NEWSLETTER

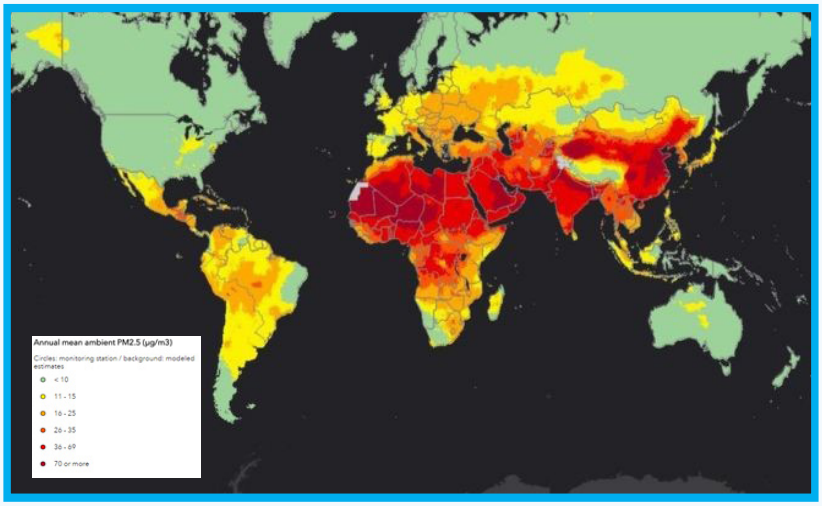
WHO COLLABORATING CENTRE FOR AIR QUALITY MANAGEMENT
AND AIR POLLUTION CONTROL at the GERMAN ENVIRONMENT AGENCY

No. 58 - February 2017

EDITORIAL

Strong Signals for Clean Air

Polluted air affects 92 % of the world population. New maps developed and published by the World Health Organization have visualized this impressively. They show that the most populated areas of the world have such a bad air quality that human health is at risk. Wherever you see a yellow, orange or red color in the map below, the WHO guidance values are not met and the health of the people living in these areas may be endangered by high particle concentrations.



Source: http://maps.who.int/airpollution/

Without doubt, it is time to act, for national governments and supranational organizations. These days we received two strong signals on air quality from the European Union.

The European Environmental Agency published its annual thematic report EEA SIGNALS 2016. Focusing on transport and environment in Europe. This sector has a direct impact on the European citizens' health through noise and air pollution. People in urban areas are primarily at risk. Up to 30 % of the inhabitants of cities in the EU are exposed to air pollutant levels exceeding the current EU air quality standards. We know that the EU-standards are not sufficiently stringent to protect human health. Comparing air pollution exposure with the more stringent health-based WHO guidelines for air quality almost all people (98 %) living in European cities have no access to healthy air.

Another recent paper by Turnock, S. T. et al. (2016) doi: 10.1088/1748-9326/11/2/024010 shows that European air quality legislation and technical measures have reduced fine particulate matter ($PM_{2.5}$) by 35 % compared to those levels that would have been reached under political inactivity. Annually 80.000 premature deaths have been prevented across the EU and societal costs of US$ 232 Billion have been avoided annually. The other strong signal at the end of the year 2016 came from Brussels. The European Commission decided to act against 7 Member States on the grounds that

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they have failed to fulfil their obligations under EU vehicle type approval legislation. The Czech Republic, Germany, Greece, Lithuania, Luxembourg, Spain and the United Kingdom have been accused that they have disregarded EU vehicle type approval rules. The seven governments did not ensure that the car manufacturers comply with European legislation, for example by using defeat devices to reduce the effectiveness of emission control systems. The German type approval authority (Kraftfahrt-Bundesamt, KBA) has stated that Volkswagen Group has violated the prohibition under EU law to use defeat devices so that the emission control is only effective during laboratory testing. Commissioner Elżbieta Bieńkowska, responsible for Internal Market, Industry, Entrepreneurship and SMEs, said: „Abiding by the law is first and foremost the duty of car manufacturers. But national authorities across the EU must ensure that car manufacturers actually comply with the law."

Polluting our air deliberately and breaking European laws is not a trivial offense. Polluted air has direct and negative effects on the health of all of us, determines our lives even before birth and has a measurable impact on our life expectancy. The Commission's consequent action shows that it is not willing to tolerate illegal actions that compromise the citizens' health. The same consequence is required from the authorities of the member states.

