

Lancet Countdown 2018 Report: Briefing for EU Policymakers

November 2018



Introduction

The effectiveness of our response to climate change between 2018 and 2030 will define health and wellness globally for generations to come.

This briefing, launched in parallel with the 2018 *Lancet Countdown on Health and Climate Change* report, focuses on the links between health and climate change, recognized to be the greatest health threat of the 21st century,[1] and their implications for the European Union's political commitments. It has been developed in conjunction with the Standing Committee of European Doctors (CPME) and draws on data provided by the *Lancet Countdown* to make evidence-informed recommendations for policymakers with the goal of taking advantage of the tremendous health opportunities of an effective response to climate change.[2]

Acknowledgements

The concept of this brief was developed by the Lancet Countdown on Health and Climate Change. This brief was written by Dr H el ene Rossinot and was reviewed by Dr Martin Balzan.

Edits and review on behalf of the *Lancet Countdown* were provided by Dr Courtney Howard and Dr Nick Watts.

Strategic Partners

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About the Lancet Countdown

The “*Lancet Countdown: Tracking Progress on Health and Climate Change*” is a global, interdisciplinary research collaboration between 27 academic institutions and inter-governmental organizations. It monitors progress on the relationships between health and climate, and their implications for national governments, reporting annually. The *Lancet Countdown* follows in the footsteps of two Lancet Commissions on climate change. The first surveyed the damage climate disruption is having on health, determining that “climate change is the biggest global health threat of the 21st century;”[3] whilst the second concluded that responding to climate change could represent “the greatest global health opportunity of the 21st century.”[2] The 2018 report presents data on 41 indicators selected following a consultation process in 2017. These span 5 domains, from impacts and adaptation to mitigation, and the economics and politics of a healthy response to climate change.[4] Key data for the 2018 Briefing for EU Policymakers has been provided by the authors of the *Lancet Countdown*.

Standing Committee of European Doctors

The Standing Committee of European Doctors (CPME) represents national medical associations across Europe. CPME is committed to contributing the medical profession’s point of view to EU institutions and European policy-making through pro-active cooperation on a wide range of health and healthcare related issues.

CPME notes the increasing evidence on the effects of climate change and air pollution on human health. The changing pattern of both communicable and non-communicable diseases related to climate change may result in significant public health challenges in the future. The CPME position paper on Global Warming and Health provides a reminder that medical practitioners have been aware of the adverse effect of pollution of the environment on human health since the beginning of organized society and certainly since the Hippocratic treatise “Airs, Waters and Places”. [5]

CPME therefore fully supports and endorses the recommendations of this policy brief, and strongly encourages its national member associations, and individual physicians to continue to bring home this message for action to their national authorities in the best interest of the health and quality of life of their patients.

Take-Home Messages and Recommendations

Recommendation 1

HEATWAVES: Threats to health from increasing heat are becoming more frequent and more dangerous.

Ensure each Member State develops a National Action Plan for Climate, Health, and Wellbeing to address climate-related health impacts including heat illness.

Recommendation 2

PROFESSIONAL EDUCATION: A widespread understanding of climate change as an increasing health threat is vital to delivering an accelerated response.

Encourage Member States to ensure rapid inclusion of climate change and health in the curriculum of all medical and health sciences faculties in the EU.

Recommendation 3

INFECTIOUS DISEASE: The Baltic Sea region has seen an increase in the transmissibility of *Vibrio* infection.

Make *Vibrio* cases reportable diseases in every country around the Baltic sea to facilitate close epidemiological surveillance and provide early warning of possible outbreaks, and develop a dedicated pan-European *Vibrio* network.

Recommendation 4

ELECTRICITY: Coal power is responsible for a disproportionate share of air pollution-related deaths and greenhouse gases and must be phased out as soon as possible.

Maintain the EU's financial support for renewable energy schemes across its membership, and provide additional support in accelerating coal phase-out for a number of countries, including Poland, Bulgaria, Czech Republic and Romania.

Recommendation 5

Encourage Member States to commit to phasing out existing unabated coal power generation in their jurisdictions, and to a moratorium on new traditional coal power stations without operational carbon capture and storage capacity within their jurisdictions.

Recommendation 6

AIR POLLUTION: Air pollution from all sources should be reduced to the lowest possible levels so as to minimize its effects on human health. Ensure all European Union Member States meet EU commitments with respect to air quality.

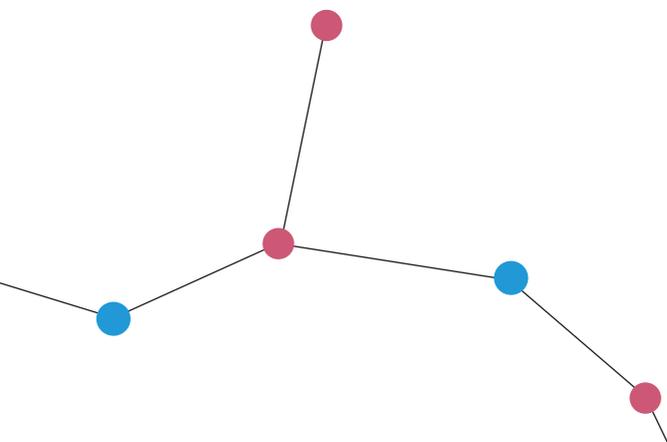
Recommendation 7

COMMUNICATIONS: Media coverage of climate change and health is increasing, but higher levels would be helpful in terms of framing climate change as a public health issue.

Ensure consistent, pro-active external communications by health bodies pointing out the links between climate change and health impacts in real time as events which have been shown to be increasing due to climate change occur.

