

Notes:

- Please add details of the date, time, place and sponsorship of the meeting for which you are using this presentation in the space indicated.
- This is a large set of slides from which the presenter should select the most relevant ones to use in a specific presentation. These slides cover many facets of the problem. Present only those slides that apply most directly to the local situation in the region.
- It is also very useful if you present regional or local examples of climate change-related health threats and solutions, both adaptation and mitigation.





Note:

When selecting the slides to include in your presentation, please choose only those of relevance to the region and/or interests of your audience.

This presentation has three parts. The first part is general and sets the stage by discussing major trends in human activities and their broad impact on the global environment and human health. The second part concentrates climate change as one of the most immanent global public health threats. The last part discusses actions from international to individual level which are needed to protect children's health in a world of ongoing global environmental changes.



We begin with the magnitude of the problem of climate change in order to set the stage for the module.



Often paediatricians and other child health care professionals may think of climate change as a global problem well outside of their control or their need to consider on a day to day basis. By integrating climate change in the new General Programme of Work, WHO Director-General Dr Tedros highlights the need to bring climate change into daily, mainstream thinking for all health professionals.

Note: For further information, see: <u>https://www.who.int/about/what-we-do/thirteenth-general-programme-of-work-2019---2023</u>.



It is now beyond the time for confusion or equivocation. Climate change is a reality. The earth is warmer, the sea level is rising, ice is melting and we have abundant direct evidence of these facts. The records of the past 3 decades prove that the earth is warmer and weather patterns are more extreme and less predictable now than in preindustrial times. This presentation does not detail the science on this fact nor does it detail the many lines of evidence which document it. Those who are interested may find many resources for study including the Intergovernmental Panel on Climate Change (IPCC), the World Meteorological Organization and NASA Global Climate Change: Vital Signs of the Planet among others.

The graphs on this slide show changes in measures of climate change over time. On the top left, change in global surface temperature compared to the average in 1951-1980 is shown from 1880 to 2018. The average surface temperature has increased 0.9°C since the late 19th century with most of the warming in the past 35 years. 18 of the 19 warmest years on record have occurred since 2001, and 2016 was the hottest year measured.

On the right are losses in ice at sea (top) and on land (bottom). Arctic sea ice is measured in September when it reaches its annual minimum, and it is declining at a rate of 12.8% per decade relative to the 1981-2010 average. The top right graph shows average September Arctic sea ice from 1979 to 2017. In Greenland, ice mass has been decreasing since 2002, with most loss occurring since 2009. The average rate of change is now 286 (±21) gigatonnes per year. The bottom right graph shows the size of Greenland's ice mass from 2002 to 2017.

With melting ice and warming seawater come rising sea levels. The graph on the bottom left charts sea level change from 1993 to 2018, with a current average increase of 3.3 mm per year.

References:

- JPL/NASA (2019). Global climate change: vital signs of the planet. Pasadena, CA: Jet Propulsion Laboratory/ National Aeronautics and Space Administration. (<u>https://climate.nasa.gov/</u>, accessed 3 April 2019).
- IPCC (2019). The Intergovernmental Panel on Climate Change. Geneva: Intergovernmental Panel on Climate Change. (<u>https://www.ipcc.ch/</u>, accessed 28 January 2019).

Figures:

Courtesy NASA/JPL-Caltech



Furthermore, human influence on the climate is virtually certain. The strong consensus of global experts on climate and all earth sciences agree that humans are and have been for decades the major driver of the warming, sea level rise, ocean acidification and changed weather patterns of today. Burning of fossil fuels and deforestation along with other greenhouse gas inputs associated with agriculture and industry have rapidly changed the atmosphere, increased the "thermal blanket" of the earth and warmed the air and the oceans. This familiar graph of the concentration of CO₂ in the atmosphere over hundreds of thousands of years dramatically demonstrates how extraordinary are the times in which we live now. CO₂, which is the main anthropogenic (human-caused) greenhouse gas, has a long residence time in the atmosphere and is anticipated to remain in the atmosphere for at least 500-1000 years. The latest measurement as of February 2019 showed CO₂ at 411 ppm (parts per million) compared to 280 ppm in preindustrial times. This new reality has health consequences for humans and most other species on the planet.

References:

• JPL/NASA (2019). Global climate change: vital signs of the planet. Pasadena, CA: Jet Propulsion Laboratory / National Aeronautics and Space Administration. (<u>https://climate.nasa.gov/</u>, accessed 3 April 2019).

Figure:

• Vostok ice core data/J.R. Petit et al.; NOAA Mauna Loa CO2 record



Now that the stage is set, we will discuss the effects of climate change on children's health.





https://www.yunbaogao.cn/report/index/report?reportId=5_25291