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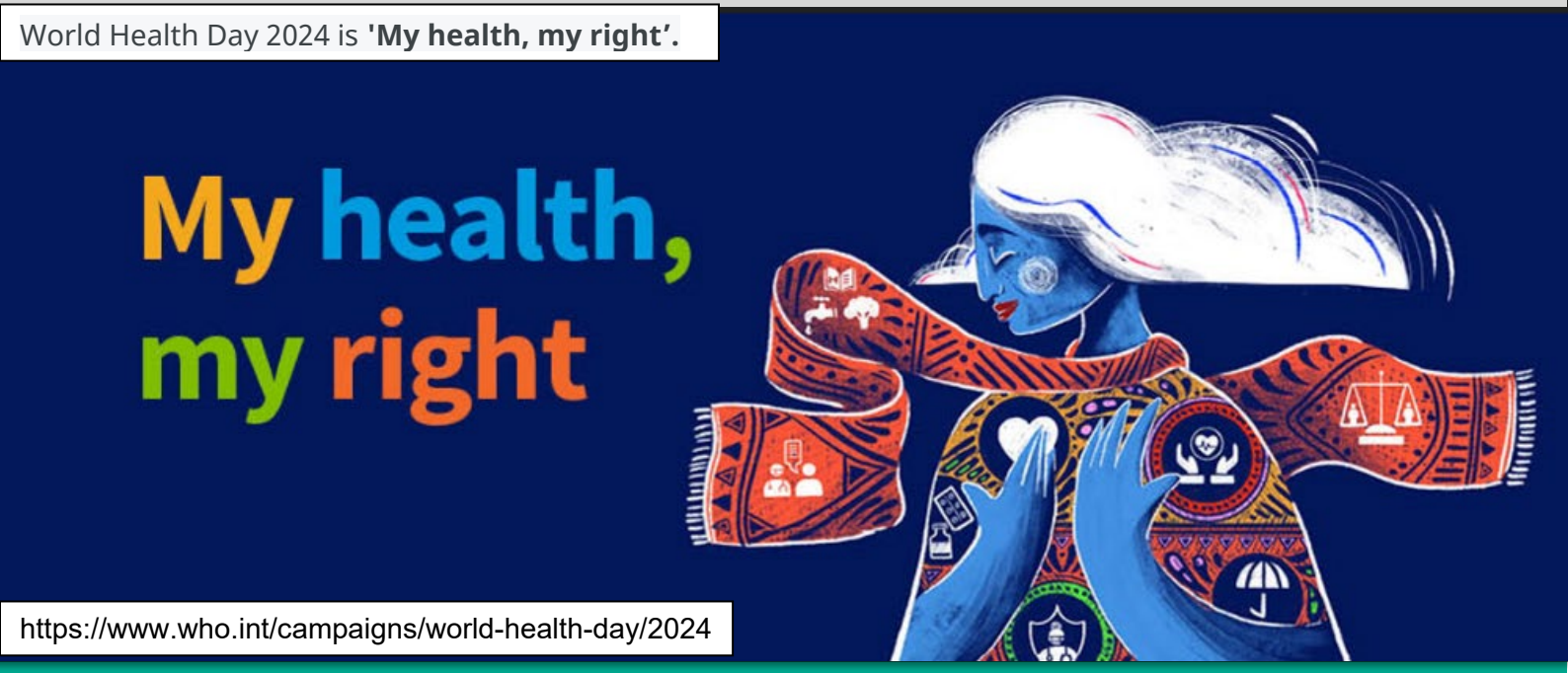
ENVIRONMENTAL HEALTH IN THE NEW ERA

World Health Day 2024 is **'My health, my right'.**



https://www.who.int/campaigns/world-health-day/2024

The Federation works to disseminate knowledge concerning environmental health and promote co-operation between countries where environmental health issues are trans-boundary. It promotes the interchange of people working in this sector and the exchange of Member's publications of a scientific and technical nature. Amongst other things, the Federation seeks to provide means of exchanging information and experience on environmental health, to hold Congresses and meetings to discuss subjects relevant to environmental science health and administration, to represent the interests of environmental health to state agencies, national governments, and international organizations and to promote field studies of environmental health control.

INTERNATIONAL FEDERATION OF ENVIRONMENTAL HEALTH (IFEH)

BOARD OF DIRECTORS:

Contents

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Front cover photos

IFEH World Congress committee

WHO Campaign assets from https://www.who.int/campaigns/world-health-day/2024 **(accessed 1 May 2024)**

WCEH PERTH AUSTRALIA

17th World Congress on Environmental Health
20-24 May 2024

Pan Pacific Perth • 207 Adelaide Terrace • WCEH2024perth.com

ENVIRONMENTAL HEALTH IN THE NEW ERA

PRELIMINARY PROGRAMME

The Preliminary Programme is showcasing the diversity of the environmental health profession across the globe. You can check out all of the speakers' abstracts and bios by clicking here.

4 REASONS WHY SHOULD YOU ATTEND

Conferences provide a dynamic platform for networking and learning while surrounded by like-minded professionals.

1. ***NETWORKING***: This will provide an opportunity to network with peers in the environmental health profession. You can meet new people, exchange ideas, build valuable relationships and forge meaningful connections with like-minded professionals.

2. ***EXPAND YOUR KNOWLEDGE***: Gain valuable insights from industry experts.