Clean air is a precious good. When we strengthen our collaboration to protect it, it simply pays. We can avoid suffering and disease, and prolong our lives.

Andreas Gies and Hans-Guido Mücke
WHO Collaborating Centre for
Air Quality Management and Air Pollution Control

ABOUT

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Due to the abuse of e-mail addresses the symbol @ is replaced by [at]!

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PUBLIC HEALTH ENGLAND'S AIR POLLUTION AND PUBLIC HEALTH PROGRAMME

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Air pollution is the biggest environmental risk to health in England despite improvements in air quality in recent decades. In England, long term exposure to particulate air pollution is estimated to have 'an effect equivalent to' 25,000 deaths a year with an associated loss of life of 265,000 years (PHE 2014). Public Health England's (PHE) role is to provide scientific advice on the health effects of air pollution so that Government and other stakeholders can improve air quality at local, national and international level. For example, we work with local authorities to reduce people's exposure to air pollution and promote the health benefits of swapping to less polluting methods of travel, such as walking or cycling to work.

PHE is an independent executive agency of the UK government's Department of Health. It exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. In 2014, PHE's Centre for Radiation, Chemical and Environmental Hazards (CRCE) established an air pollution programme.

The programme, which is informed by annual advisory and stakeholder meetings involving representatives from local authorities, government, academia and professional bodies, focuses on:

(a) Raising public and professional awareness on air pollution issues through sustained public health engagement with local authorities and other stakeholders, and

(b) Providing evidence on the health effects of air pollutants; aiming to develop a practical framework for local authorities to evaluate the health benefits of local interventions, such as 'active travel (Active travel - Making a journey by physical activity such as walking or cycling instead of driving or taking public transport).

Raising awareness

In addition to highlighting the scale of the public health problem associated with air pollution to healthcare and public health professionals, we encourage them to support local, national and international initiatives to reduce emissions. An essential part of this includes identifying measures that have 'co-benefits' for other public health such as increased physical activity, climate change mitigation and adaptation as well as community cohesion and road safety. PHE recently published a briefing for local authorities called 'Working Together to Promote Active Travel' https://www.gov.uk/government/publications/active-travel-a-briefing-for-local-authorities.

PHE works with health charities and professional bodies to help raise awareness of the effects of air pollution amongst medical professionals and vulnerable groups. We contributed to the report by the Royal College of Physicians and the Royal College of Paediatrics and Child Health published in 2016 that examined the impact of exposure to air pollution across the course of a lifetime (RCP, 2016).

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As part of this work, the RCP created '6 steps to breathing better air' for the general public:

B e aware of the air quality where you live
R eplace old gas appliances in your home
E nsure you have an energy efficient home
A lter how you travel. Take the active travel option: bus, train, walking and cycling
T alk to your MP
H arness technology to stay informed and monitor air pollution effectively

Health communication can enable the public to reduce their personal exposure by avoiding areas of higher pollution during episodes of poor air quality. The Defra Daily Air Quality Index (DAQI) provides current and predicted information on air pollution, rated in bands from low to very high and gives suggestions for action that can be taken, where possible, to minimise exposure in the event of short term air pollution episodes. The DAQI includes five pollutants (nitrogen dioxide, sulphur dioxide, ozone, and particles measured as PM_{10} and $PM_{2.5}$). PHE works with Defra to pro-actively disseminate health advice during significant 'High' air pollution episodes in the UK because this is when vulnerable groups should reduce physical exertion, particularly outdoors if they experience symptoms.

PHE has developed an Air Pollution Episode Communications Toolkit for Local Authority Press Offices to support local media responses. This toolkit contains key health messages and social media material for use during an air pollution episode in a particular locality. PHE has also supported Defra in the production of a Directors of Public Health Air Quality Toolkit, which includes information on engaging with local decision makers and communicating with the public. PHE provides advice on messaging to the general public and vulnerable groups on exposure reduction behaviours. We are also providing advice to the behavioural change charity Global Action Plan http://www.globalactionplan.org.uk/Pages/Category/air-quality, which is organising a National Clean Air Day being held on 15 June 2017.

