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Health must be protected and promoted by tackling the rising threats of climate change to mitigate the increase in global disease burden and to sustain economic benefits. The health community has 3 primary challenges: defending health from climate impacts, creating climate-resilient health systems for the 21st century, and leveraging the health benefits of a low-carbon society. One proposed solution is to use solar power to provide electricity to health-care facilities in remote areas and to stress the cost-effectiveness, reliability and benefits for the climate of such a measure.

pressures from climate-induced migration and increased agricultural use, resulting in natural habitat destruction.[5]

The exact impact of climate change on transmission of NTDs is uncertain, because of the inherent unpredictability of disease dynamics and, in some systems, limited understanding of climate–pathogen–disease relations. Changing environmental conditions can shift disease transmission, making previously suitable areas more favourable and others less so. The challenges of climate change, especially to NTDs, are multifaceted; uncertainty in modelling future climate impacts, the complexity of anthropogenic influences and the lack of localizing global climate change models require further study.

Global impact of climate change on vector-borne diseases

A high-level review of global trends in and drivers of the emergence of vector-borne disease calls attention to 3 related concerns that are strongly influenced by climate change: environmental change, global migration and urbanization. Effective disease prevention and control will probably be complicated by increasing environmental and social change, concentrated in urban and peri-urban centres in sub-Saharan Africa, South Asia and Latin America, where the most severe effects of climate change on human population centres will probably be experienced. Additional technical challenges for preventing and controlling vector-borne infections include the possibility that the available

thrive. A model developed by Messina et al. predicts that 2.25 billion more people will be at risk of dengue in 2080 than in 2015, the key drivers being urbanization,

The climate crisis is also increasing the number of people exposed to polluted air, food and water insecurity, disrupted access to health care, increased living costs, forced migration, loss of livelihoods, community breakdown, violence, sexual abuse, loss of culture and access to biodiversity, and changes to environments. These disruptions to the conditions that support good mental health can worsen mental health outcomes, particularly for people who are already vulnerable to mental health conditions or unjust societal outcomes. Communities and individuals that are particularly vulnerable include women, children, youth, Indigenous communities, agricultural workers, emergency responders and climate and environmental scientists. The climate crisis impacts countries, communities and generations that have the least responsibility for global carbon emissions.[14]

The emotional responses to the climate crisis, including anger and hope, can motivate climate action.[15] Acting with others can itself protect mental health. Climate action multiplies opportunities for mental health, with clear synergy between actions that mitigate or help to adapt to the climate crisis and those that strengthen the determinants of good mental health and well-being. Actionêinêsectorsêsuchêpublicêtransport,êenergyľefþcientê buildings, improved access to green spaces and tree cover in cities, participatory governance, connected communities, strengthened community health care and reducedê inequalitiesê allê haveê provenê coĽbeneþtsê forê mental health.[16, 17]

To understand and respond to the escalating mental health challenges of the climate crisis, connections should be strengthened among all relevant disciplines, sectors and countries for a complete response to these interconnected global challenges. Investment should be made in initiatives to build capacity and strengthen networks that bridge siloed disciplines and sectors to share lessons and relevant resources. There is still limited awareness of the mental health impacts of the climateê crisis,ê andê aê powerfulê þrstê investmentê wouldê include support for educational and awareness-raising initiatives that integrate climate and mental health considerations.

La crise climatique augmente également le nombre de personnes exposées à l'air pollué, à l'insécurité alimentaire et hydrique, à la perturbation de l'accès aux soins de santé, à l'augmentation du coût de la vie, aux migrations forcées, à la perte des moyens de subsistance, à l'éclatement des communautés, à la violence, aux abus sexuels, à la perte de la culture et de l'accès à la biodiversité, et qui assistent à des changements environnementaux. Ces perturbations des conditions qui favorisent une bonne santé mentale peuvent détériorer cette dernière, en particulier chez les personnes déjà vulnérables aux problèmes de santé mentale ou à des situations sociétales injustes. Les communautés et les personnes particulièrement vulnérables sont les femmes, les enfants et les jeunes, les communautés autochtones, les travailleurs agricoles, les intervenants d'urgence et les scientiþquesê spßcialistesê duê climatê etê deê lôenvironnement.ê Laê criseê climatique touche les pays, les communautés et les générations les moins responsables des émissions mondiales de carbone.[14]

Les réactions émotionnelles à la crise climatique, y compris la colère et l'espoir, peuvent motiver l'action en faveur du climat.[15] Agir avec d'autres personnes peut en soi protéger la santé mentale. L'action climatique est un multiplicateur d'opportuni-

Developing an agenda for climate change and

for transmission. Climate-induced human migration, such as of cattle herders in search of pasture (thereby provokingê conÿict),ê couldê introduceê theê diseaseê toê previously uninfected areas, affecting already strained, fragile health systems, which may undermine the surveillance and interventions essential for eradication.

Advances in geospatial modelling, such as ecological niche modelling, are promising for synthe3o (n)23 (th8 Tmþ8 Tm[14 l)-6C3(l.anha -9.9 (lima)18 (,uch as e)-8 (c)10 (olo)-6 (g)

be affected by climate change. Enteroviruses, including polioviruses, are seasonal pathogens, the seasonality of transmission becoming progressively more pronounced with distance from the equator. Climate is likely to drive seasonal patterns of enterovirus cases, dew-point temperature alone explaining approximately 30% of the variation in transmission intensity.[20] Increasing global warming with changing precipitation patterns and humidity could impact poliovirus transmission, as the duration of the "high transmission season" may be prolonged, extending the period of intense transmission to which vulnerable populations are exposed.