3. ***GAIN INSIGHT INTO EMERGING ISSUES***: Conferences provide insights into the latest trends and innovations. By attending conferences, you can stay up to date with the latest advancements and techniques, which can help you stay ahead of the curve.

4. ***SHARE YOUR EXPERIENCES***: This is a great opportunity to showcase your expertise and build your reputation as a leader. By presenting your work or participating in panel discussions, you can demonstrate your knowledge and experience to your peers.

We look forward to seeing you there!

MEET SOME OF THE KEYNOTE PRESENTERS:

The Hon. Reece Whitby MLA

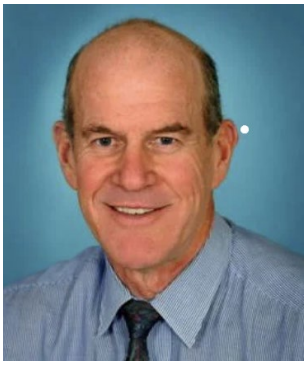
Minister for Energy; Environment; Climate Action

Mr Simon Millman

State Member for Mount Lawley and Parliamentary Secretary to the Hon. Amber-Jade Sanderson MLA,
Minister for Health; Mental Health

Dr Jesse Bliss

National Environmental Health Association



Professor Peter Le Souëf

The University of Western Australia

The World Congress Programme includes workshops and tours.

IFEH President Elect – DR. BRUNO CVETKOVIC

It will be my honour to accept the appointment as President IFEH at the upcoming World Congress on Environmental Health to be held in Perth. I would like to take this opportunity remind you of the goals and visions I shared in my last address.

Please see this as a call to action for all EH practitioners all over the world. We all need to work together to lead IFEH into a more prominent and sustainable position. We will talk more on this in Perth and beyond. Keep an eye out for the 'Congress Edition.'

1. **Global Collaboration**: Continue to foster collaboration and partnerships with WHO, environmental health organizations, government agencies, and NGOs worldwide. Encourage knowledge sharing and best practices to address global environmental and public health challenges.
2. **Advocacy and Policy**: Advocate for stronger environmental and public health policies and standards at the international level. Work with governments and policymakers through our members to develop and implement regulations that promote a healthier and more sustainable environment.
3. **Education and Training**: Focus on providing high-quality education and training programs in the field of environmental health and to revive our Environmental Health Disaster Management Course. This can help raise the professional standards of environmental health practitioners and ensure that they are well-equipped to address emerging issues.
4. **Research and Innovation**: Support and promote research in environmental health to better understand environmental risks and develop innovative solutions. Strengthen our connections with Academic Associate Members. Embrace technological advancements and data-driven approaches to address environmental challenges.
5. **Public Awareness**: Raise public awareness about the importance of environmental health and how individuals can contribute to a cleaner and safer environment. Engage in outreach and educational campaigns. Promotion of WEHD 26th of September.
6. **Sustainability**: Lead by example by adopting sustainable practices within the organization and encouraging sustainability efforts in member countries (SDG's). This could include reducing the carbon footprint, minimizing waste, and promoting environmentally responsible practices.
7. **Diversity and Inclusion**: Promote diversity and inclusion within the organization and the field of environmental and public health. Encourage underrepresented groups to participate and contribute to the mission of IFEH.
8. **Response to Emerging Issues**: Be flexible and adaptive in addressing new and emerging environmental health issues, such as climate change, pandemics, and other global challenges.
9. **Capacity Building**: Help countries with limited resources build their capacity in environmental and public health, sharing knowledge and resources to improve conditions in underserved regions.

10. **Evaluation and Reporting**: Regularly evaluate the organization's activities and report on the impact of its initiatives. Transparency and accountability are crucial for maintaining trust and support.

IFEH Honorary Editor + IFEH Honorary Treasurer –
Dr ANDREW MATHIESON

At a recent Board of Directors (BOD) meeting, it was agreed to recommend to Council that IFEH renews its longstanding arrangement with the International Journal of Environmental Health Research (IJEHR) a highly cited journal from Taylor and Francis. More details of the agreement will be published once Council meets to discuss and hopefully approve this matter.

https://www.tandfonline.com/toc/cije20/current

If approved, the renewed agreement will see the IFEH logo return to the front of the Journal and allow for news and other relevant items to be published in the Journal on behalf of IFEH.

As HON Editor I am in discussion with a major publisher to see if they also wish to work with IFEH and its members. We are in early discussion on developing a new 'theory and practice of environmental health - the global perspective.' If you are interested in being a chapter or thematic editor, please let me know. EOI to me by 1 June 24 outlining what you can contribute.

I am also looking for a Deputy Editor (non-board/non-voting) to help the small editorial board and myself by managing calls for articles/adverts and putting together the material in a form that I can easily edit. The time required is less than half a day a month. The position is voluntary, but you will be encouraged to develop your own themes (research/practitioner or news matters). EOI to me by 1st June 2024.

P.S. Please let me know of any errors in this magazine and I will correct them.

As HON Editor and HON Treasurer, I am all looking forward to the new ideas and leadership from the new President. Bruno has published a great list of vision / goal statements we all need to read, adjust, and work smartly to implement.

