Environmental Health Indicators Programme New Zealand, Massey University, Wellington

December 2017 **Volume 13**

In this issue:

Barry's Blurb

Welcome to the latest issue of the EHI newsletter.

As you will see, the team continue to be involved in a number of exciting developments and projects:

For example, our data visualization website CPHROnline underwent a major update and can now be found under its new name Healthspace (see page 3).

Also, electric vehicles were added to our motor vehicles indicators (see page 5) and work on new air quality indicators is underway .

We ran a productive one week course to train two staff from the Malaysian Ministry of Health in the development of an environmental health indicators programme (see page 8).

Members of the team presented their work in a successful PhD confirmation (see page 6) at the 3-Minute-Thesis Massey University finals (see page 7) and at a GIS conference in Christchurch in December (see page 9).

On behalf of the EHI team, I want to wish you and your whanau all the very best for a very happy Christmas and New Year. We are looking forward to continuing our collaboration and sharing our new initiatives with you in 2018.

b.borman@massey.ac.nz

You can find us online here:

www.ehinz.ac.nz

Healthspace

EHINZ@EHI_NewZealand

Environmental Health Indicators - New Zealand

Highlights from the EHI factsheets

The following table focusses on the key highlights from our recently updated or newly developed EHI factsheets. All factsheets can be downloaded as a PDF from our website www.ehinz.ac.nz.

Please contact Allan Schori (A.Schori@massey.ac.nz) if you need more information.

Topic	Highlights
Number and density of livestock	• Total livestock numbers dropped by 21 percent from 2002 to 2015, mostly due to a decrease in sheep numbers. • In 2016, Manawatu-Wanganui had the highest livestock density (277 animals per square kilometre) among all regions in New Zealand.
Number and density of dairy cattle	• Dairy cattle numbers decreased from 6.7 million in 2014 to 6.5 million in 2015. This is the first drop in numbers since 2005. • In 2016, Waikato had the highest density of dairy cattle (78 animals per square kilometre) among all regions in New Zealand.
Average age of vehicle fleet	• The average age of light passenger vehicles in New Zealand has increased to 14.4 years in 2016. • In 2016, 39 percent of the light vehicle fleet was 15 years or older. • Older cars tend to release more harmful vehicle emissions.
Number of vehicles in New Zealand	• In 2016, there were almost 4.0 million vehicles in New Zealand—the highest number ever. • In 2016, there were 774 light vehicles per 1,000 people in New Zealand. • In the second quarter of 2017, there were over 2,600 pure electric and over 1,200 plug-in hybrid vehicles in the New Zealand motor vehicle fleet.
Hazardous substances notifications	• There were 104 hazardous substances notifications in 2016, compared to 61 notifications in 2015 • The majority of notifications were from unintentional exposures.
Lead absorption notifications	• There were 106 lead absorption notifications in 2016, compared to 121 notifications in 2015 • Lead-based paint was the most common source of non-occupational or unknown lead exposure for both children and adults.
Road traffic injury hospitalizations	• Traffic injury hospitalisations have decreased from 2000 to 2015. • Motorcyclists and cyclists were at a higher risk of traffic injury hospitalisations per time spent travelling.
Road traffic injury mortality	• The number of traffic deaths has decreased substantially from 1990 to 2015. • Males, young people aged 15-24 years, Māori and people living in more deprived areas had higher mortality rates from traffic injury.
Melanoma registrations **Melanoma deaths** **Non-melanoma skin cancer deaths**	• These factsheets show that skin cancer continues to have a sizeable burden in New Zealand. In 2015, there were 2,423 melanoma registrations, while in 2014, 376 New Zealanders died from melanoma and a further 145 people died from non-melanoma skin cancer.

Healthspace

cphr | Online

changed to.....

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healthspace

Over the past few weeks the EHI team and our software consultant have been busy rebranding CPHROnline to **healthspace**. Home pages, landing pages and maps now sport a new, green, colour palette that reflects the EHINZ brand. We also have a new name **healthspace** giving a clear description of the purpose of the website – to enable health data to be visualised at a range of geographical levels.

