SOSCHI project on the development of indicators of climate-related health impacts

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Outline

- Project motivation
- Overview of SOCHI project
- Progress of the SOSCHI project
- Data and methodological challenges
- Proposed health-related indicators
- Mentimeter Questions (Votes)
- Platform demonstration (Group work)
- Feedback (Group work)

Project motivation

Support global providers of climate change statistics

Enable comparable and reliable evidence reporting health impacts

Support global action and policy change

What is this project about?

What problem are we trying to solve?

- Despite the extensive science on climate change, there is a shortage of measures and tools to monitor impact on health of climate change

How are we doing it?

- Publish an agreed statistical framework of standard indicators
- Develop an online platform and open-source software tools to support global use of the indicators

Overview

Define a statistical **framework and unified methods** for official reporting of climate change impacts on health**,** at national and local levels

Develop a **global reporting and knowledge-sharing platform** with an open-source toolset in line with the agreed framework

Discovery Phase 2022/23

- UK Climate and Health team launched
- Project aims developed
- Partner selection and onboarding

Alpha Phase 2023/24

- Topic Expert Groups (TEGs) established
- Development of Alpha draft
- Internal testing with project partners

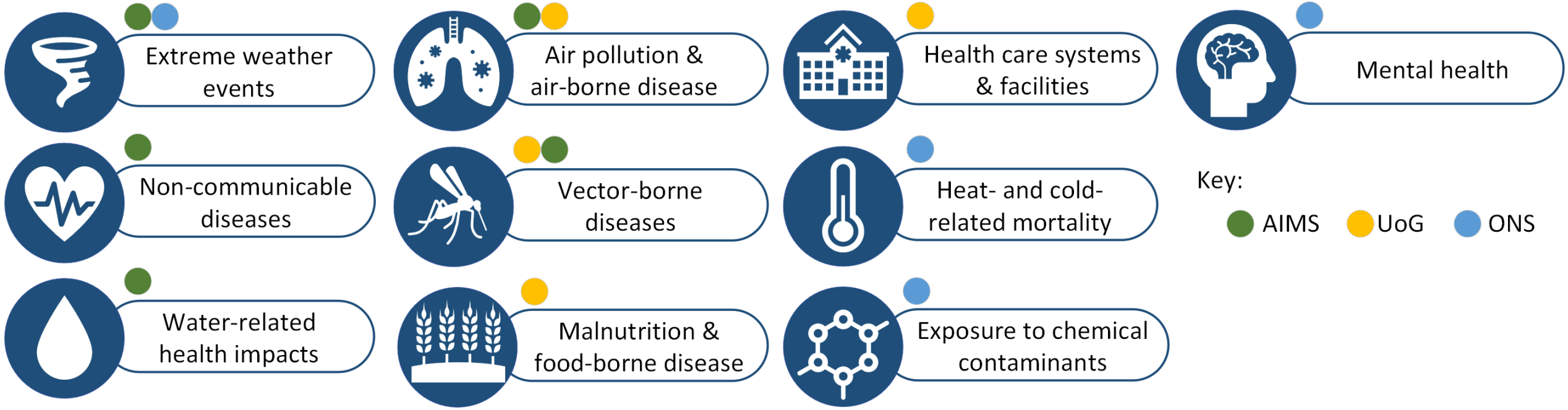
Beta Phase 2024/25

- Refine framework
- Final development of online platform
- Global pilots for National Statistical Offices to test

Launch year 2025/26

- Final drafts signed off
- Framework endorsed or supported by key stakeholders
- Launch platform and publish framework