Our accounts have been signed off and are being presented to Council for scrutiny. We also have an ambitious budget again for scrutiny by Council. With Councils support, and under Brunos leadership, the BoD hopes to revitalise its operational and strategic plans. Part of this will involve revitalising the existing WebSite. Please take the time to read the HON Treasurers report (which will be presented to Council) and if approved published on the website.

Our members have had a challenging time, and some have yet to pay. BoD is willing to consider any application for financial relief as we feel its more important to retain members rather than lose them. If your organisation is struggling to pay, then please email HON Treasurer and we will look at a plan together.

Our website is a little dated, but it is clean, functional and delivers what most members want/need. With the support of Council, we hope to migrate to a new wordpress based website by the end of 2024. Do not expect 'miracles' as we cannot afford them. Remember we are a membership site run by volunteers. However, we will improve function, keep existing records, make the pages more modern, improve navigation and also look to introduce some enhancements. So, if you are an experienced web person, please share your ideas with our webmaster Henning, so we can look at costs and priorities when we are planning the changes in 2024. We are also seeking representatives with a more diverse background (young / retired / female etc), who want to run their own pages either with a regional, cultural or specialist theme.

Chair International Environmental Health Faculty Forum (IEHFF)

PROFESSOR ANNE ROIKO

“Educational challenges and strategies for “futureproofing” Environmental Health graduates”

I am excited to extend a warm invitation to all environmental health educators to a half-day workshop and meeting of the 2024 International Environmental Health Faculty Forum (IEHFF). As passionate educators and advocates for environmental health, this event promises to be an enriching experience where we can share knowledge and ideas, plan collaborations, and inspire one another.

Event Details:
Date and Time: May 21st, 2024, 1-5pm
Location: Board room, Pan Pacific Hotel, Adelaide Terrace, Perth
In Conjunction with: The 17th World Congress on Environmental Health by the International Federation of Environmental Health (IFEH)

About IEHFF: The IEHFF is an association of faculty engaged in the education of Environmental Health Practitioners in recognized institutions of higher education worldwide. Our purpose is to provide a forum for the exchange of information, fostering discussions on Environmental Health curricula, teaching methods and other areas of common interest. This includes discussing how we can respond, as educators, to emerging challenges and exciting opportunities.

This year’s theme and why you should attend?
Preparing environmental health graduates to thrive in a rapidly changing world requires addressing both current challenges and future, less certain needs. As environmental health educators, we are responsible for shaping the knowledge, skills, and qualities of our graduates to respond, not only to current and emerging threats, but also to the expanding opportunities offered by new technologies and new partnerships.

Our understanding of the nature, scope and complexity of environmental health issues is changing. The scientific knowledge base about how current and emerging environmental health threats are directly linked to or exacerbated by climate change continues to expand and highlights the importance of complex systems thinking.

Meanwhile, the “One Health” paradigm challenges us to broaden the scope of our knowledge and professional practice to join the coalition of professionals responding to the multi-dimensional threats posed by antimicrobial resistance.

We now have access to new types of data from fields such as genomics and epigenetics and new technologies for linking and modelling all types of geospatial and time-series data, opening

new avenues for rapidly detecting, assessing, and managing environmental health issues.

How can we best prepare our environmental health graduates to become part of a bold and adaptive larger public health workforce to catalyse action to achieve a more sustainable and equitable future by 2030?

If you would like to engage in discussions around these types of topics and to become involved in the strategic planning for the IEHFF, join us on the 21st May.

IEHFF – Educator's Workshop 1-5pm Tuesday 21st May. 2024

Agenda

- Welcome and introduction to the Faculty Forum
- Panel discussion – "Challenges for future-proofing the Environmental Health Profession"
- Discussions in breakout groups and reporting back: "What critical qualities/attributes (including knowledge, skills, and qualities) will future graduates need?
- Discussions in breakout groups and reporting back: How can Environmental Health Educators best respond? (including how IEHFF can facilitate this?)
- Wrap up/summary of consensus points and suggestions of a way to continue the discussion going forward.
- Strategic planning for the Faculty Forum – facilitated discussion with polling technology
- Suggestions for a "Vision statement" going forward
- Key aspirations of members (including for website development)
- One solid idea for a collaborative project for 2024

How to register your interest
Please email me on a.roiko@griffith.edu.au – with IEHFF-2024 in the subject line please. I will add you to the list to get further updates, including a link to participate online if you can't come in person.

Prof. Anne Roiko – Chair of the IEHFF

Henning Hansen EnviNa – IFEH Webmaster & Euro Chairperson

I am the recently appointed Chairperson of IFEH Europe Region as well as longstanding webmaster and Chair IFEH Disaster Risk Reduction (DRR) Committee. As a former IFEH President I retain the title Hon Vice President.

IFEH Hon Editor/Treasurer (Andrew) has mentioned some of the proposed changes in our web which I hope you agree are overdue. I thought I would use my time to write a brief update on the IFEH DRR Committee.

I represented IFEH in 2016 and part of this work resulted in a formal Science and Technology partnership between IFEH and United National Office for Disaster Risk Reduction (UNDRR).