The new domain name: healthspace.ac.nz went live on 6 November 2017. From this date, the cphronline.massey.ac.nz web address automatically relocated to healthspace.

With the exception of a new name and new colour palette **healthspace** will operate in exactly the same way as CPHROnline, however we do have some exciting new additions to the site:

- A 'How healthy is your DHB?' atlas that provides DHB level data on common health conditions.
- A new dual geography double map for the EHI Atlas that allows TA and DHB level data to be viewed alongside each other.
- The Alcohol Related Harm atlas is publically available for the first time.

If you have any comments or queries, please get in touch with Caroline Fyfe (c.s.fyfe@massey.ac.nz).

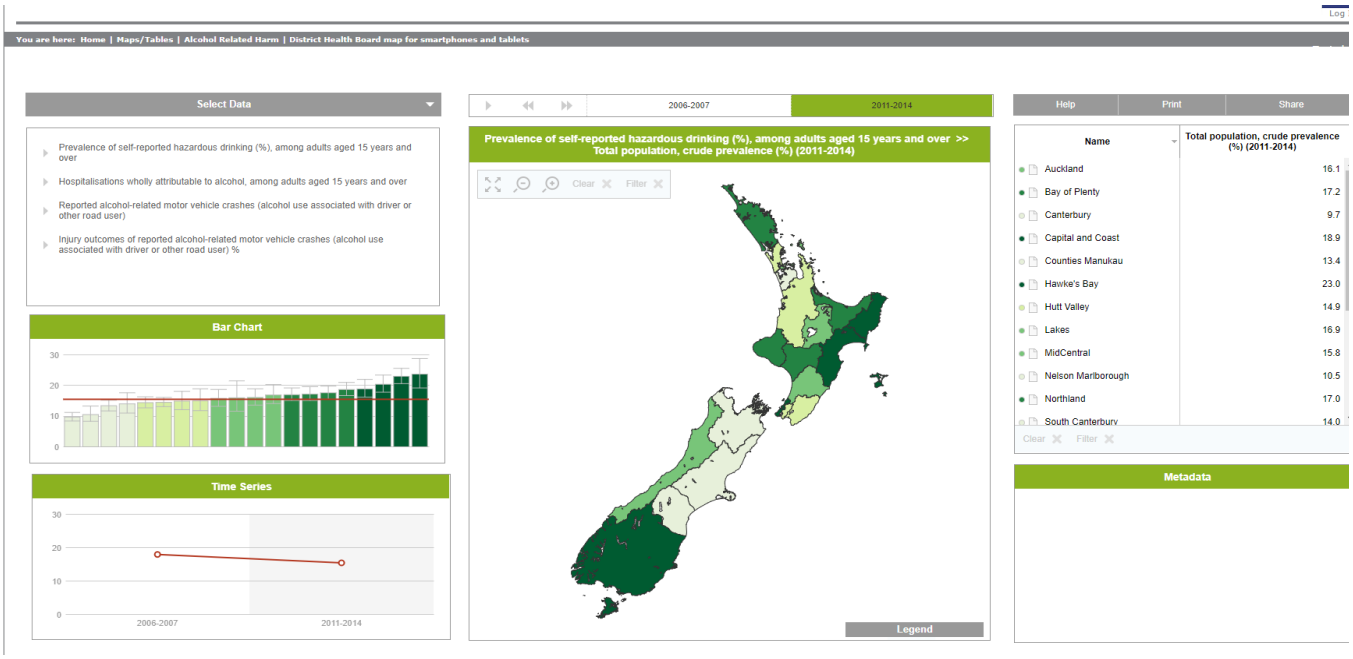
Healthspace

- **The Alcohol Related Harm** atlases and profiles are now all **publicly available**. The indicator set collects together information on alcohol-related harm, covering harms to drinkers and other people, along with harmful alcohol use and the alcohol environment associated with alcohol-related harm.