Providing evidence on the health effects of air pollutants

PHE provides the scientific secretariat to the Committee on the Medical Effects of Air Pollutants (COMEAP). This expert advisory body examines the evidence linking exposure to air pollution with mortality and morbidity from various conditions. It is currently looking at whether/how to quantify cardiovascular morbidity associated with air pollution and finalising a report on the association of long-term average concentrations of nitrogen dioxide and mortality. COMEAP provided interim recommendations on the quantification of the mortality impacts of nitrogen dioxide (COMEAP, 2015a) to Defra to assist with the development of air quality plans to improve air quality by reducing nitrogen dioxide in our towns and cities https://www.gov.uk/government/publications/air-quality-in-the-uk-plan-to-reduce-nitrogen-dioxide-emissions.

Other recent publications include reports on long-term exposure to air pollution and chronic bronchitis (COMEAP 2016), quantification of mortality and hospital admissions associated with ground-level ozone (COMEAP 2015b) and a statement on 'the evidence for differential health effects of particulate matter according to source or components' (COMEAP 2015c). These reports and statements are available on the COMEAP website www.comeap.org.uk.

In addition to an internal research programme on the effects of air pollution on health, focussed in particular on asthma, PHE is also a partner in two Health Protection Research Units Environmental Change and Health http://www.hpru-ech.nihr.ac.uk/ and Health Impact of environmental hazards http://hieh.hpru.nihr.ac.uk/, funded by the National Institute for Health Research, whose remit includes air pollution research. Air pollution research by these units

includes work on:

- optimising assessment of health impacts of air pollution
- exposure and health impact assessments of particulate air pollution episodes and nanoparticles
- assessment of the effects of climate change mitigation on air pollution
- development of improved in vitro systems for evaluation and comparing toxicity of air pollutants.

Quantifying the burden of air pollution

As well as quantifying the mortality burden from long-term exposure to particulate matter, PHE has also considered the impacts of short term elevations of air pollution. Two episodes of elevated air pollution in March-April 2014, totalling 10 days were analysed. PHE estimated the number of deaths brought forward were around double those associated with typical background levels of particulate air pollution for that time of year. This means that around 600 deaths were estimated to have been brought forward across the UK over the 10 days of High and Very High air pollution compared to around 300 associated with typical particulate ($PM_{2.5}$) air pollution levels (Macintyre et al. 2016).

At local authority level, estimates of the fraction of mortality attributable to long-term exposure to particulate air pollution arising from human activities are published by PHE as one of the indicators in the Department of Health's Public Health Outcomes Framework (PHOF) for England http://www.phoutcomes.info/. The information is updated yearly and it is expected that this will help assess the importance of air pollution locally, alongside other factors detrimental to public health. This should allow appropriate attention to be given to actions to reduce the exposure of the local population to air pollution. For England as a whole, approximately 5.1 % of adult deaths from all-causes in 2014 were attributable to long-term exposure to human-made particulate air pollution.

The estimated cost of air pollution in the UK is between £8.5bn and £20.2bn a year (EAC, 2010). This is based only on estimates of the mortality burden and so PHE has recently commissioned a project to estimate the costs to health and social care. This will help inform the government's assessment of the costs and benefits of action on air quality.

Effectiveness of interventions to reduce air pollution

Work is underway to review existing methods for assessing the health benefits of interventions aiming to reduce exposure to air pollution and provide wider public health benefits. The aim is to develop a practical framework for assessing local interventions focusing on active travel / local travel plans. Two workshops on Health Impact Assessment Methods for Local Transport Interventions and their impact on air pollution have been held and a review paper of the methods and tools available is in preparation.

The National Institute for Health and Care Excellence (NICE) provides national guidance and advice to improve health and social care in the UK. PHE is providing input into the development of NICE guidance on air pollution: outdoor air quality and health, focussing on interventions to reduce road-traffic related air pollution, due later this year, and to the development of NICE guidance on actions to reduce indoor air pollution.

Summary

Reducing the health burden attributable to air pollution requires a concerted effort working in

collaboration with numerous organisations. PHE is working with national and local government, international organisations, such as WHO, charities, professional bodies and research institutions to continue building the evidence base on the health effects of air pollution and on action to reduce population exposure.

Acknowledgements

This programme of work is led by PHE's Air Pollution and Public Health project group. The group, project managed by Karen Exley and Lydia Izon-Cooper includes Sotiris Vardoulakis, Naima Bradley, Alec Dobney, Clare Heaviside, Alison Gowers and Sani Dimitroulopoulou.
All colleagues in PHE working on air pollution.