The mission of the IFEH Disaster Risk Reduction Committee is to promote and facilitate engagement in all IFEH Regions and to promote co-operation between EH professionals and the Scientific Communities and to distribute information about DRR and to do so in partnership with international bodies as the UNDRR (United Nations Office for Disaster Risk Reduction) and ISC (International Science Council). The IFEH DRR Committee is chaired by Hon IFEH Vice President Henning Hansen, EnviNa Denmark. Following the publication of the UNDRR/ISC Hazard Information Profiles (HIPs) in October 2021 (and the UNDRR/ISC Hazard definition and classification review: Technical report published in 2020) Prof. Virginia Murray in her role as chair of the UNDRR/ISC Steering group by January 2024 invited the IFEH DRR Committee to participate in a survey to be used for a review to update the HIPs for relaunch at the Global Platform for Disaster Risk Reduction in 2025. The IFEH DRR Committee provided information for the survey and afterwards we have been invited to join special working groups preparing the specific updates of the HIPs.

Finally, a subgroup of the IFEH DRR Committee is preparing a draft IFEH Policy – Declaration on DRR and Environmental Health – to be presented and debated at the IFEH Council in Perth. The intention is to get the Policy approved in principle by the Council and that it is left to the BOD to conclude the final Policy. After the council meeting it is intended to send the draft for comments by all IFEH members and the whole IFEH DRR Committee after which the BOD can conclude on the final Policy.

Should you wish to know more please email me but first spend a little time looking at the great resources available on the UNDRR site https://www.undrr.org/

They have a great range of publications available at https://www.undrr.org/publications

In addition, they run a series of (mainly free) training courses https://www.undrr.org/our-work/training

Further links to SENDAI Framework and Sustainable Development Goals are provided to enrich your understanding. They also have a job page. If you get appointed let us know so we can work with you.

Looking ahead to 2024, UNDRR aims to capitalize on the momentum from this COP and the results of the Midterm Review of the Sendai Framework to accelerate action on disaster risk reduction at all levels.

UNDRR also engaged government and development partners on its new infrastructure resilience project, which will be rolled out in 2024, using the global methodology for infrastructure resilience reviews launched by UNDRR and the Coalition for Disaster Resilient Infrastructure at COP28.

Launches of new initiatives and products

- UNDRR was among the signatories to the COP28 Declaration on Climate, Relief, Recovery and Peace, which calls for action to build climate resilience in highly vulnerable countries and communities, particularly those threatened or affected by fragility or conflict, or facing severe humanitarian needs.
- UNDRR endorsed the Getting Ahead of Disasters Charter. The Charter's principles aim to enhance the use of finance to manage risks and protect people in the most vulnerable countries from climate-related disasters.

UNDRR also used the occasion to launch several knowledge products and reports.
This included the launch of the Global Methodology for Infrastructure Resilience Review. Developed by UNDRR and the Coalition for Disaster Resilient Infrastructure (CDRI), this first-of-its-kind methodology aims to help countries apply a holistic approach to infrastructure systems resilience. By using the methodology, countries can assess the current state of infrastructure resilience, identify areas for improvement and formulate an implementation plan.

Other products and publications launched at COP28:

- First report of the advisory panel of the Early Warnings for All Initiative to the United Nations Secretary-General
- Financial arrangements for addressing losses and damages
- Risk Media Hub
- Technical guidance on the application of climate information for comprehensive risk management
- Inclusive early warning early action: checklist and implementation guide
- Closing climate and disaster data gaps: New challenges, new thinking
- Designing a climate resilience classification framework to facilitate investment in climate resilience through capital markets
- Early warning systems and early action in fragile, conflict, and violent contexts: Addressing growing climate & disaster risks

IFEH @ COP28 Report

by IFEH Honorary Secretary: David Nemakonde

The IFEH Board of Directors took a decision to send two delegates to attend the COP 28 that took place in Dubai from 30 November to 13 December 2023. Both President-elect Bruno Cvetkovic and the Honorary Secretary (David Nemakonde) were registered as observers by United Nations Framework Convention on Climate Change.

The IFEH joined other international organisations including world leaders, civil society, business, Indigenous Peoples, and other different stakeholders negotiating to combat harmful impacts on the climate. On record, there were more than 97 300 delegates and 15 063 registered NGOs for the event, making this the biggest-ever COP.

On 30th November, the COP28 President, Dr. Sultan Al Jaber opened the event. In his speech, the COP28 President emphasized that even though there were some progresses since Paris Agreement, there is still a long road to the destination. He indicated that the new road starts with a decision on the Global Stocktake which is ambitious, correct course and accelerates action to 2030. He further reiterated that the COP28 plan of action is centred on four key pillars namely, fast-tracking the energy transition, fixing climate finance, focusing on people, live, and livelihoods, and underpinning everything with full inclusivity.

There were small pavilions allocated to Non-Government Organisations, exhibiting what they are doing, and people were able to visit them for further engagements. That was a good platform to network with the people and other organisations. Each organisation was given a period of three days, and it was unfortunate that as IFEH we were not aware of that opportunity.

Organisations were allowed to display banners and materials only at designated pavilions, and only with prior permission from the secretariat. Even though I was carrying the IFEH banner, I was only allowed to display it while taking pictures but not walking around displaying it as I was not permitted to do so.

The call on nations to transition away from fossil fuels was part of a decision by nearly 200 Parties on the world's first 'global stocktake' to ratchet up climate action before the end of the decade – with the overarching aim to keep the global temperature limit of 1.5°C within reach.