Key Messages from the 2018 International Lancet Countdown

- Present day changes in labor capacity, vector-borne disease, and food security provide early warning of compounded and overwhelming impacts expected if temperature continues to rise. Trends in climate change impacts, exposures, and vulnerabilities demonstrate an unacceptably high level of risk for the current and future health of populations across the world.
- A lack of progress in reducing emissions and building adaptive capacity threatens both human lives and the viability of the national health systems they depend on, with the potential to disrupt core public health infrastructure and overwhelm health services.
- Despite these delays, trends in a number of sectors are breathing life in to the beginning of a low-carbon transition, and it is clear that the nature and scale of the response to climate change will be the determining factor in shaping the health of nations for centuries to come.
- Ensuring a widespread understanding of climate change as a central public health issue will be vital in delivering an accelerated response, with the health profession beginning to rise to this challenge.[4]



Context: Climate Change and Health in the European Union

The European Union has long been committed to international efforts to tackle climate change. The European Commission has undertaken many climate-related initiatives since 1991, when it issued the first Community strategy to limit carbon dioxide and improve energy efficiency. [6]

The EU has set itself targets for reducing its greenhouse gas emissions progressively up to 2050 through the “2020 climate and energy package,” [7] “2030 climate and energy framework” and “2050 low-carbon roadmap.” [8]

The 2017 European Commission report “*Two years after Paris – Progress towards meeting the EU’s climate commitments*,” states that in 2016, EU greenhouse gas emissions were already 23% below the 1990 level based on preliminary 2016 data, excluding land use, land use change and forestry (LULUCF), and including international aviation. [9] According to the most recent Member States’ projections based on existing measures, the 20% target for 2020 will be met.

This briefing focuses on six indicators from the 2018 *Lancet Countdown* report, which are particularly relevant to the EU:

- Vulnerability to the heat-related risks of climate-change
- Exposure to heatwaves in the EU
- Climate-sensitive infectious diseases (focus on *Vibrio* in the Baltic sea)
- Coal phase-out in the EU
- Exposure to air pollution in European cities
- Media coverage of climate change and health

Selected Lancet Countdown Indicators in the EU Context

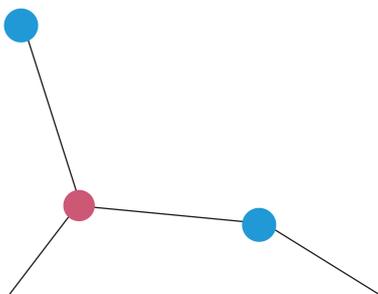
Heat-related Risks of Climate Change in the EU

Indicator 1.1: Vulnerability to the heat-related risks of climate change

Headline finding: Rising ambient temperatures place vulnerable populations at increased risk across all WHO regions. The WHO European region, which includes North Africa, is one of the worst off, with 42% of its population over 65 years of age vulnerable to heat exposure.

The summer of 2018 was very hot in Europe. A persistent high-pressure anomaly over Scandinavia caused high temperatures and drought lasting several months,[10] leading to difficulties for livestock and glacier melt.[11] Ireland and England experienced uncomfortably hot conditions, and Portugal saw record highs.[11] Temperatures were most extreme in the northernmost latitudes, where the climate is warming faster than the global average.[11] Health impacts of heat range from heat stress and heat stroke, to heart failure exacerbations, to acute kidney injury due to dehydration.[12] Vulnerable people such as the elderly, infants, and people with pre-existing cardiovascular and renal disease are most susceptible to heat-related health impacts.[12]

According to the 2018 *Lancet Countdown*, the proportion of populations vulnerable to heat exposure is rising in all regions of the world.[4] The World Health Organization European Region, which includes north Africa, demonstrates markedly higher vulnerability than the rest of Africa and South East Asia, which is most likely the result of a more elderly population living in urban areas.[13] Whilst the numbers of total deaths is strongly related to population size, the change in death rates can be much greater in regions where conditions are conducive to greater warming, with the greatest impact expected in central southern Europe.[14] It is estimated that mortality increases in Member States will be 1–4% for each one-degree rise in temperature, meaning that heat-related mortality could rise by 30 000 deaths per year by the 2030s, and by 50 000 to 110 000 deaths per year by the 2080s.[15]



Indicator 1.3: Health Effects of Heatwaves in the European Union

Headline finding: In 2017, 157 million heatwave exposure events occurred globally, representing an increase of 18 million additional exposure events compared with 2016. (Lancet Countdown)

In 2017, 157 million heatwave exposure events occurred in the world, 18 million more than did in 2016, with one 'exposure event' representing one heatwave, experienced by one person.[4] These pose both direct and indirect health risks to exposed populations: food security, for instance, can be impacted by crop failure and heat-related illness can occur in livestock. In Europe, in addition to 2018's hot summer, regular peaks of exposure to heatwaves have been observed over the past 16 years, including a large peak in 2015.[4]

Lives can be saved by having national plans which coordinate a pro-active public health response to heat.[16] First, a dedicated epidemiologic surveillance system is necessary to gather data on heat-related illness and death.[17] Other key elements include the ability to forecast heat events and issue alerts, as well as well-integrated networks of public health, emergency management officials and community-members to ensure that vulnerable people such as the elderly have adequate access to water and cool-air shelters during heat events.[16] Longer term strategies include urban planning with increased green spaces to decrease the urban heat island effect, and buildings designed with natural ventilation and airflow in mind.[16]

To equip health professionals with the skills required to generate the widespread understanding of climate change as a public health issue that is vital to the development of an accelerated response to the climate crisis, as well as to ensure that they are ready to manage the clinical and health-systems response to events such as heat emergencies, it is important that climate change and health be included in the curricula of medical schools and health sciences faculties. The International Federation of Medical Students' Associations has identified this as a priority, and has set the goal of having it gain a foothold in medical curricula worldwide by 2020, with fuller integration by 2025.[18]

Recommendation 1

Ensure each Member State develops a National Action Plan for Climate, Health, and Wellbeing to address climate-related health impacts including heat illness.