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Release of WHO data on air pollution exposure and its health impact by country

A new WHO air quality model confirms that in 2012, almost half a million Europeans died prematurely due to ambient air pollution.

The new global report, released last September, presents the most detailed outdoor (ambient) air pollution and health impact data by country ever reported by WHO.

The model, developed by WHO in collaboration with the University of Bath, United Kingdom, uses satellite-derived data combined with air transport models and ground station monitors from more than 3000 locations worldwide.

The report provides several indicators of the burden of disease from air pollution, with global estimates revealing that 94% of air pollution-related deaths are due to non-communicable diseases (ischaemic heart diseases, stroke, chronic obstructive pulmonary disease and lung cancer).

The report also includes age-standardized figures that take into account differences in life expectancy, and thus present a more realistic profile of the health impact of air pollution in the European Region. Country-level differences in underlying risk factors and baseline health status can be still significant, however.

Together with the launch of the report with the new data, an interactive map is also available to provide information on population-weighted exposure to small particulate matter (≤2.5 μm diameter; $PM_{2.5}$) for all countries.

The map also indicates data on monitoring stations for PM_{10} (≤10 μm diameter) and $PM_{2.5}$ for about 3000 cities and towns globally. It is particularly evident that monitoring capacity varies greatly throughout the WHO European Region: the map highlights where the data gaps are and raises the opportunity to improve air quality monitoring in the Region.

Breathing life back into our cities

Air pollution isn't just a little haze in the distance. Air pollution outdoors and inside our homes claims an estimated 6.5 million lives every year. It impacts our health through long-term exposure and causes near-term climate change, threatening the lives of future generations.

Now, take a deep breath: today we start making a change. The World Health Organization and the Climate & Clean Air Coalition (CCAC) have launched a joint campaign called BreatheLife to mobilize cities and individuals to protect our health and planet from the effects of air pollution.

Visit BreatheLife2030.org to see how the air in your city compares to the WHO guideline for safe air, learn about clean air solutions and commit to breathe life back into your city.

Pan-European countries commit to lead transition to green economy and tackle air pollution

Governments of the pan-European region reconfirmed their commitment to take the lead in the transition to a green economy and committed to reduce air pollution, the largest environmental health threat in the region.

These were the main conclusions of the 8th "Environment for Europe" (EfE) Ministerial Conference, held in Batumi, Georgia, last June 2016.

Countries endorsed the Strategic Framework for Greening the Economy in the Pan-European region, which will help countries in their transition to the green economy.

In addition, 36 countries and organizations pledged additional commitments towards the green economy, in fields such as food production and waste, ecosystem services, sustainable public procurement and fiscal measures, green technologies, etc., through the Batumi Initiative on Green Economy (BIG-E).

Countries also endorsed the Batumi Action for Cleaner Air, which includes specific commitments to ratify and implement the latest protocols to the UNECE Air Convention that can have a strong and measurable impact on air quality and human health.

Sixth Ministerial Conference on Environment and Health

The Sixth Ministerial Conference on Environment and Health will bring together health and environment ministers and high-level representatives of Member States in the WHO European Region, partner organizations, academia and civil society. Member States are expected to adopt a ministerial declaration, an implementation plan for its commitments and a reformed governance mechanism for the European Environment and Health Process.

The European Environment and Health Process is taking place in the context of system-wide strategic planning, implementation and reporting of the United Nations Agenda 2030 for Sustainable Development, to ensure coherent and integrated support for implementation across countries, sectors and United Nations fora. The platform focuses on Sustainable Development target 3.9 and on another 16 Sustainable Development Goals that have the greatest potential to protect and improve health and well-being under pressure from global environmental change, including climate change; demographic changes such as longevity, migration and urbanization; and emerging global economic and technological developments.

Indoor Air 2016 - the 14th International Conference on Indoor Air Quality and Climate
3-8 July 2016, Ghent, Belgium

July 2016 saw the fourteenth issue of "Indoor Air", the flagship conference of the International Society of Indoor Air Quality and Climate (ISIAQ). Indoor Air covers research and policy issues from all areas of indoor air sciences and practice. More than 860 participants joined Indoor Air 2016, which was organised by Jelle Laverge (Ghent University, Belgium), Marianne Stranger (VITO, Belgium), and Tunga Salthammer (WKI, Germany). Given the high number of oral and poster presentation, there were as many as eight parallel conference sessions spread over several buildings. While this emphasises Indoor Air's popularity, it clearly implied a logistical challenge for the organising committee.