On the 3rd of December, the main focus was on health, relief, recovery, and peace. It was the first- ever deliberations on health since the inception of COP history, where issues affecting humanity's priorities were addressed. NGOs were represented by Dr Jennifer Miller from Global Climate and Health. Countries, financial institutions, and high-level leaders were mobilised to put human health at the centre of climate action. This generated a watershed moment for climate and health, convening a wide range of health professionals, and other civil society organisations. WHO in partnership with members of the Alliance for Transformative Action on Climate Change and Health (ATACH) continued promoting commitments to building climate resilient and sustainable low carbon health systems. Dr Jim Campbell advised the IFEH to engage with World Health Organisation via platform using the link: https://www.who.int/initiatives/alliance-for- transformative-action-on-climate-and-health. The

platform is open to ministries and organisation, and as IFEH, we will have to indicate what best we can offer to WHO in addressing issues affecting climate and health. He further indicated to us that most of the International Organisation used the platform as point of entry and they are now fully recognised as Alliance Partners.

Some of the resolutions that were taken on the day include:

- ✓ facilitating collaboration on human, animal, environment, and climate health challenges, by implementing a One Health approach.
- ✓ addressing the environmental determinants of health.
- ✓ strengthening research on the linkages between environmental and climatic factors and antimicrobial resistance.
- ✓ intensifying efforts for the early detection of zoonotic spillovers as an effective means of pandemic prevention, preparedness, and response.

BENEFITS TO IFEH IN ATTENDING CONFERENCE OF THE PARTIES.

a) In most cases when delegates were discussing matters affecting health at the side events, Environmental Health never formed part of the discussions, but the concentration was mainly on clinical issues and medical equipment. On that reason, IFEH, as the only body representing Environmental Health Professionals at international must continue to participate at the future conferences so that environmental health agenda can be included as part of discussion.
b) As there are several active NGOs who normally attend Conference of the parties and operate at different countries, most of them can be linked with the IFEH and National Associations and work together.
c) Some of heads of state and government do not understand the role played by Environmental Health Professionals and it is in this type of platform where the IFEH can campaign for the proper recognition of environmental health by the governments throughout the world.
d) There are many non-governmental organisations (NGOs) who have been actively involved, attending sessions, and exchanging views with other participants. This is the great opportunity in which NGOs, including IFEH, can be allowed to share vital experiences, expertise, information, and perspectives to be brought into the process to generate new insights and approaches.

WAY FORWARD

a) Encourage National Associations affiliated with IFEH to work closely with NGOs that are operating in their respective countries.
b) If possible, encourage National Associations affiliated to IFEH to send their members and join IFEH delegates in the future COPs, so that there can be more Environmental Health Professionals who can participate at different side events, make impact, and also have an opportunity to conduct awareness campaigns like other organisations.
c) Secure the pavilion for exhibition in the future COPs.
d) Network with other International NGOs and invite them to our World Congresses.


EXPO
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OF ENVIRONMENTAL HEALTH


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bit.ly/carbon-pricin


DEFEND


साक्षरता कार्यक्रम


EXPO
CITY

Created by Richard A Sprenger BSc (Hons), DMS, FCIEH, FSOFHT, FREHIS

Introducing the Highfield Manager in Charge Programme

50 years of promoting food safety as an enforcement officer, a director, a government adviser, author, trainer and chairman of a leading UK and international awarding body, has given Richard unparalleled experience within the industry. It is this insight that has led to the creation of the **Highfield Manager in Charge programme**.

The Highfield Manager in Charge (HMIC) programme offers a practical approach to food safety that is based on good international practice and built on 7 years of successfully implementing similar programmes in the Middle East and Asia. The programme provides the owner/board the tools to take responsibility for food safety without the need to rely on inspections by third parties to identify failings. It will assist in protecting profits and minimise the risk of food poisoning.

THE CHALLENGE

No food business wants to poison or injure its customers. Most food businesses train their food handlers and implement a range of food safety measures to reduce the risk.

Often businesses waste a great deal of money and create confusion among staff because they replace existing good practices with the latest fashionable food safety initiative, convinced by a third party that it will secure improved food safety standards. But, how many 'great' HACCP systems sit on a shelf on a manager's office gathering dust because they are impractical to implement?

Many organisations spend money on food and equipment suppliers, HACCP consultants, third party auditors, pest management, cleaning and disinfection and staff training. But, who within the business has the food safety expertise to ensure you receive value for money?

Depending on the size of the organisation there are various systems that provide some level of success. Codex HACCP and ISO 22000 are great food safety management systems for manufacturing, but are not ideal, or cost-effective, for many catering or retail operations.

HIGHFIELD'S SOLUTION

A pragmatic and practical approach!

The training of food handlers is essential. An internationally recognised level 2 qualification is a good start, but without the implementation of what they have learnt and without training managers to a higher level, you won't be getting value for money.

The HMIC programme will equip your appropriate managers with the knowledge and skills required to identify food safety issues, cover the principles of HACCP and effectively inspect all food storage, preparation, cooking and serving areas.

The benefits to the company are improved food safety, quick implementation and the appreciation of customers.