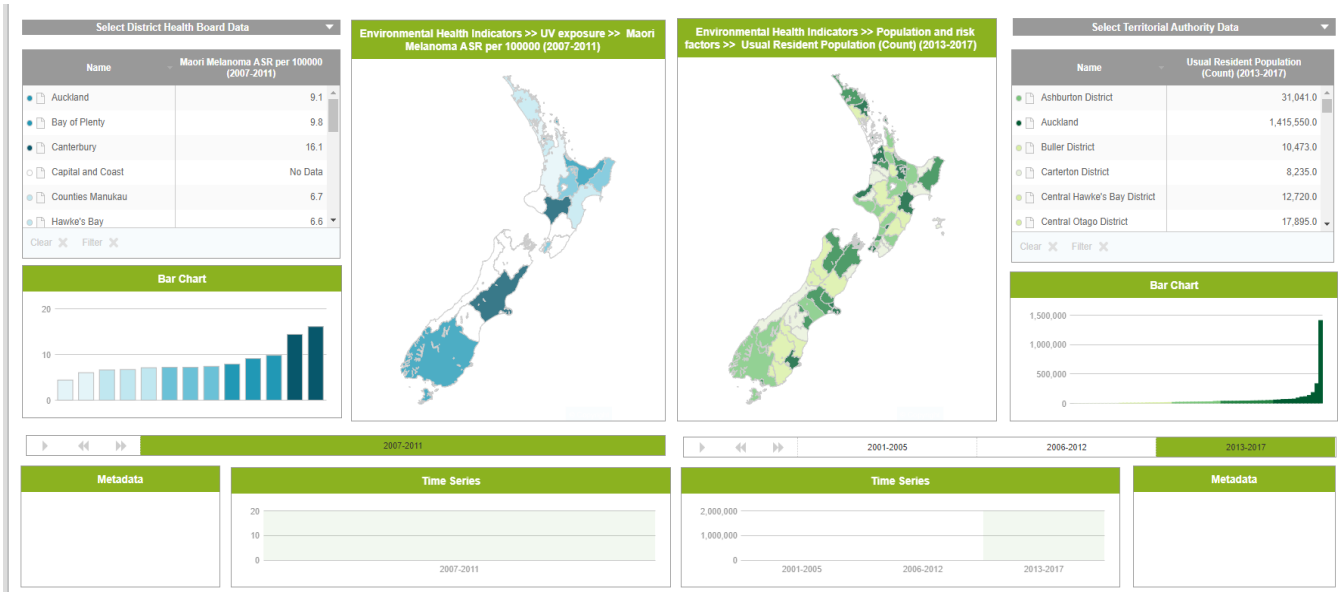
The available indicators are:

- Prevalence of hazardous drinking
- Hospitalisations wholly attributable to alcohol
- Alcohol-related motor vehicle crashes
- Injury outcomes of alcohol-related motor vehicle crashes
- Alcohol licence density and counts

These indicators are based on the work of the Alcohol Harm Reduction Indicators Work Group, South Island Public Health Partnership.



- There's also a new dual geography double map for the EHI Atlas that allows TA and DHB level data to be viewed alongside each other



Indicator Update: Motor vehicles

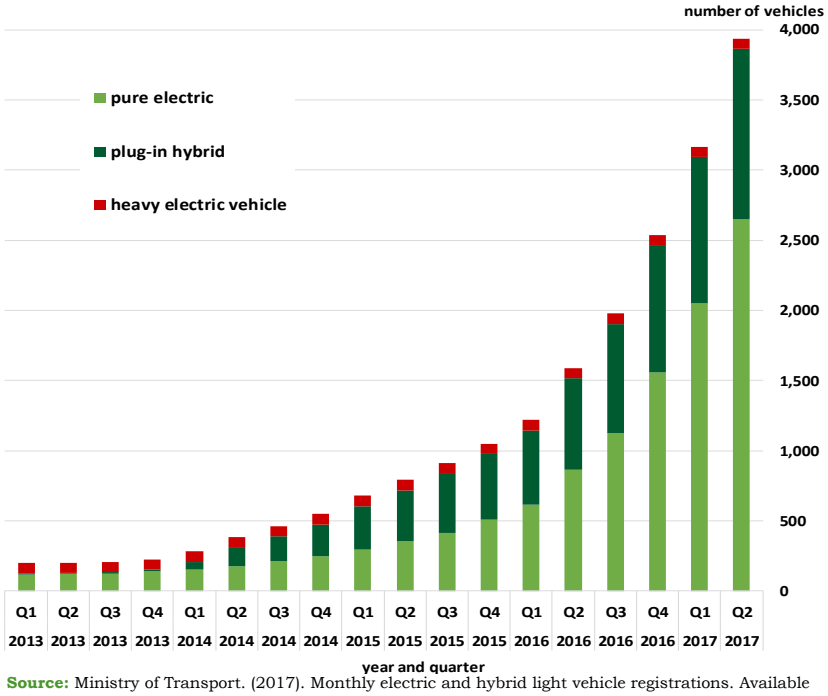
The indicator 'Number of motor vehicles in New Zealand, by vehicle type and fuel type' now includes electric vehicles (pure electric and plug-in hybrid vehicles). This indicator is presented under the air quality and transport domain. You can read more on our website or download the factsheet.