The conference addressed, amongst others, the following scientific topics:

Indoor air fundamentals: chemical and physical processes, comfort of living, microbiology, epidemiology, public health

Healthy and sustainable buildings: Ventilation, energy efficiency, refurbishment, environmental impact

Abatement and exposure reduction: Source reduction, air purification, air filtration, absorbing materials, regulations and policy

Emerging issues in indoor air sciences: Respiratory infections, new chemicals, nanoparticles, transport environments, olfactory assessment

Innovative solutions in practice: New sampling and technology applications, new materials, prediction and measurement

New technologies and applications: Smart houses, smart technology, wireless sensors, bio-monitoring

Indoor Environmental Quality (IEQ) in developing countries: – conditions of living inside buildings, rapidly urbanising cities

Communication: standards and codes, education, sensitisation, prevention community engagement

Indoor Air 2016 showed that the scientific community now recognises indoor hygiene as an overarching challenge, which can only tackled efficiently by cooperation of professionals from various subject areas including architecture, civil engineering, natural science, environmental science, public health, social science, building industry, public administration, and policymaking.

Several speakers particularly highlighted the need for researchers to communicate their results and wishes more clearly than before to stakeholders and decision makers. High level research results need to be translated into a language that most people readily understand.

Knowledge on indoor hygiene seems to be fragmented and spread among many societal players from research, academia, and public service. (This appears to be similar all over the world.) In the past, this has contributed to confusion among citizens, the building industry, and policymakers likewise. There is a lack of national contact points where citizens and small or

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medium-sized businesses can obtain comprehensive and coherent information regarding indoor hygiene and the corresponding construction-related needs.

Indoor-related air quality problems vary greatly in a world-wide comparison. In Asia, for example, indoor air quality problems are dominated by the high levels of outdoor pollution, and also by the high occupancy of buildings dedicated to offices and schools. (Note that simple ventilation, in particular, will not necessarily solve the indoor air quality problems there.) Conference sessions on air cleaning and purification systems thus proved to be very popular especially among the Asian participants. Another issue was how to improve the conditions of living in developing regions where, for instance, large portions of the population are still exposed to significant indoor pollution from sources such as open-fire room heating and cooking. In North America and Europe, there seems to be a large interest in reconciling low-energy-consumption housing with low indoor pollutant levels originating from building materials. Unfortunately, I could not observe any participants from areas such as South America, Africa, India, or the Commonwealth of Independent States (CIS). It should certainly be a wish of the organisers to attract more participants from these regions in the future as well.

- Some new research/policy trends observed on the conference include:
- Health-related assessment of pollutants with low-cost in vitro systems
- Continuous measurement of organic indoor pollutants
- Development of smart, networked sensors for various pollutants
- Explicit numerical simulations of physical and chemical processes, such as the secondary formation of pollutants
- Detecting and exploring the behaviour of occupants in offices and residences
- Intelligent algorithms to operate ventilation and air conditioning systems
- Provide ventilation with a minimum of technical equipment
- Future house building in view of the anticipated climate change
- Survey studies over the conditions of living and indoor air quality world-wide (USA, France, Denmark, among others)
- Research studies involving the active participation of citizens

The presentations and vivid discussions during the conference lead to the conclusion that indoor air quality and indoor climate continue to live as important scientific issues addressing human health and the comfort of living.

The next Indoor Air conference will take place 2018 in Philadelphia, USA.

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Launch event of the „European Burden of Disease Network" (EBoDN), initiated by the WHO Regional Office for Europe 20-21 September 2016 London, United Kingdom

Burden of disease estimates are increasingly used to present the health status of populations all over the world. The core measure, disability-adjusted life year (DALY), allows to summarize health effects resulting from both mortality and morbidity in a single numerical index. The DALY combines years of life lost due to premature death (YLL) with years lived with disability (YLD) and thus, enables comprehensive and comparable assessments of the burden resulting from diseases and injuries. The DALY was introduced in the first Global Burden of Disease (GBD) study in 1996 and since then has been applied in many global, regional, national and even local assessments of disease burden. This concept also provides information on the fraction of disease burden attributable to behavioral, metabolic, occupational and environmental risk factors and thus, gives valuable insights into potential prevention and intervention options to reduce disease burden.