Deemed to Satisfy or Performance Solution – This is the Question

James Wood, Principal Consultant, SEAM Environmental

Onsite Wastewater management in Australia is based AS/NZS 1547:2012. State legislation calls in the standard and jurisdictions add guidelines to "clarify" specific design criteria. Deemed to Satisfy, also referred to as Acceptable Solutions are based on the more conservative criteria whereas performance criteria require a more detailed assessment of risk using the framework specified in AS/NZS 1547. Using the Deemed to Satisfy approach, the Design Loading Rate is based on soil type only and does not include other key site conditions such as slope, aspect, rainfall, and average temperatures. This leads to huge variations in design. Trying to fit this approach across Australia, with its wide variants in climate leads to either significant under design or massive over design. Regulators in Tasmania consider Engineers are suitable designers for performance solutions whereas environmental professionals, including EHOs with specific training in onsite wastewater assessment and design, are viewed as only suitable for Deemed to Satisfy solutions. This paper explores these variations and argues that such an approach is both limiting and costly.

Please contact the author for more information or to discuss the issues raised.

James Wood
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food water waste
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Certified Building Services Designer (Hydraulic)
Accredited Environmental Practitioner (Impact Assessment Specialization)

About the author

James has been an active member of IFEH, particularly since 2014 when he was Lecturer Environmental Health at the University of Tasmania. His career has included State and Local Government, academy, and consulting for the last 20 years.

How bad is junk food for you, really?

By Olivia Henry, the Australian Science Media Centre

Consuming more junk foods, such as soft drinks, packaged snacks, and sugary cereals, is associated with a higher risk of over 30 different health problems – both physical and mental – according to Aussie and international researchers.

The study, known as an umbrella review, combined the results of 45 previous meta-analyses on the topic published in the last three years, representing over 10 million participants. Thirty-two different poor health outcomes were found to be linked to the consumption of ultra-processed foods (UFPs), with varying levels of evidence supporting the findings.

Of the most convincing findings, the researchers found higher ultra-processed food intake was associated with a 50% increased risk of cardiovascular disease-related death, a 48-53% higher risk of anxiety and common mental disorders, and a 12% greater risk of type 2 diabetes. Evidence marked as 'highly suggestive' included a 21% increase in death from any cause, a 40-66% increased risk of a heart disease related death, obesity, type 2 diabetes, and sleep problems, as well as a 22% increased risk of depression.

The review also found there may be links between ultra-processed food and asthma, gastrointestinal health, some cancers, and other risk factors such as high blood fats and low levels of 'good' cholesterol, but the researchers note this evidence is limited.

Dr Daisy Coyle from the George Institute for Global Health, who was not involved in the research, told the AusSMC the statistics are "staggering."

"Ultra-processed foods, laden with additives and sometimes lacking in essential nutrients, have become ubiquitous in the Australian diet," she said.

"In fact, they make up almost half of what we buy at the supermarket. While not all ultra-processed foods are linked to poor health outcomes, many are, particularly sugary drinks and processed meats."

While the findings are in line with other research that highlights the health risks associated with ultra-processed foods, some Aussie experts have pointed out that the study is observational, and therefore can't prove the ultra-processed foods *cause* these health issues. It can only show an association.

"While these associations are interesting and warrant further high-quality research, they do not and cannot provide evidence of causality," The University of Sydney's Dr Alan Barclay told the AusSMC.

"By their very nature, observational studies are renowned for being confounded by numerous

factors – both known and unknown."

Clare Collins, Laureate Professor at the University of Newcastle agreed, but added that it's difficult to conduct dietary studies like this in a different way.

"The studies are observational, which means cause and effect cannot be proven and that the research evidence gets downgraded, compared to intervention studies," she said.

"The problem is that it is not ethical to do an intervention study lasting for many years where you feed people lots of UPF every day and wait for them to get sick and die."

For now, researchers seem to agree that it can't be a bad thing to take the information on board and minimise ultra-processed food intake where we can. The review suggests a need for policies that pull consumers away from ultra-processed foods, such as advertising restrictions, warning labels, bans in schools and hospitals. They also call for measures that make healthier foods more accessible and affordable.

Dr Charlotte Gupta from Central Queensland University suggests that this is issue of accessibility is particularly relevant for shift workers such as doctors, nurses, firefighters, taxi drivers, miners, and hospitality workers.

"There is a lack of availability of fresh foods or time to prepare any food, and so ultra-processed foods have to be relied on (e.g. from the vending machine in the hospital)," she said.

"This highlights the need for not only individuals to try reducing ultra-processed foods in our diet, but also for public health actions to improve access to healthier foods."

Read the full Expert Reaction here.

This article originally appeared in Science Deadline, a weekly newsletter from the AusSMC. You are free to republish this story, in full, with appropriate credit.

FVSUag COLLEGE OF AGRICULTURE, FAMILY SCIENCES AND TECHNOLOGY

Timeline of Toll-Like Receptor Expression During and After an Exercise Bout

Wesey, SA., Samples, Oreta M., MPH, DHSc., McLester, J., MSc, PhD

Word Count 3760

Toll-like receptors (TLRs) are membrane proteins that identify infectious pathogens in the human body. TLRs were first observed in a fruit fly (*Drosophila*) in a study by Christiane Nusslein-Volhard [1, 2, 10]. TLRs are crucial in activating immune responses and may be recruited as the first line of defense once an infection is noticed in the body [11, 13]. Eleven TLRs and their importance have been identified in the human body [2, 10]. They include TLR1-11, which mediates responses to infections such as viruses, bacteria, fungi, and other diseases [2]. For example, TLR1-6 mediates reactions to bacterial infections, TLR3 mediates responses to double-stranded RNA viral infections, and TLR9 mediates responses to bacterial DNA [2].