An increase in the duration and geographical scope of polio and non-polio enteroviruses due to global warming would increase the risk of emergence of vaccine-derived polioviruses after administration of Sabin oral polio vaccine or even the novel oral polio vaccine type 2 in which the attenuated virus is much more genetically stable and far less prone to evolve into VDPV than into Sabin type 2 strain. The emergence of vaccine-derived polioviruses that regain neurovirulence and can circulate is often due to genetic recombination between attenuated oral polio vaccine strains and species C enteroviruses. More prolonged, wider, intense circulation of species C enteroviruses could provide more opportunities and increase the frequency of such recombination events, leading to a higher incidence of emergence of cVDPV after oral polio vaccine administration in settings of low population immunity.[20, 21]

Indirect effects of climate change on polio eradication have already been observed; others are likely to become more apparent with time. Climate change is causing displacement of highly vulnerable populations due to drought and food insecurity, making it more difficult for vaccination and surveillance programmes to reach them. Acute climate emergencies destroy health services and disrupt immunization and surveillance activities. Environmental surveillance is increasingly important for detecting important pathogens and is an essential part of poliovirus surveillance, as it supplements surveillance of acute flaccid paralysis to detect poliovirus. More studies should be conducted on the impact of heavy rainfall and flooding on sewage and surface water sampling sites and on the hydrobiology of poliovirus in different settings. How dilution, increased flow and other changes in the quality of samples due to heavy rains and floods affect the sensitivity of poliovirus detection should also be studied.

semblablement encore plusieurs années; par conséquent, elle pourrait subir les effets du changement climatique. Les entérovirus, y compris les poliovirus, sont des agents pathogènes saisonniers; la saisonnalité de leur transmission devient progressivement plus prononcée en fonction de la distance par rapport à l'équateur. Le climat est susceptible d'influer sur les schémas saisonniers des cas d'infection à entérovirus, la température du point de rosée expliquant à elle seule environ 30% de la variation de l'intensité de la transmission.[20] L'augmentation du réchauffement climatique, qui s'accompagne d'une modification des régimes de précipitations et de l'humidité, peut avoir des répercussions sur la transmission du poliovirus, car la durée de la saison de forte transmission peut être prolongée, allongeant ainsi la période de transmission intense à laquelle les populations vulnérables sont exposées.

Si le réchauffement climatique augmente effectivement la durée de transmission et l'étendue géographique des entérovirus poliomyélitiques et non poliomyélitiques, il pourrait alors accroître le risque d'émergence de poliovirus dérivés d'une souche vaccinale à la suite de l'adminsistration du vaccin antipoliomyélitique oral Sabin ou même du nouveau vaccin antipoliomyélitique oral de type 2, dans lequel le virus atténué est nettement plus stable sur le plan génétique et beaucoup moins susceptible de devenir PVDV par rapport à la souche Sabin de type 2. L'émergence de poliovirus dérivés d'une souche vaccinale qui retrouvent leur neurovirulence et leur capacité à circuler est souvent liée à des événements de recombinaison génétique entre les souches atténuées du vaccin antipoliomyélitique oral et les entérovirus de l'espèce C. Une circulation plus longue, plus large et plus intense des entérovirus de l'espèce C pourrait multiplier les occasions de recombinaisons et leur fréquence, ce qui entraînerait une incidence plus élevée de l'émergence de PVDV consécutive à l'administration du vaccin antipoliomyélitique oral dans des contextes où l'immunité de la population est faible.[20, 21]

Des effets indirects du changement climatique (n)5.9ss5ouiité de uiitce (n)

Impact of climate change on trachoma

Ocular infection by *Chlamydia trachomatis* causes trachoma, a disease of the poor.[22] Trachoma is found predominantly in the global south, most endemic countries being in sub-Saharan Africa.[23] It is transmitted directly by person-to-person contact and by contact withê fomitesê andê eyeĽseekingê ÿies.[8] Research on the relation between climate change and trachoma is sparse, andê trachomaĽspeciþcê studiesê wereê notê identiþedê inê

ment of a task team within the international coalition for trachoma control.[32–34]

Impact of climate change on river blindness and lymphatic filariasis

Conclusions and recommendations

1. The critical intersection of climate change and health is a multifaceted, multi-sectoral issue. Addressing the complex climate crisis will require breaking down silos in a holistic, evidence-based, interdisciplinary approach. Many sectors should be engaged (e.g. human health, animal health, agriculture, politicians and policy-makers), share information and consider the impact on physical and mental health. A coordinated, multidisciplinary approach between the animal and health sectors will reduce health risks. A comprehensive, collaborative, multisectoral strategy will also help to address the complex interactions between climate change and health.

2. Additional research is required on climate change and health. Clear, concise articulation of the issues could shift the focus from whether climate change is an issue to understanding how and to what extent it will affect population health. Topics recommended for further research include the use of predictive modelling to understand the factors, beyondê vectors,ê thatê inÿuenceê changesê inê theê transmission of infection and disease, generation tTs a,2del0N dh 5nas0 ytaeai31..2 1v6 Tde(95oa7 (Cad2Bh23 2 Tth 5)(08815 57195oa)0)Tj25s 3195oa756s30125B<

WHO web sites on infectious diseases – Sites internet de l'OMS sur les maladies infectieuses

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COVID-19	https://www.who.int/health-topics/coronavirus#tab=tab_1	Ma ad e c□□ a 2019 (COVID-19)
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