Recommendation 2

Encourage Member States to ensure rapid inclusion of climate change and health in the curriculum of all medical and health sciences faculties in the EU.

Outbreaks of a Climate-Sensitive Infectious Disease: the spread of *Vibrio* species in the Baltic (Indicator 1.8)

Headline Finding: The percentage of coastal area suitable for *Vibrio* infections in the 2010s has increased in the Baltic Sea region by 24% as compared to a 1980s baseline. Similarly, the number of days per year that are suitable for infections has almost doubled, extending the highest risk season by around 5 weeks (Figure 3).

Understanding how climate change is altering the environmental suitability for disease vectors, pathogen replication and transmission is vital to understanding the consequences for human exposure to vector-borne disease.

Europe is particularly impacted by the development of water-borne climate change related infectious diseases. As the International *Lancet Countdown* report states, "in regions with suitable salinity conditions, a consistent association between sea surface temperature (SST) anomalies and cases of pathogenic *Vibrio* infections has been reported." [4] This indicator tracks the environmental suitability of coastal regions for pathogenic *Vibrio* species which can be transmitted in brackish marine waters, including *V. parahaemolyticus*, *V. vulnificus* and non-toxicogenic *V. cholerae*. These cause vibrioses, illnesses including gastroenteritis, wound infections, and septicemia. According to Countdown data, a clear trend of rising suitability for *Vibrio* infections is observable globally.

The percentage of coastal area suitable for *Vibrio* infections increased in the Baltic Sea region by 24% in the 2010s compared to a 1980s baseline, with a near-doubling in the number of suitable days per year (Figure 1). The 2050 projections show very high risks of infection all around the Baltic sea region. [19]



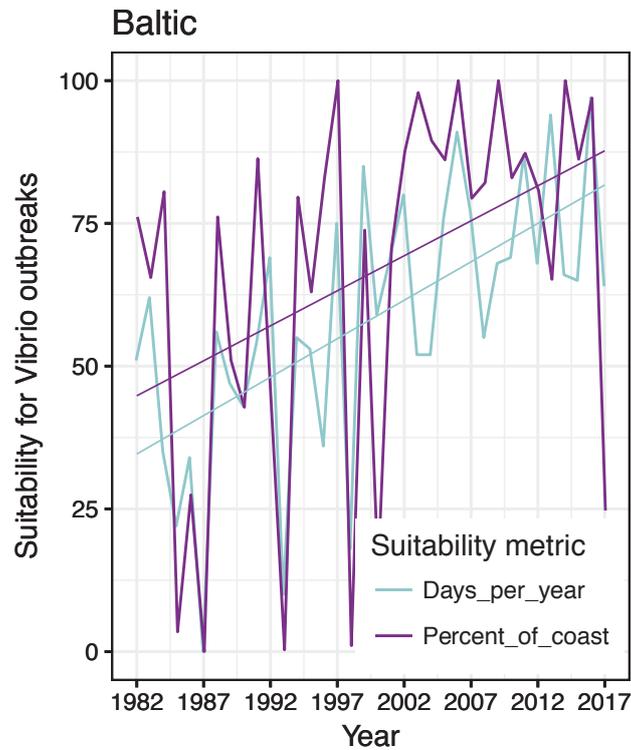
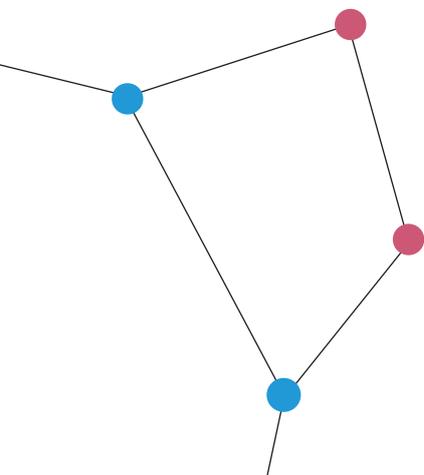


Figure 1. Variations of duration (in days) and geographical scope (in % of the coast) of suitability for *Vibrio* outbreaks in the Baltic sea region (1982-2017).

Recommendation 3

INFECTIOUS DISEASE: The Baltic Sea region has seen an increase in the transmissibility of *Vibrio* infection.

Make *Vibrio* cases reportable diseases in every country around the Baltic sea to facilitate close epidemiological surveillance and provide early warning of possible outbreaks, and develop a dedicated pan-European *Vibrio* network.