The electric vehicle fleet in New Zealand mainly comprises light vehicles. In the second quarter of 2017, there were 2,648 pure electric and 1,124 plug-in hybrid vehicles in the New Zealand motor vehicle fleet. These numbers have been rapidly increasing since the first quarter of 2013 (118 pure electric vehicles and 6 plug-in hybrid vehicles).

Light electric vehicles are increasingly becoming a larger proportion of light vehicle registrations. The majority of electric vehicle registrations were used imports. In August 2017, used light electric vehicles accounted for 1.53 percent of all used light registrations, compared to 0.03 percent in January 2014.

In the second quarter of 2017, Auckland (1.42 electric vehicles per 1,000 population) and Wellington (1.15 electric vehicles per 1000 population) were the cities with the most electric vehicles per 1,000 population.

Figure 1: Number of electric vehicles (pure electric, plug-in hybrid and heavy electric vehicles) in New Zealand, 2013 (quarter one) to 2017 (quarter two)



Source: Ministry of Transport. (2017). Monthly electric and hybrid light vehicle registrations. Available from http://www.transport.govt.nz/research/newzealandvehiclefleetstatistics/

Indicator Update: Indoor Environment

The We published the following new indicators in the Indoor Environment domain; asthma, lower respiratory tract infections, meningococcal disease, SUDI, the health burden due to second-hand smoke, and maternal smoking at two weeks after birth. These indicators complement the existing indicators on household crowding, second-hand smoke exposure in the home, and cold and damp houses.

Key findings from this domain include:

- In 2013, approximately 366,000 New Zealanders lived in crowded households , approximately 150,000 New Zealanders were exposed to second-hand smoke in their home, and almost 45,000 homes had no source of home heating.

Household crowding rates had decreased since 1991. Rates of second-hand smoke exposure had almost halved from 2006/07 to 2012/13. However, the number of houses without home heating had increased from 33,200 homes in 2006.

- In 2016, there were 6,271 hospitalisations for asthma for children aged 0-14 years. The asthma hospitalisation rate had increased since 2001.
- In 2015/16, approximately 132,000 children aged 2–14 years had medicated asthma. The asthma rate had increased from 14.0% in 2011/12 to 16.6% in 2015/16.
- In 2016, there were 9,262 hospitalisations for lower respiratory tract infections in 0-4 year olds. The hospitalisation rate had increased since 2001.
- In 2014, 45 children aged under one year old died from SUDI. Since 2000, the SUDI rate has decreased considerably, although it increased slightly from 2012 to 2014.
- In 2010, an estimated 104 people died due to second-hand smoke exposure in New Zealand.
- There were large differences in indoor exposures and related health effects. In general, Māori and Pacific children, and children living in the most deprived areas, were the most exposed to the indoor exposures, and also had a much higher health burden. There were considerable differences by District Health Board as well.

You can read more on our website

Funding Success: Natural Hazards Research Platform

The EHI team has been awarded a grant from the Natural Hazards Research Platform (NHRP) to carry out a 2-year study to develop social vulnerability indicators for flooding in New Zealand. We will use Porirua City as a case study to test these indicators and their application.