Initially developed by the WHO, World Bank and the Harvard School of Public Health, the Institute for Health Metrics and Evaluation (IHME) took the lead in the further development of the methodology and is currently responsible for annual updates of the GBD study. The results of the GBD study attract a lot of attention in many countries throughout the world, and national collaborations between the IHME and country public health experts have led to specific assessments for several countries. In some countries, including in China, Brazil, Mexico, Norway and England, sub-national estimates have been developed. These collaborative studies are important, since the IHME has only limited access to country specific data sources and also usually does not have a complete overview of health issues relevant to national or even local stakeholders and decision makers.

In the last couple of years the interest of many European countries has increased to perform national burden of disease studies. Currently, Germany is also considering such an assessment. To ensure a harmonized use of the methods the steering committee of the "WHO European Health Information Initiative" expressed the strong need to establish a European network devoted to the burden of disease topic. This network brings together representatives from Member States of the WHO European Region to share expertise and exchange knowledge on burden of disease. One key objective of the network is to provide guidance for countries to conduct national and sub-national burden of disease studies.

The WHO Regional Office for Europe invited national experts on Burden of Disease to launch the "European Burden of Disease Network" (EBoDN) in London (20-21 September 2016). Representatives from Sweden, Norway, Denmark, Scotland, England, Belgium, the Netherlands, the Russian Federation, Serbia, Switzerland and Germany joined the one and a half day event. In addition, experts from WHO and IHME who co-host the network contributed. Germany was represented by colleagues from the Robert Koch Institute and the German Environment Agency. Prof. Dr. John Newton (Public Health England) was elected as chair of the EBoDN for the upcoming two years.

The first day of the meeting was reserved for methodological discussions with special focus on national and sub-national assessments. In addition to introductory methodological presenta-

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tions from IHME and WHO the participants presented the current status of their national burden of disease studies. Some participants, such as England and Norway, are in an advanced stage and have already performed a national assessment together with the IHME and now are in a phase of updating, refining and expanding their analyses. Thus, other member states currently planning a burden of disease study can benefit from the wealth of experience of the network. The discussions also showed that some member states wish to keep control of the modelling processes and perform their analyses independently because this would enhance acceptance of results within their countries. Therefore, WHO and IHME are in the process of developing a "National Burden of Disease Manual" document, which would support countries to conduct their own national burden of disease study. It was agreed to form a working group of the EBoDN to support the development of this manual.

The second day of the meeting was devoted to defining the network's vision, mission and aims and agreeing on the terms of reference for the group. The participants observed that valid and up-to-date national burden of disease assessments can only be achieved with sustainable resources in member states.

The EBoDN is an open network and welcomes new members. It will have regular meetings co-ordinated by the WHO Regional Office for Europe. Already now, the network is a treasure chest for knowledge in the field of burden of disease and with every member joining the number of advocates for the potential of this concept will grow. With this initiative public health policy making in Europe will gain an additional and important harmonized concept to monitor health in Europe, to identify data and research demands and eventually to improve the health status of the European population.

Further readings:

http://www.euro.who.int/en/media-centre/events/events/2016/09/first-meeting-of-europes-new-burden-of-disease-network

http://blogs.bmj.com/bmj/2016/10/04/claudia-stein-europe-is-embracing-the-burden-of-disease-approach/

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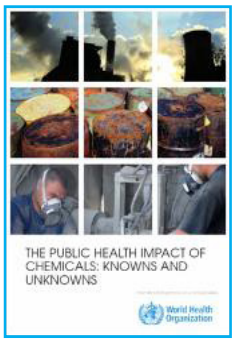
Public health impact of chemicals: knowns and unknowns

by WHO (World Health Organization), 2016. Available in English (PDF), 4.52 MB.