Energy and air pollution

Indicator 3.2: Coal phase-out in EU

Headline Finding: Since 2013, coal use has declined, resulting largely from reductions in consumption in China, enhanced efficiency in coal generation, and continued increase in use of shale gas in the US. In 2016, this downward trend continued, however preliminary data suggests it may increase slightly in 2017. (*Lancet Countdown*)

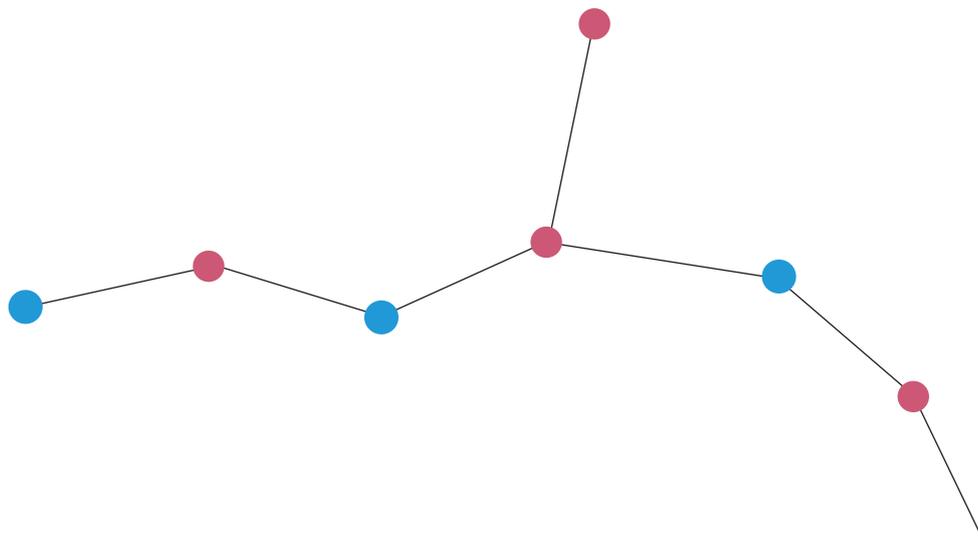
Many national governments have announced their intention to phase out coal.[20] A total of 39.64 gigawatts (GW) of coal power capacity, corresponding to 25% of the EU's currently operational coal fleet, are located in countries which have announced they will phase out coal.[20] Such commitments are beginning to be supported by international partnerships: in November 2017 the UK and Canada initiated the Powering Past Coal Alliance, which now includes European members Austria, Belgium, Denmark, Finland, France, Great Britain, Ireland, Italy, Latvia, Liechtenstein, Luxembourg, Netherlands, Portugal, Sweden, and Switzerland. These governments commit to phasing out existing traditional coal power in line with the Paris Climate Agreement, which is – according to the declaration – no later than by 2030 in OECD and EU member states, and no later than by 2050 in the rest of the world.[21] Belgium is the first, and so far, only formerly coal-burning EU member to have become coal-power-free.[20] The last coal plant closed in March 2016.

The Emissions Trading Scheme is one of the central mechanisms for reducing greenhouse gas emissions from large-scale facilities in the power and industry sectors, as well as the aviation sector. The ETS covers approximately 45% of the EU's greenhouse gas emissions. In 2020, the target is for the emissions from these sectors to be 21% lower than in 2005.[22]

The current situation regarding coal use is very different from one Member State to another:

According to the 2018 *Lancet Countdown* report, in 2016, France's share of total electricity generation from coal was 1.6% [13] while in Poland, electricity generation from coal represented 78.5% of the overall electricity generation.

More widely, Western Europe's share of total electricity generation from coal reached 20.3% in 2016 while Northern Europe only relied on coal for 6.3% of its electricity generation. [13]



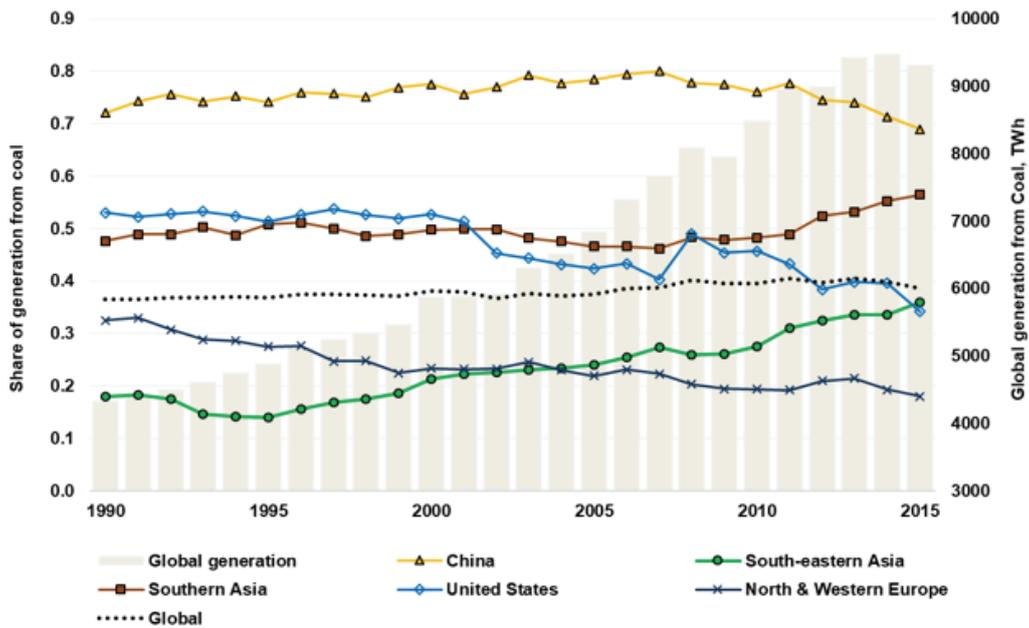
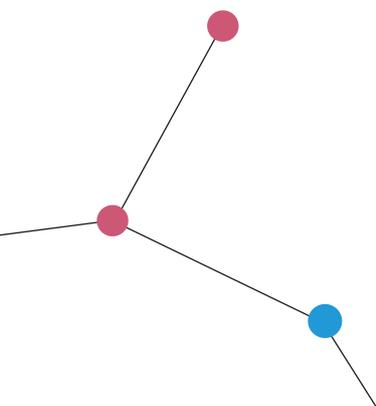


Figure 2. Share of electricity generation coal in selected countries and regions, and global TPES coal.[4]