Scope of indicators



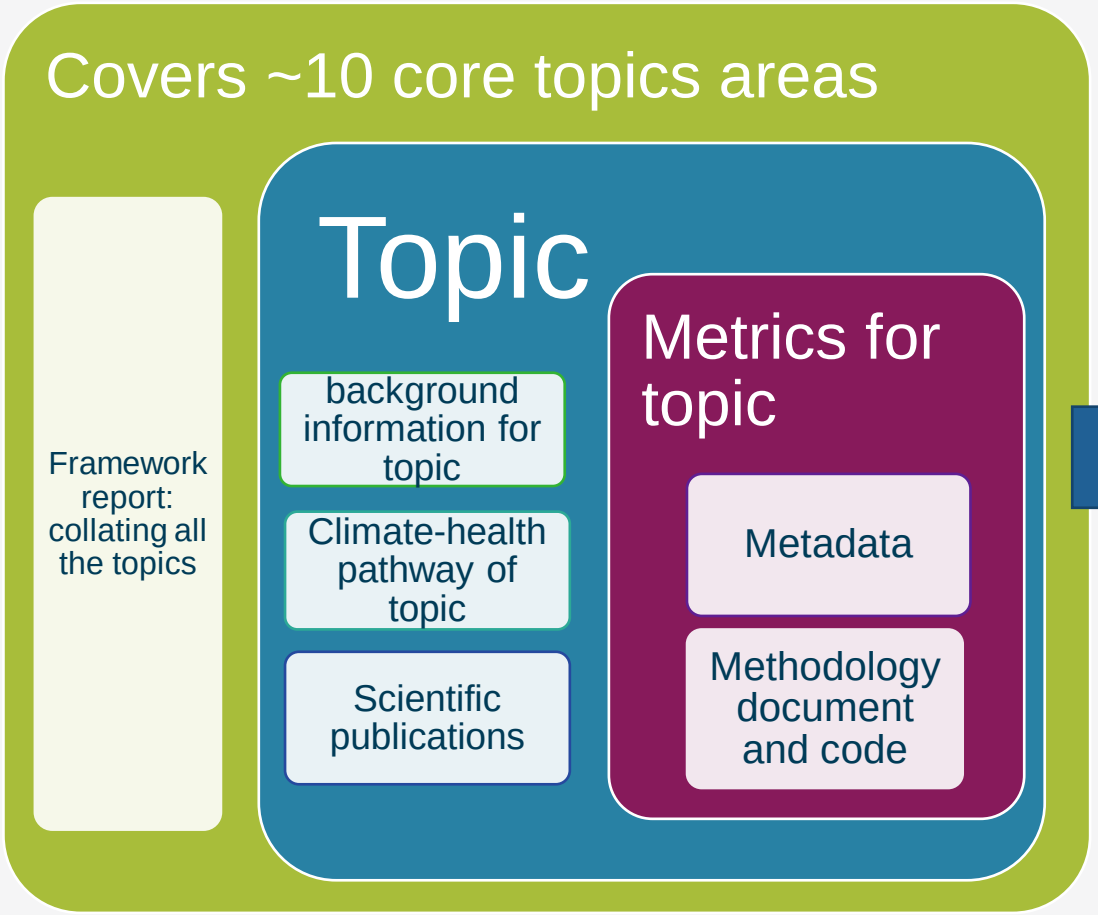
UN Global Set of indicators on climate change

CONNECTING TO

SDG targets and indicators

Climate Impact	Indicators
Air pollution and airborne disease	Severe acute respiratory illness mortality and hospital admissions attributable to non-optimal air quality Cardiovascular mortality and hospital admissions attributable to non-optimal air quality Number of cerebrospinal meningitis (CSM) cases
Healthcare systems and facilities	Impact of climate-related events on access to and operation of health facilities (and potentially vulnerability) General service readiness score for health facilities (essential services, medical equipment, medicines, and trained personnel)
Heat and cold mortality and morbidity	Temperature-related mortality and hospital admissions
Injury and mortality from extreme weather events - Flooding	Mortality rate attributed to floods (flash and riverine) Number of hospitalized injuries attributed to floods Mortality rate attributed to landslides Number of hospitalized injuries attributed to landslides
Injury and mortality from extreme weather-Wildfires	Number of respiratory mortality and hospitalisations related to wildfire smoke (fine particulate matter, $PM_{2.5}$)
Malnutrition and food-borne diseases	Health outcomes associated with temperature and rainfall: Stunting, wasting and underweight
Mental and psychosocial health	Suicides and hospital admissions related to temperature and extreme weather events (wildfires, storms, drought and floods)
Vector-borne diseases - Malaria	Malaria cases/mortality attributable to extreme temperature, extreme cumulative precipitation, sunshine duration, extreme relative humidity, wind speed, and flood exposure
Water-borne diseases and other water-related health impacts	Diarrheal morbidity and mortality attributable to extreme precipitation/rainfall Drought-associated diarrhea mortality and hospital admission estimated attribution number and fraction Flood-associated diarrhea mortality and hospital admission estimated attribution number and fraction Water Sanitation and Hygiene (WASH) burden diseases attributable to drought/flood exposure

Statistical Framework



Indicator ID number	**Category**		**Publication date**	**Last updated**
	Indicator name			
Area			**Sub area (topic)**	**Tier**
	Definition Indicator definition Concepts			
Unit of measure		**Disaggregation**		**Temporal breakdown**
	Link to other indicators			
	Link to other agreements/frameworks **SDGs**: **Paris Agreement**: **Sendai Framework**: **UN Global Set**: **Lancet Countdown:** **FDES 2013:**			
	Relevance & rationale			
	Methodology Where there are data limitations Code library			
	Interpretation & communication			
	Data Sources Data sources			
	Limitations			
	Updates & future developments			

Data and methodological challenges

- Data availability and quality (e.g. completeness, timeliness)
- Granularity (e.g. daily deaths, local weather measurement)
- Data disaggregation (e.g. gender, age, urban-rural)
- Methods generalizability
- Multiple and complex confounding factors
- Cross-cutting discipline