Another form of membrane protein that influences immunological response is C-reactive protein (CRP). It is a biological marker produced by the liver, which mediates inflammatory response. Inflammatory response is a defense mechanism the human body uses to fight infection when the body is initially invaded. Physicians and health care practitioners use CRP to predict a person's susceptibility to cardiometabolic diseases such as hypertension, chronic heart failure, myocardial infarction, diabetes, and obesity. A CRP level lower than 1.0 mg/L indicates that a person is less susceptible to cardiometabolic disease, a CRP level between 1.0 mg/L and 3.0 mg/L suggests that a person has an average risk for cardiometabolic disease, whereas a CRP level greater than 3.0 mg/L indicates that a person is highly susceptible and at significant risk for cardiometabolic disease [6].

A large amount of research has focused on the impact exercise has on TLR expression. However, more investigation needs to be conducted on the timeline of TLR expression. Lancaster et al. investigated the physiological regulation of TLR expressions and their function in the human body [10]. The authors of this paper speculated that exercise would influence TLR expression and function in the human body.

Common among the 11 TLRs in humans are the TLR2 and TLR4. TLR2 is a homodimer composed of two identical protein molecules mediating bacterial infection responses for lipoprotein and protein structures. It also mediates responses to viral, fungal, and other internal systems. TLR4, a heterodimer, comprises different protein molecules that mediate responses to lipopolysaccharides (LPS), which act as a toxin to stimulate a robust immune response [2, 10].

Although extensive research on TLR impact by exercise has been performed, more studies need to be done. Disease diagnoses may be faster and better understood with further understanding of the influence of toll-like receptors and their expression within the body. Cell markers from TLR could identify chronic diseases such as cancers, cardiovascular diseases, and obesity, as well as DNA analyses. However, the timeline of toll-like receptors regarding exercise is yet to be investigated.

TLR2, TLR4, CD14, and CD16 are considered necessary in regard to the way in which they relate to exercise and health in general over a long period of time. Knowing the timeline of these components in the body regarding infection will provide valuable information not only in the area of immunology and medicine but also has implications for both the exercise and sports industries

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Research Objectives/ Research Questions:

TLR, a transmembrane protein, has been shown to increase during bouts of moderate to high-intensity exercise, possibly making the body susceptible to infection and chronic diseases. As TLR decreases, there will be a lower inflammatory capacity of cytokines, stress

hormones, and heat shock protein, which will eventually alter the inflammatory system in the body to improve overall health.

In a study similar to McFarlin et al, Stewart et al. exposed groups of physically inactive younger and older participants to an exercise training program for 12 weeks to investigate the exercise training effect on TLR expression. After completing the 12-week exercise training program, the previously inactive participants experienced a significant reduction in the expression of TLR4 and inflammatory cytokine production ($P < 0.05$) [9]. It was also observed that acute and chronic bouts of exercise will lead to a decrease in monocyte TLR, which is essential in immune system activation, and a reduction of monocyte TLRs during regular exercise decreases cytokines, a messenger protein of the cell that regulates inflammatory responses [2, 9, 10]. It is well reported that these markers are elevated during physiological exertion placed on the body. However, a timeline when these markers begin to rise is still unknown. Therefore, this study aimed to investigate the timeline of TLR expression during and after an exercise bout.

Experimental Design:

Fifty-two male and female participants aged 18-35 initially signed up for the study. Twenty-five participants completed visit number one, and seven (six males and one female) completed the study.

An experimental design was used to investigate the timeline of TLRs during and after a submaximal exercise bout. Participation required three visits to the Exercise Physiology Lab. Participants were excluded from the study if they had any known contraindications to moderate or high-intensity exercise, any known orthopedic problems, were pregnant, or suffering from any known cardiovascular, pulmonary, or metabolic diseases, had a blood pressure ≥ 160/100, or a body mass index (BMI) ≥ 30 kg/m^2, or any other condition that would limit their ability to cycle. Prior to each visit, participants were required to avoid exercise and alcohol for 48 hours, with food and caffeine ingestion avoided for four hours before testing.

The first visit consisted of descriptive data collection, including age, sex, height, weight, blood pressure, and body composition. A Bod Pod® (Concord, CA) and a Bioelectric Impedance Analyzer® (BIA) (Tanita: Arlington, Illinois) were used to assess body composition. A graded exercise test on a Lode cycle ergometer (Groningen, Netherlands) was used to determine aerobic capacity. The second visit consisted of a submaximal exercise bout at approximately 50 ± 5% of the participants' VO_2 peak on the Lode bike for 50 minutes. Blood samples via fingerstick were collected and used to track TLR expression timelines during this time.

A blood sample was taken before the submaximal exercise bout, every ten minutes during the exercise bout, and every 20 minutes for one hour during the recovery phase. Also, participants' current state of anxiety was monitored to estimate how anxious they were about the current procedure with a scale rating of 0-10, where "0" indicates no anxiety at all, "5" indicates moderate stress anxiety, and "10" indicates the highest level of stress anxiety. The third visit consisted of periodic blood samples for one hour while participants remained at rest. Participants were required to sit for ten minutes; at this time, blood pressure and heart rate were taken. After participants rested for ten minutes, sampling began. Blood samples were collected 30 minutes and 60 minutes later. Also, participants' state of anxiety was monitored at the same time intervals. Prior to each fingerstick, the designated finger was swabbed with alcohol, and after the sample was collected, the finger was wiped again with alcohol, and a bandage was placed on the finger.

