers, contribute significantly.

Many infectious and parasitic diseases are spread by intermediate hosts, such as insects, ticks and snails.

Rising temperatures will enable more widespread dissemination of the carriers taking with them such diseases as leishmaniasis, schistosomiasis, dengue fever, yellow fever, malaria and much else.

Consider trypanosomiasis (sleeping sickness). It is confined to central Africa. If temperatures rise by a further 0.5-1.0°C, the infection carrier, the tsetse fly, will be able to expand its geographical boundary southwards towards South Africa with severe consequences both for humans and their animals.

Malaria cases have declined as some former endemic areas have been cleared.

Nonetheless in 2023 there were 263 million cases and about 600,000 deaths.

Currently the infection may be generally caught through the bite of an infected mosquito in areas of Africa, Asia, South America, parts of the Middle East and some Pacific Islands.

However, malaria was endemic in some parts of southern Europe until the 1950s and was common in Britain during the nineteenth

century in areas such as the Fens. Increasing temperatures would favour the return of the anopheline

mosquito, which might be complicated by the fact that both the parasite and the insect vector are increasingly resistant to medicines and insecticides.

Global warming disrupts weather patterns. Periodic droughts are likely leading to malnutrition in some areas with increased risk of TB, leprosy, measles, whooping cough and poliomyelitis.

Water shortage also results in deterioration of public health services including sewage disposal. The result of water contamination could easily be the spread of typhoid, cholera and similar diseases.

The situation is further worsened by the pollution which has increased through petrol and diesel cars producing a cocktail of hydrocarbons, oxides of nitrogen and ozone.

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The gases are known to damage the lining of the lung and it is well recognised that asthma has doubled in the past decade and incidence is rapidly increasing.

Other respiratory illnesses are induced or exacerbated by pollution.

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Diminishing ozone may be reflected in the increasing rate of skin cancer.

Predictions are difficult but it has been estimated that 10% decline in the ozone layer would result in 30% increase in rodent ulcers (skin cancer) of the face and up to 50% of some other types of cancer.

Lens cataracts would also increase.

Much of this remains speculative, but there is little evidence of serious attempts to arrest global warming.

If, however, these events do all continue to unfold, medicine will have to adapt to new patterns of disease and illness and address challenges that we may struggle to imagine today.

We can only hope that politicians and others grasp the challenges and recognise them as a principal priority. Perhaps, however, the American President experiencing an epiphany may be too much to hope!

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