This project will enhance our understanding of the factors that make people vulnerable to the impacts of floods in New Zealand. It will also provide important information for national, regional and local government planners and district health board emergency managers.

The NHRP is funded by the Ministry of Business, Innovation and Employment (MBIE) and is aimed to increase New Zealand's resilience to natural hazards through high quality collaborative research.

Successful PhD confirmation

Congratulations to Caroline, who passed her PhD confirmation "An investigation into the long-term impact of retrofitting home insulation on the health of residents" in August.

Project Summary:
The Warm Up New Zealand (WUNZ) insulation subsidy programme was introduced by EECA (Energy Efficiency & Conservation Authority) in 2009 to provide "warm, dry and more energy efficient homes". A 2012 cost-benefit analysis of the programme attributed 99% of total benefits to improved health. The aim of this project is to determine whether recipients of insulation through WUNZ experienced a change in the frequency and severity of cold-related ill-health as a result of insulation being retrofitted into their homes.

Caroline was also recently awarded a PhD travel grant to attend a GIS conference in Christchurch.

For more information about this project, please contact Caroline Fyfe (c.s.fyfe@massey.ac.nz)

3-Minute-Thesis Presentation

Congratulations to Rose, who presented her Master's Thesis topic at the Massey University 3 Minute Thesis Masters Finals in Palmerston North. You can watch a video of her presentation here.

Project Summary:
Given the contribution of mental illness to the disease burden in New Zealand, it is important to evaluate potentially amenable aspects of neighbourhood environments which might reduce this burden. As a result, her thesis seeks to establish a connection between the built environment and health, by exploring the relationship between neighbourhood walkability and depression in adolescents.

This will be achieved by developing a walkability index, which will consist of six elements:

- Household density
- Intersection density
- Land use mix
- Proximity to green space
- Traffic volumes

For more information about this project, please contact Rosemary Mwipiko (r.mwipiko@massey.ac.nz).

National hazardous substances and lead report for 2016

In July, we released the 2016 national report on hazardous substances and lead notifications using data from the Hazardous Substances Disease and Injury Reporting Tool (HSDIRT). This is the fourth report of the series. Read the full report here.

Below are some key findings from the report:

Lead notifications

- There were 106 lead absorption notifications in 2016, compared to 121 notifications in 2015.
- There were six non-occupational/unknown lead absorption notifications for children under 15 years.
- Wairarapa DHB had the highest rate (16.1 per 100,000 population) of lead notifications in 2016. In 2015, Taranaki DHB had the highest rate of lead notifications.
- Painters (29 notifications) were the occupation most exposed to lead in 2016.
- Lead-based paint was the most common source of non-occupational/unknown lead exposures for both children and adults.

Hazardous substances notifications

- There were 104 hazardous substances notifications in 2016, compared to 61 notifications in 2015
- Eight of the notifications in 2016 were for children under five years old.
- Seventy-seven percent (80 notifications) of hazardous substances notifications were unintentional exposures.
- Industrial chemical was the most common substance category (46 notifications).
- Household chemicals (e.g. washing powder, oven cleaner) were the most common cause of injury for children under 5 years old.