This 2016 report estimates that 1.3 million lives and 43 million disability-adjusted life-years were lost in 2012 due to exposures to selected chemicals. However, data are only available for a small number of chemical exposures and people are exposed to many more chemicals every day. Unintentional poisonings are estimated to cause 193 000 deaths annually, with the major part being from preventable chemical exposures, however only 47% of countries have a poisons centre. Addressing lead exposure would prevent 9.8% of intellectual disability, 4% of ischaemic heart disease and 4.6% of stroke in the population, yet many countries do not regulate lead paint. This report provides examples of effective interventions to prevent death and disease caused by chemicals, and the economic benefits to be gained.

http://apps.who.int/iris/handle/10665/206553

Towards environmentally sustainable health systems in Europe. A review of the evidence

by WHO (World Health Organization), 2016. Available in English (PDF), 914.9 KB.

This review provides evidence to illustrate the environmental impact of health systems in Europe, the potential benefits of fostering environmental sustainability in health systems and the barriers to and incentives for such action. The evidence is clear that health systems have a considerable impact on the environment, contributing to greenhouse gas emissions and climate change, releasing ecologically toxic substances into the environment, producing large volumes of waste material and contributing to the depletion of natural resources such as drinking-water. Nevertheless, heath systems also have positive environmental effects, particularly as a result of environmental health protection and some health promotion activities. Overall, the evidence reviewed in this report illustrates the compelling rationale for fostering environmental sustainability in health systems.

http://www.euro.who.int/__data/assets/pdf_file/0012/321015/Towards-environmentally-sustainable-HS-Europe.pdf?ua=1

Bibione. Breathe by the sea. The story of a smoke-free beach in Italy (2014)

by WHO (World Health Organization), 2016. Available in English (PDF) 1.1 MB. ISBN 978 92 890 5052 4. viii + 34 pages.

This publication supports the implementation of the WHO Health 2020 policy. It documents a local initiative for a smoke-free beach employing whole-of-government and whole-of-society approaches to address a common public health challenge: smoking and exposure to tobacco smoke in public settings. The publication describes the key steps in developing the initiative, the recruitment of a champion as leader and a number of key messages that could be useful to other regions and countries wishing to take on a similar public health challenge.

http://www.euro.who.int/__data/assets/pdf_file/0019/249013/Bibione-Breath-by-the-Sea-updated-version.pdf?ua=1

Other Publications:

Every breath we take: the lifelong impact of air pollution

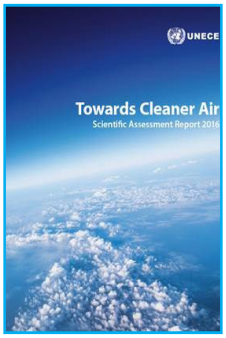
by RCP (Royal College of Physicians) and RCPCH (Royal College of Paediatrics and Child Health), 2016. Available in English (PDF), 4.05 MB. ISBN 978 1 86016 5672.

The report starkly sets out the dangerous impact air pollution is currently having on our nation's health. Each year in the UK, around 40,000 deaths are attributable to exposure to outdoor air pollution which plays a role in many of the major health challenges of our day. It has been linked to cancer, asthma, stroke and heart disease, diabetes, obesity, and changes linked to dementia. The health problems resulting from exposure to air pollution have a high cost to people who suffer from illness and premature death, to our health services and to business. In the UK, these costs add up to more than £20 billion every year.

https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution

Towards Cleaner Air Scientific Assessment Report 2016

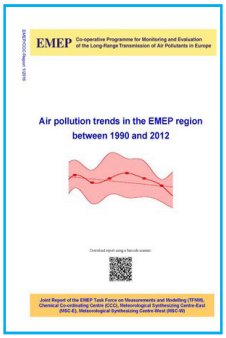
by UNECE, 2016.



The aim of this assessment is to serve as a basis for considering new directions for policy development and for identifying policy-relevant research questions. The international co-operative approach, which includes interaction between science and policy, as developed under the Convention, provides a good basis for exploring synergies between air pollution and climate change, agriculture and biodiversity, and energy and public health policies on the urban, national, continental and hemispheric scale.
http://www.unece.org/fileadmin/DAM/env/lrtap/ExecutiveBody/35th_session/CLRTAP_Scientific_Assessment_Report_-_Final_20-5-2016.pdf

Air pollution trends in the EMEP region between 1990 and 2012

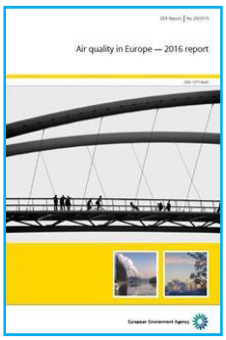
by UNECE, 2016. ISBN 978 82 425 2833 9.



