MAHA BARAKAT

Assistant Minister for Health and Life Sciences at the Ministry of Foreign Affairs of the UAE

Michel Kazatchkine, Special Advisor to the World Health Organization Regional Office for Europe

I will now turn to Maha Barakat, and coming from the host country of COP 28, she will focus on the intersection between health and climate change.

Maha Barakat

Thank you very much for inviting us to participate again in this very insightful congress, we are very grateful. I will argue that health is actually a critical component of climate change and much of what you have already heard, be it pandemics, effect on water, etc., can be encompassed under the umbrella of climate change. Therefore, many of the global health challenges we have to deal with today can fall under the causation of climate change or become much worse because of climate change.

This slide is really a summary of how climate interacts with health. The climate crisis is a health crisis and that has been stated on a number of occasions by the WHO, and this chart really summarizes the relationship between climate and health. The graphics come directly from the WHO, and you can find them on the WHO website. If I just concentrate on the diagram at the bottom, I will briefly go through all the elements of how climate will affect health, both in terms of inducing illness and causing death. It has been estimated that by the end of the century, climate change will probably be directly taking over nine million lives every year. The effects include:

- Extreme weather events, and we have just seen recently in Spain and Valencia, the devastating effects of that.
- Just having too much heat can cause heat stroke and other issues.
- Respiratory illness and an increasing burden of asthma, lung cancer, chronic obstructive lung disease.
- Waterborne illnesses and we have just heard about cholera and there are others, for instance, polio.
- Zoonoses, diseases that start in animals and jump into human beings. Many epidemics and for instance, the pandemic we have just had was a zoonosis, something that started in an animal and jumped into humans. That relates to Covid-19 but also to

Mpox, swine flu, avian flu and all these influenza viruses that start in animals and jump to humans.

The next diagram is vector-borne diseases, of which two of the most well-known are malaria and dengue. One or all of the waterborne, zoonoses and vector-borne will be the cause of the next pandemic and they certainly contribute significantly to antimicrobial resistance, with the more fevers, the more people are prescribed or self-prescribe antibiotics.

I think these disease-inducing factors that are made much worse or even caused by climate, will cause many of the global health issues, including things like antimicrobial resistance.

There are obvious things like lack of food and water, and non-communicable diseases, which we heard a bit about but will hear more about from the next speaker. Then you should also never forget the impact of climate change on mental health.

For the purposes of my discussion here today I will just focus on two of the elements, vector-borne disease and air quality.

What do we mean by vector-borne disease? Vector-borne disease is really a virus or parasite that sits inside another host, usually a flying host like a mosquito, that then bites and inserts its disease into a human being. The most well-known is the mosquito, which is very good at taking something circulating in its own system and squirting into a human being when it wants to feed. There are different types of mosquitoes, and we all know about the one that causes malaria, and that genus is called Anopheles, but there are others. The Aedes genus causes dengue and then we have the Culex, which can cause West Nile fever. These are responsible for millions of deaths and historically, you will find evidence of malaria from Pharaonic times, so malaria is not a new disease, it has been around for centuries, and climate change is going to make it worse. Over 90% of the malaria burden is found in areas of Africa, and all too often you see tragic scenarios of children with cerebral malaria, which has a very high mortality rate. Last year's *World Malaria Report* estimated that there were 608,000 deaths from malaria, an entirely preventable and treatable disease, mostly children under the age of five and that number will rise to almost 1 million in the next four years. This is a disease that continues to kill children at staggering rates and more children died of this than from Covid, and because they had a febrile illness, they thought it was Covid, and they were sent home when it was actually malaria and should have been treated.

There is a disturbing escalation of the malaria problem in Africa, with a mosquito species, Anopheles Stephensi, that did not use to be found in Africa before 2011, with global warming seems suddenly to have migrated to the African continent. The problem with this species of Anopheles is that it likes to bite during the daytime and seems to be resistant to several important insecticides. This mosquito makes a mockery of the current mainstays of malaria prevention in Africa, the bed nets that people sleep under at night and using well-known insecticides, because it is biting during the day when people are walking around, studying and doing things without protection and it is resistant to many insecticides. This shows that despite all our efforts to try to tackle malaria there are ongoing, new and emerging threats. This is a major threat, and a lot of R&D is going into how to deal with this specific species of Anopheles.

Moving on to dengue, this is spread by another mosquito genus, Aedes, and it has transitioned through the decades, so at the top of the slide it is 1950, then to 2020 and then to 2050. We believe that because of global warming it is slowly encroaching on areas where it was not previously found, and most continents are now affected by dengue. A recent three-month incidence map from the European CDC shows that it is now established in the Americas, North, South and Central. There have been 14 million cases of dengue so far this year and probably many more because it is simply not diagnosed in many parts of the world. You may think that it has not killed many people, it is only 10,000 deaths, but the problem is that we do not have any treatment for it or any vaccines. This is getting worse as the world gets warmer, so watch this space with climate change and vector-borne disease.

Moving on to air pollution, we heard briefly how air pollution is affecting the world. This slide shows two news reports, one from Lahore and the other from New Delhi and a very senior thoracic surgeon from New Delhi publishes widely on this topic and he is basically saying that what he used to see in the 1980s is very different from what he is seeing now. Over 50% of cases of lung cancer in New Delhi are now in non-smokers, which is unheard of, before more than 90% were from smokers and he is seeing it in younger and younger people. You can see that the lung on the right is from a non-smoker in New Delhi and the one on the left is somewhere else in the world.

That brings us to what happened at COP 28 last year. For the first time at any COP there was a dedicated health day on December 3, 2023, which recognized the significance of climate on health. There were three foci during the dedicated health ministerial: public health measures to protect against climate change; health system strengthening to prepare them for ongoing and increasing climate effects; and promoting climate responsible actions with low-carbon energy sources. The WHO has been a champion in this and has listed the different factors in making health systems climate resilient. We all recognize the importance of leadership and governance, which were critical during Covid-19 and the huge differences between the countries that dealt with it successfully and those that did not were very telling. Leadership, finance, workforce and health system strengthening are the key factors. A declaration was agreed and signed by over 150 countries, and we started to work on the draft declaration. I remember that the WHO told us we would be lucky, and it would be great if 50 countries signed up, but we got many more than that and finally 151 countries endorsed the Climate and Health Declaration. The legacy is not this declaration, ultimately it will be how many lives are saved as a consequence of the actions that started at COP 28. It is all about the number of lives and ultimately you can argue, not just in health but in everything else, how many lives will be saved. Everything that has been agreed on at COP 28 and COP 29 and will be agreed on at COP 30, how many lives you will end up saving and the financing is also important.

This ends my intervention, and we wish Brazil all the best for COP 30, and they are already making huge progress on that sector.