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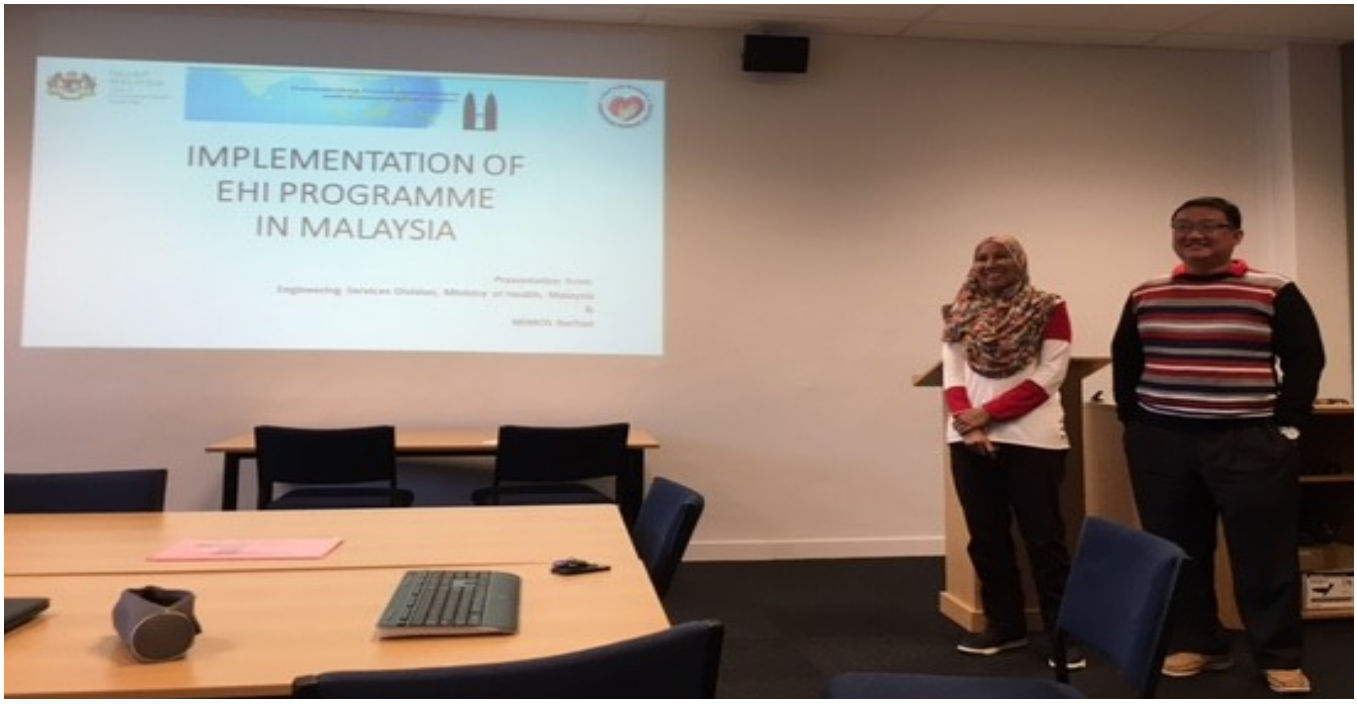
hsss
Hazardous Substances Surveillance System

For more information regarding HSDIRT and its reports, please contact Helene Marsters (t.h.marsters@massey.ac.nz).

Malaysian Training Week

During the first week of October we ran a one week course on the development of an environmental health indicators programme for two professionals from the Malaysian Ministry of Health. Presentations from the EHI team covered how to develop indicators and communications strategies, data visualisation and collection methods, natural hazards, alcohol related harm, climate change and transport.



From left to right: Dr Seah Boon Keong, Zairul Ain Binti Zulkaflli

In addition to presentations from the EHI team, Dr Seah Boon Keong and Zairul Ain Binti Zulkaflli concluded their training by summarizing what they'd learnt and would be implementing in their EHI programme in Malaysia.

From left to right: Seah Boon Keong, Zairul Ain Binti Zulkaflli, David Briggs, Kirstin Lindberg, Yuliya Evdokimova, Carolin Haenfling, Rose Mwipiko, Kylie Mason, Caroline Fyfe, Helene Marsters, Mathu Shantakumar, Barry Borman

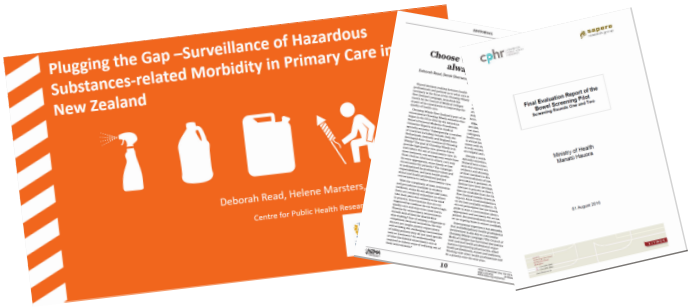
Publications

- Matheson A, Walton M, Gray R, Lindberg K, Shanthakumar M, Fyfe C, Wehipeihana N, Borman B. (2017). *Evaluating a community-based public health intervention using a complex systems approach.* Journal of Public Health, https://doi:10.1093/pubmed/fdx117

  Read more here.