Indicator proposals as of October 2024

Indicator topic	Development status
Heat and cold Mortality attributable to excess heat and cold	Indicator methods have been agreed and documented (alpha version). Program code is complete. Online calculator has been developed and is available for user testing.
Health systems and facilities Impact of extreme weather on functioning of and access to health facilities	Alpha version of indicators and methods still in development as several methodological approaches are being explored. Completion expected by 31 January 2025.
Extreme weather - flooding Mortality and morbidity attributable to flash, riverine and/or landslide events	Alpha version of indicators and methods still in development as several methodological approaches are being explored. Completion expected by 31 January 2025.
Extreme weather - wildfires Mortality attributable to extreme weather (wildfire smoke ($PM_{2.5}$)	Indicator methods have been agreed and documented (alpha version). Program code is complete. Online calculator is in development but not yet ready for release.
Malnutrition and food-borne diseases Mortality and morbidity attributed to malnutrition or food-borne diseases	Alpha version of topic summary is complete. Methods and program code are still in development. Completion expected by late December 2024.
Mental and psychosocial health Mortality attributable to mental health problems (suicide)	Indicator methods have been agreed and documented (alpha version). Program code is in development. Online calculator development is awaiting completion of program code.
Effects of air pollution (respiratory illnesses) Mortality and morbidity attributable to air pollution	Alpha version of indicators and methods still in development as several methodological approaches are being explored. Completion expected by 31 January 2025.
Vector-borne diseases (malaria) Mortality attributable to climate-related change in malaria incidence	Alpha version of topic summary is complete. Methods and program code are still in development. Completion expected by late December 2024.
Air-borne diseases (cerebrospinal meningitis) Mortality attributable to temperature in cerebrospinal meningitis	Alpha version of topic summary is complete. Methods and program code are still in development. Completion expected by late December 2024.
Water-borne diseases and other water-related health impacts Mortality and morbidity attributable to climate-related changes in water-borne diseases	Alpha version of indicators and methods still in development as several methodological approaches are being explored. Completion expected by 31 January 2025.

Proposed health-related indicators for inclusion in the revision of the Global Set

Climate Hazards and Impact	ONS Proposed Indicator	Global Set indicator
Heat and cold related deaths	• Number and rate of deaths per 100,000 population attributable to excess heat • Number and rate of deaths per 100,000 population attributable to excess cold	45. Incidence of heat- and cold-related illnesses or excess mortality • Excess mortality related to heat • Excess mortality related to cold
Mortality and injury from extreme weather (wildfire smoke $PM_{2.5}$)	• Number and rate of deaths per 100,000 population attributable to wildfire smoke ($PM_{2.5}$)	46. Climate induced air pollution • Concentration level of particulate matter (PM2.5)
Mental and psychosocial health	• Number and rate of deaths per 100,000 population attributable to suicide associated with excess heat	To be decided

Mentimeter Questions (Heat)

https://www.mentimeter.com

Code to be use 33807333

1. Do you agree that the indicator 'number and rate of deaths per 100,000 population attributable to excess heat' should be in the Global Set (indicator 45)?
2. Is your country interested to take part in piloting/early implementation of this (excess heat) indicator in 2025?
3. Is your country likely to monitor this indicator (excess heat) in the longer term?

Mentimeter Questions (Cold)

https://www.mentimeter.com

Code to be use 33807333

1. Do you agree that the indicator 'number and rate of deaths per 100,000 population attributable to excess cold should be in the Global Set (indicator 45)?
2. Is your country likely to take part in piloting/early implementation of this indicator in 2025?
3. Is your country likely to monitor this indicator in the longer term?

Mentimeter Questions (wildfire smoke)

https://www.mentimeter.com

Code to be use 33807333

1. Do you agree that the indicator 'number and rate of deaths per 100,000 population attributable to wildfire smoke (PM2.5)' should be in the Global Set (indicator 46)?
2. Is your country likely to take part in piloting/early implementation of this indicator in 2025?
3. Is your country likely to monitor this indicator in the longer term?

Mentimeter Questions (suicide/mental health)

https://www.mentimeter.com

Code to be use 33807333

1. Do you agree that the indicator 'number and rate of deaths per 100,000 population attributable suicide associated with excess heat' should be in the Global Set (indicator TBA)?
2. Is your country likely to take part in piloting/early implementation of this indicator?
3. Is your country likely to monitor this indicator in the longer term?

Global Data Platform

Enables sharing of the framework and Analysis Tool

Access to statistical framework and open-source tool
- Documentation on indicators will be online to view or download

UN Global Platform

ONS

DataKind

Calculate and visualise data for climate-health indicators

- Indicators calculated by R package API via platform website - no coding experience required
- Code will be available as downloadable open-source packages to use offline and incorporate into other projects or workflows
- Tool to automate pairing of health and climate data
- Upload data and analyze online or offline (access to GitHub Repo)

Upload and **explore** indicator data

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wellcome

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