Germany is currently unable to meet its 2020 climate target, largely due to not having curbed the burning of coal, which represents approximately 48 GW of open coal capacity.[20] Progress is being made however: in June 2018 the government established a multi-stakeholder coal commission, which is tasked with finding an agreement by the end of 2018. In October 2017, the city state of Berlin was the first 'Bundesland' of Germany to pass a coal phase-out law, putting an end to coal heat and power in that region by 2030, in accordance with an amendment to the Berlin Energy Turnaround Act. Berlin's last remaining lignite-fired power plants were already decommissioned in 2017.[23]

“Although Poland’s electricity mix is expected to become more diversified over the coming years, with the Polish Nuclear Power Program planning the procurement of a building permit for the first nuclear power plant, with its construction expected to occur between 2019-2024, [24] and interest increasing in shale gas exploration, coal is perceived by policy makers as a strategic energy resource for the country’s energy security and its consumption is not expected to decline over the next two decades. Five new units are under construction.[20]

Ageing coal power plants face a big challenge in attempting to meet air pollution requirements. The EU 2030 climate goals and energy market framework may help accelerate transition. [20]



Indicator 3.5.2: Premature mortality from ambient air pollution by sector

Headline Finding: Coal use accounts for approximately 16% of air pollution related deaths in Europe making it an important contributor to mortality related to ambient air pollution. (Lancet Countdown)

Despite recent air quality improvements in some jurisdictions, between 2014-2016 6-8% of the EU's urban population was exposed to concentrations of fine particulate air pollution (PM_{2.5}) in excess of the EU limit value, while 74-85% were exposed to concentrations above the WHO guideline value.[25] According to the European Environment Agency, in 2012, 403,000 premature deaths were due to PM_{2.5}, 16,000 to O₃ and 72,000 to NO₂. [26]

In May 2018, the European Commission outlined measures available to help member states fight air pollution in a communication entitled, "A Europe that protects: clean air for all." [27]. In this report, different examples of measures that could be taken by Member States to reduce air pollution are described, for different sectors, such as transport, power and heat or industry. The Commission also underlined the need to step up cooperation between Member States by engaging with relevant authorities in new 'Clean Air Dialogues,' and by using EU funding to support measures to improve air quality. In addition, the Commission referred France, Germany, Hungary, Italy, Romania and the United Kingdom to the Court of Justice of the EU for failing to respect agreed air quality limit values and for failing to take appropriate measures to keep exceedance periods as short as possible. The Commission also issued letters of formal notice to Germany, Italy, Luxembourg, and the United Kingdom on the grounds that they have disregarded EU vehicle type approval rules [28].

Indicator 3.5.2 from the 2018 *Lancet Countdown* reports mortality from chronic exposure to ambient PM_{2.5}, attributed to individual emission sectors by region.

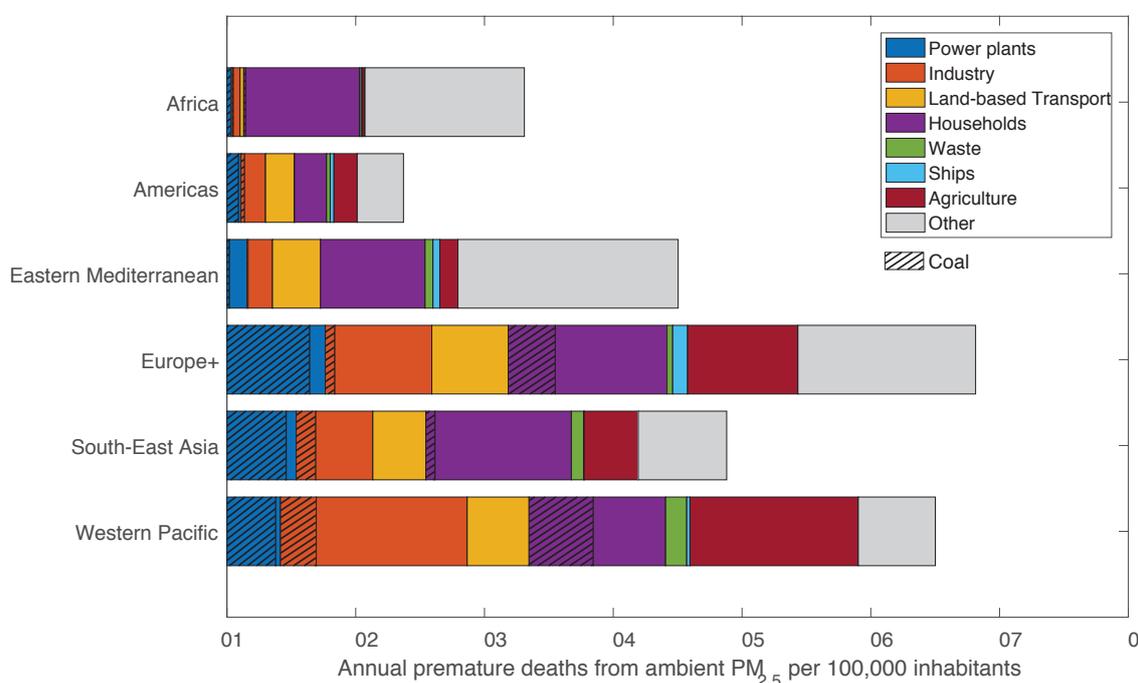


Figure 3: Annual premature deaths from ambient PM_{2.5} per 100,000 inhabitants by sector in 2015. Coal as a fuel is highlighted by hatching [4] (Lancet Countdown)