- Environmental Health Indicators Programme. (2017). *National Hazardous Substances and Lead Notifications. Annual Report 2016.* Wellington: Centre for Public Health Research, Massey University.

  Read more here.



You can keep up-to-date with our publications by checking our website or following our Facebook and Twitter accounts.

Conference Presentations

NZ College of Public Health Medicine Annual Scientific Meeting	September, Wellington	Keynote Speaker: Deborah Read
Geospatial Research Conference	December, Christchurch	Speakers: Caroline Fyfe and Rosemary Mwipiko

Teaching and Training

The EHI team contributes to the College of Health's undergraduate and postgraduate teaching in:

- Epidemiology
- Biostatistics
- Environmental Health
- Health Analytics

The Centre for Public Health Research (CPHR) is also an accredited Public Health Registrar Training site.

Welcomes, Goodbyes and Congratulations

Fei Xu

Fei is an Analyst, who worked with the EHI team on Hazardous Substances. We wish her all the best at her new job!

Carolin Haenfling

Carolin has given birth to a healthy baby boy and will be away on Maternity leave. We wish her the best and look forward to welcoming her back to the EHI team.

Allan Schori

Allan will be covering for Carolin while she's away on maternity leave.

Geoffrey Donovan

Geoffrey is an economist with the USDA Forest Service. He is currently on sabbatical at CPHR and has joined the EHI team.

EHI team

Greetings from the team at the EHI Programme.

We are wishing you and your whanau all the very best for a very happy Christmas and New Year.

Barry Deborah Kirstin Kylie Geoffrey Riz Steve

Caroline Helene Mathu Carolin Rosemary Yuliya Allan

Special Issue Announcement: IJERPH

Special Issue of *International Journal of Environmental Research and Public Health*:
"Environmental Health Indicators for Policy Support"
Deadline for manuscript submission: **15 February 2018**
For more information, please see below flyer or visit the website.

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Special Issue

Environmental Health Indicators for Policy Support

Guest Editors:

Prof. Dr. David Briggs
Emeritus Professor, Department of Epidemiology & Biostatistics, School of Public Health, Imperial College London, London W2 1PG, UK

d.briggs@imperial.ac.uk

Prof. Dr. Barry Borman
Director, Environmental Health Indicators Programme, Massey University, PO Box 756, Wellington 6140, New Zealand

B.Borman@massey.ac.nz

Deadline for manuscript submissions:
15 February 2018

Message from the Guest Editors

The concept of environmental health indicators (EHIs) has been with us for more than a quarter of a century now, however, they have not always been subjected to the levels of scientific scrutiny and evaluation that they merit. This Special Issue is intended to address this gap. Its aim is to bring together experience in the field and set a benchmark for future EHI development. In this context, contributions are particularly invited that:

1. Review recent developments in, and applications of, EHIs and elicit the lessons that can be learned from them;
2. Analyse the role of EHIs in evidence-based policy on environment and health, the implications of using them, and the impacts they have had;
3. Reflect on the underpinning science relating to EHIs, and the issues that still need to be addressed;
4. Explore relationships between EHIs and other policy tools—e.g. risk assessment, health impact assessment, risk communication
5. Examine the potential for using EHIs in new and more targeted ways—e.g. in relation to vulnerable groups, or to address emerging public health issues.

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St. Alban-Anlage 66, 4052 Basel, Switzerland
Tel. +41 61 683 77 34, Fax: +41 61 302 89 18

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Contact: A.Schori@massey.ac.nz or r.mwipiko@massey.ac.nz

Our mailing address is:

Centre for Public Health Research, Block 3, Level D, Entrance B, Wallace Street, Mount Cook, Wellington 6021, New Zealand