The present report synthetises the main features of the evolution over the 1990-2012 time period of the concentration and deposition of air pollutants relevant in the context of the Convention on Long-range Transboundary Air Pollution: (i) ozone, (ii) sulfur and nitrogen compounds and particulate matter, (iii) heavy metals and persistent organic pollutants. It is based on observations gathered in State Parties to the Convention within the EMEP monitoring network of regional background stations, as well as relevant modelling initiatives. The main conclusions of this assessment for each type of compounds are as follows.
http://www.unece.org/fileadmin/DAM/env/documents/2016/AIR/Publications/Air_pollution_trends_in_the_EMEP_region.pdf

Air quality in Europe - 2016 Report (EEA Report No 28/2016)

by EEA (European Environment Agency), Copenhagen, 2016.



This report presents an updated overview and analysis of air quality in Europe. It is focused on the air quality state in 2014 and the development from 2000 to 2014. It reviews progress towards meeting the requirements of the air quality directives. An overview of the latest findings and estimates of the trends in concentrations, the effects of air pollution on health and its impacts on ecosystems are also given.

http://www.eea.europa.eu/publications/air-quality-in-europe-2016

National monitoring, reporting and evaluation of climate change adaptation in Europe (Technical report No 20/2015)

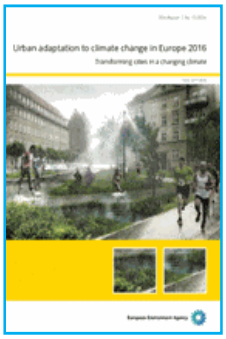
by European Commission, 2015.

This report provides new insights into adaptation monitoring, reporting and evaluation systems at the national level in Europe and constitutes the first attempt to consolidate emerging information across European countries. It aims to offer reliable and targeted information to support the effective and efficient implementation of climate adaptation policies and actions at the national level in Europe.

http://ec.europa.eu/health/healthy_environments/docs/2015_guidelines_healthy-environments_eu_schools_en.pdf

Urban adaptation to climate change in Europe 2016 — Transforming cities in a changing climate (EEA Report No 12/2016)

by EEA (European Environment Agency), 2016.



This report builds on and complements existing products and initiatives on urban adaptation in Europe. It focuses on the state of actions in the field and progress achieved since the first EEA report in 2012, and it considers this analysis in relation to current challenges: Do existing actions lead to attractive, climate-resilient cities and if not, what needs to be changed? The report aims to broaden perspectives and provide input to a review and subsequent adjustment of urban adaptation to climate change by local governments and by supporting regional, national and European institutions, researchers and other relevant stakeholders.

http://www.eea.europa.eu/themes/urban

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2017

24th International Conference on Modelling, Monitoring and Management of Air Pollution - Air Pollution 2017
25–27 April, Cadiz, Spain. http://www.wessex.ac.uk/conferences/2017/air-pollution-2017?utm_source=wit&utm_medium=email&utm_campaign=air17cfp&uid=%25REALNAME%25

6th International Symposium on Ultrafine Particles
10–11 May, Brussels, Belgium. http://ufp.efca.net/

ICAPC 2017: 19th International Conference on Air Pollution and Control
25–26 May, London, United Kingdom. http://waset.org/conference/2017/05/london/ICAPC

110th Annual Conference & Exhibition: Bridging Environment Energy & Health
5–8 June, Pittsburgh, Pennsylvania, USA. http://www.awma.org/events-webinars/upcoming-events/ACE2017/about-the-conference

21th ETH-Conference on Combustion Generated Nanoparticles
19–22 June, Zürich, Switzerland. http://www.nanoparticles.ch/

Healthy Buildings 2017 Europe
2–5 July, Lublin, Poland. http://www.hb2017-europe.org/

29th Conference of the International - Society for Environmental Epidemiology
24–28 September, Sydney, Australia. http://www.iseepi.org/Conferences/future.htm

Air Protection 2017 - 10th Scientific and Professional Conference
3–7 October, Primosten, Croatia. http://www.huzz.hr/

4th World Conference on Climate Change - Updating our Understanding: Earth's Climate is Warming
23–25 October, Milan, Italy. http://climatechange.conferenceseries.com/