Key recommendation #4

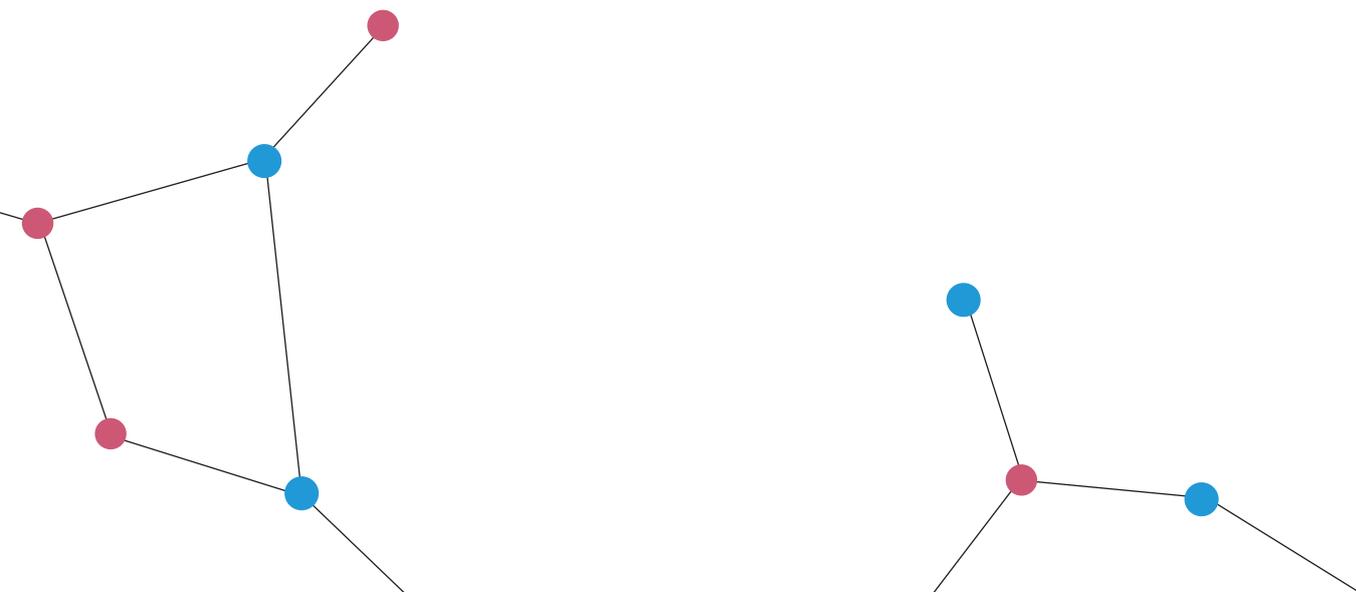
Maintain the EU's financial support for renewable energy schemes across its membership, and provide additional support in accelerating coal phase-out for a number of countries, including Poland, Bulgaria, Czech Republic and Romania.

Key recommendation #5

Encourage Member States phase out coal, and by doing so, to commit to phasing out existing unabated coal power generation in their jurisdictions, and to a moratorium on any new traditional coal power stations without operational carbon capture and storage within their jurisdictions.

Key recommendation #6

Air pollution from all sources should be reduced to the lowest possible levels so as to eliminate completely its effects on human health and the environment: all European Union Member States should meet EU commitments with respect to air quality.



Media Coverage of Health and Climate Change (Lancet Countdown Indicator 5.1)

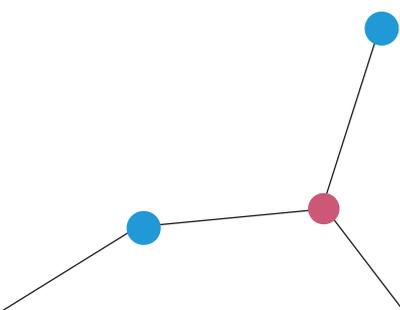
Headline Finding: Coverage of health and climate change in the media increased substantially between 2007 and 2017, a trend evident in both the global indicator and in analysis of leading global newspapers.(Lancet Countdown)

The first part of this indicator tracks coverage on health and climate change in the global media and demonstrates an increase of 42% between 2007 and 2017.[4]

The second part of the indicator focuses on three major national newspapers, Le Monde (French), Frankfurter Allgemeine Zeitung (German), and the New York Times (American), that form part of the 'élite' news media seen to play a pivotal role in shaping public and political responses to climate change. Coverage of health and climate change increased in all three newspapers (Figure 4). Between 2009 and 2017, the number of articles increased by 200% in Frankfurter Allgemeine Zeitung (FAZ) and 18% in Le Monde. However, health remains a very marginal theme of articles published on climate change, representing only 2% of articles in 2017 in FAZ, and 8% in Le Monde. [13]

Content analysis showed interesting themes: in the European newspapers, the proportion of articles explaining why climate change is a public health issue declined over the period, but a parallel increase was seen in those highlighting the health dimensions of national climate change interventions.

Given decreasing newsroom budgets, the most realistic way to improve this situation is for health practitioners to make a better effort to proactively point out links between climate change and health in a manner that is relevant to the news cycle.



