Appendix
Case study: climate-driven health hazards – natural disasters

Natural Disasters

Climate change will continually increase natural disasters, particularly hurricanes and wildfires (Intergovernmental Panel on Climate Change, 2021; Shukla et al., 2019). Major disasters cause acute health impacts, notably from injury during flood-events (Blake & Zelinsky, 2017), and direct damage from smoke and particulate matter inhalation in the case of wildfires (Bowman & Johnston, 2005). Natural disasters also amplify infectious disease risk while simultaneously disrupting access to health services (Sharma et al., 2008; Willison & Holmes, 2020). When disasters force people from their homes, they often gather in congregate facilities. Group housing presents high-risks for contagious diseases, such as influenza or noroviruses (Loebach & Korinek, 2019). Hurricanes and flood-related disasters provide ideal breeding situations for arthropod-disease-vectors, causing outbreaks in the weeks and months following the disaster (Beatty et al., 2007). Finally, disaster events can cause or exacerbate chronic health conditions. Notably, particulate matter from fires can increase chronic respiratory and cardiovascular disease (Liu et al., 2015). Hurricanes and flood-events account for direct, indirect, acute and chronic adverse health effects primarily related to: behavioural health challenges, socioeconomic loss, infrastructure damage (mould, housing loss), and contamination from pollutants during storm surges (Waddell et al., 2021).

Natural disasters: the role of health systems and evidence-based actions

Health systems can act as policy implementors by investing in green buildings and greening open spaces in health care infrastructure, mitigating the acute impacts of climate-driven natural disasters. Urban greening, particularly with broadleaf trees, can reduce particulate-matter-density

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in the air (Deng et al., 2019; Lei et al., 2021) exacerbated during climate-driven disasters including heat waves and wildfires. Urban greening also increases surface permeability, slowing down runoff during flood-related disasters and reducing risk of contamination with sewage or other dangerous substances (He et al., 2019; Li et al., 2018).

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