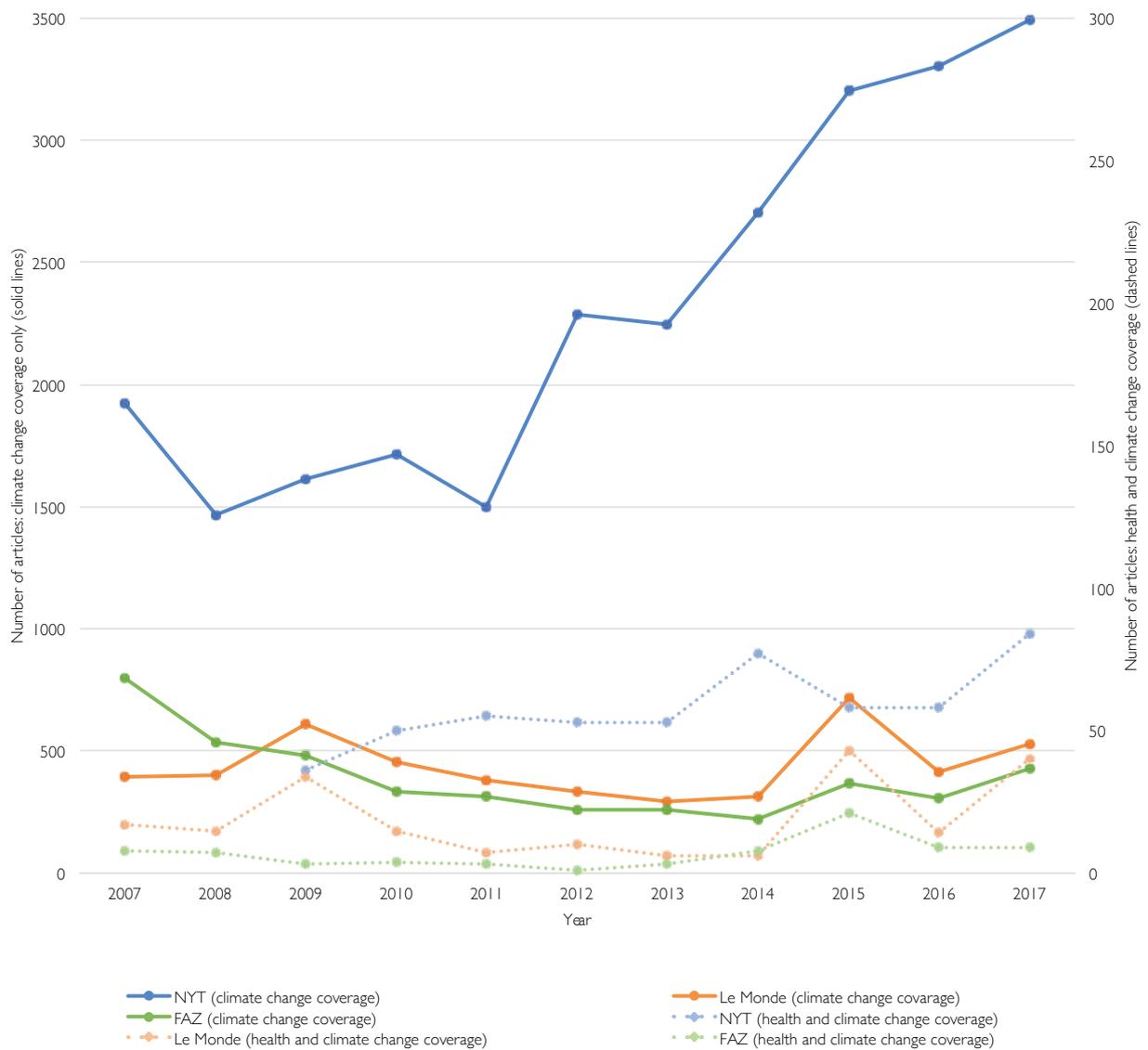
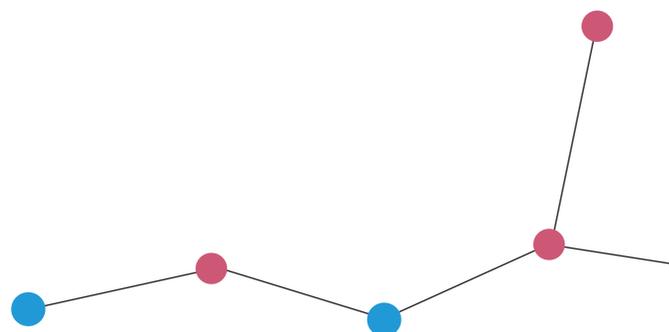


Figure 4. Newspaper reporting of a) climate change, and b) health and climate change, in the *New York Times* (NYT), *Le Monde*, and *Frankfurter Allgemeine Zeitung* (FAZ), from 2007-2017. (*Lancet Countdown*)

Key recommendation #7

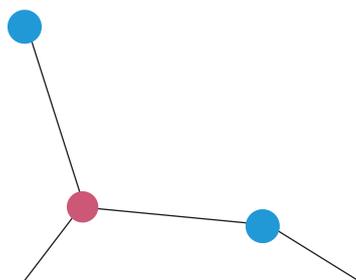
Ensure consistent, pro-active external communications by health bodies pointing out the links between climate change and health impacts in real time as events which have been shown to be increasing due to climate change (e.g. heat waves, wildfires, extreme weather) occur.

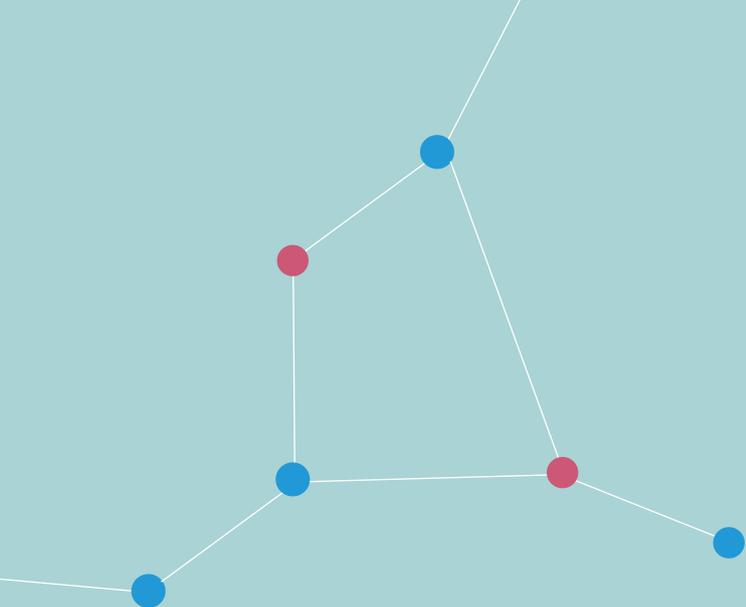


References

1. World Health Organization. WHO calls for urgent action to protect health from climate change
2. Watts, N., et al., Health and climate change: policy responses to protect public health. *Lancet*, 2015. 386(10006): p. 1861-914.
3. Costello, A., et al., Managing the health effects of climate change: Lancet and University College London Institute for Global Health Commission. *Lancet*, 2009. 373(9676): p. 1693-733.
4. Watts, N., et al., The 2018 Report of The Lancet Countdown on Health and Climate Change. *The Lancet*, 2018.
5. The Standing Committee of European Doctors (CPME). Global Warming and Health. 2009. Available from: http://doc.cpme.eu:5911/Adopted/2009/CPME_AD_EC_220409_021_final_EN.pdf.
6. European Commission. Archive of European Integration - A community strategy to limit carbon dioxide emissions and to improve energy efficiency. Communication from the Commission to the Council. 1991; Available from: <http://aei.pitt.edu/4931/>.
7. European Commission. 2020 climate and energy package. Available from: https://ec.europa.eu/clima/policies/strategies/2020_en#tab-0-0.
8. European Commission. « 2050 low-carbon roadmap ». Available from: https://ec.europa.eu/clima/policies/strategies/2050_en.
9. European Commission. Two years after Paris : Progress towards meeting the Eu's climate commitments. 2017; Available from: https://ec.europa.eu/clima/sites/clima/files/strategies/progress/docs/swd_2017_xxx_en.pdf.
10. World Weather Attribution, Heatwave in northern Europe, summer 2018. 2018.
11. Rubin, A., Scorching Summer in Europe Signals Long-Term Climate Changes, in *New York Times*. 2018.
12. Watts, N., et al., The Lancet Countdown on health and climate change: from 25 years of inaction to a global transformation for public health. *Lancet*, 2017.
13. Watts N, Ammann M, Arnell N, Ayeb-Karlsson S, Belesova K, et al. The 2018 Report of The Lancet Countdown on Health and Climate Change. *The Lancet*. 2018.
14. Matthies F, Bickler G, Cardenosa Marin N, Hales S, editors. Heat-Health Action Plans. Guidance. Copenhagen: WHO Regional Office for Europe; 2008.
15. The European Commission's science and knowledge service. PESETA report. Available from: <https://ec.europa.eu/jrc/en/peseta>.
16. UK, Heatwaves: adapting to climate change. , H.o.C.E.A. Committee, Editor. 2018.

17. Heat alert and response systems to protect health : best practices guidebook. Available from: <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/climate-change-health/heat-alert-response-systems-protect-health-best-practices-guidebook.html>.
18. IFMSA. 2020 Vision for Climate-Health in Medical Curricula. 2018 [cited 2018 October 9, 2018]; Available from: <https://docs.google.com/forms/d/e/1FAIpQLSeMxig6Yhs4qJU8oboKXm0KqGXRj64fcso8o9IHBikNGX5RYA/viewform>.
19. Baker-Austin C;Trinanes JA;Taylor NGH; Hartnell R; Siitonen A; Martinez-Urtaza J. 2012. Emerging vibrio risk at high latitudes in response to ocean warming. Nature Climate Change 3:73-77.
20. Overview : National coal phase-out announcements in Europe (Status as of september 2018). Available from: <https://beyond-coal.eu/wp-content/uploads/2018/09/Overview-of-national-coal-phase-out-announcements-Europe-Beyond-Coal-September-2018.pdf>.
21. Government of Canada. Coal phase-out: the Powering Past Coal Alliance. 2018 [cited 2018 July 10, 2018]; Available from: <https://www.canada.ca/en/services/environment/weather/climatechange/canada-international-action/coal-phase-out.html>.
22. European Commission. EU emissions trading system. Available from: https://ec.europa.eu/clima/policies/ets_en.
23. Senate department for the Environment, Transport and Climate Protection. « Berlin's phase-out of coal ». 2017. Available from: https://www.berlin.de/senuvk/klimaschutz/kohleausstieg/index_en.shtml.
24. Polish Nuclear Power Program - Ministerstwo gospodarki. 2014.
25. European Environment Agency. Exceedance of air quality standards in urban areas. Available from: <https://www.eea.europa.eu/data-and-maps/indicators/exceedance-of-air-quality-limit-3/assessment-4>.
26. European environment Agency. Mortalité prématurée imputable à la pollution atmosphérique. Available from: <https://www.eea.europa.eu/fr/pressroom/newsreleases/de-nombreux-europeens-restant-exposes/mortalite-prematuree-imputable-a-la>.
27. European Commission. Communication from the commission to the european parliament, the council, the european economic and social committee and the committee of the regions; Available from: http://ec.europa.eu/environment/air/pdf/clean_air_for_all.pdf.
28. European Commission : press release (May, 17th 2018). Available from: http://europa.eu/rapid/press-release_IP-18-3450_en.htm.





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