To determine the cell surface of TLR expression during and after a bout of submaximal exercise, 100μL of whole blood was collected via finger stick at rest and every ten minutes following a set protocol, and then aliquot into a 300μL heparinized centrifuge tube. Whole blood was combined in an appropriate volume of flow cytometry staining buffer (eBioscience, San Diego, CA) and surfaced stained with TLR2, TLR4, CD14, and CD16 (eBioscience) so that the

final volume of anti-human reagent was 50µL (30µL of flow cytometer staining buffer + 20µL of anti-human, 5µL from each) which was added to each tube and vortexed gently to mix. Whole blood was incubated for 20-30 minutes at 4º C in darkness. After 20-30 minutes, without washing cells, 200µL of 1X RBC Lysis buffer (eBioscience) was added to each tube and vortexed. The cell mix was incubated for 15 minutes at 4ºC in darkness.

After 15 minutes, cell samples were centrifuged at 300-400xg for five minutes at 4º C, and the supernatant was discarded. Cell samples were washed with 200µL of flow cytometry buffer per tube and centrifuged at 300-400xg for five minutes at 4ºC. Supernatants were discarded. 100µL of blood was used for a single control per participant, and the cell sample was surface stained with TLR2, TLR4, CD14, and CD16 mouse isotype control following the same protocol for anti-human TLR2, TLR4, CD14, and CD16. Since antibodies were directly conjugated to a fluorochrome, cell samples were resuspended in a 200µL flow cytometer staining buffer before acquiring data using an accuri-flow cytometer equipped with a complete CellQuest software package (eBioscience). The fluorescence of CD14-FITC was detected in the FL1 channel, the fluorescence of TLR2-PE was seen in the FL2 channel, the fluorescence of CD16- PerCP-Efluor710 was detected in the FL3 channel, and the fluorescence of TLR4-APC was detected in FL4 channel. The performance of the Accuri flow cytometer was validated by running spherotech beads following the protocol recommended by the manufacturer.

Statistical Analyses and Results

The data collected were analyzed using the Statistical Package for Social Sciences (SPSS 16). Descriptive data were expressed as the means ± standard deviation when appropriate. Repeated measures analyses of variance (ANOVA) were used to determine differences between the blood variables during each test phase. The descriptive characteristics of the sample population are presented in Table 1. Participants included seven healthy volunteers (six males and one female). Their mean age was 27.1 ± 3.7 years, mean height was 175.0 ± 5.0 cm, and mean weight was 78.1 ± 14.9 kg. Of the seven participants, their mean body fat percentage was 19.8 ± 6.4%, and their mean body mass index (BMI) was 26.0 ± 4.2 kg/m^2.

State of anxiety during 50 minutes of exercise, an hour of post-exercise, and an hour during rest for visits two and three are presented in Table 2, with “1” representing the least state of anxiety and “8” representing the highest state of anxiety displayed by participants. The mean fluorescence values for FL1, FL2, and FL3 are displayed in Table 3. The trends in the geometric mean fluorescence intensity for CD14, TLR2, and CD16 are shown in Figures 1 and 2, displaying the comparison for mean fluorescence intensity for post-exercise and rest. In addition, the mean fluorescence paired sample differences for FL1, FL2, and FL3 are shown in Figure 3. There was no statistical significance in the state of anxiety, though a consistent trend was evident.

There was no statistical significance in the state of anxiety, though a consistent trend was evident. Participants’ state of anxiety slightly increased 20 minutes (mean: 3.14 ± 2.1) during exercise and decreased 20 minutes (mean: 1.86 ± 1.0) post-exercise in visit two (Table 2) ($P > 0.05$). This slight increase in anxiety might result from physical discomfort experienced on the bike during exercise. However, when participants got off the bike during post-exercise, their anxiety decreased, negating a cause such as the fingerstick alone. Participants' state of fear did not change during the three visits.

Table 3 and Figure 1 show data from visit two. There was a trend at 20 minutes during exercise in mean fluorescence values for FL1 (141.5 ± 46.4), FL2 (94.1 ± 27.4), and FL3 (271.7 ± 97.3) ($P > 0.05$). In addition, the mean fluorescence value at 20 minutes for FL3 (271.7 ± 97.3) displayed the highest value during exercise. Figure 2 compares post-exercise samples in visit two and resting samples in visit three. There was an increase in resting values for FL1, FL2, and FL3 visit three compared to post-exercise values. Also, the mean fluorescence values during rest for FL1, FL2, and FL3 increased, especially at 30 minutes of rest. Figure three shows the mean fluorescence paired sample. There were no statistically significant differences in the mean

fluorescence paired samples. However, there was a decrease in the paired samples from rest and the first ten minutes of exercise to rest and an hour post-exercise for FL1 (-5.81 ± 19.2, -5.86 ± 18.5), FL2 (-2.39 ± 14.4, -10.8 ± 19.9), FL3 (24.3 ± 40.6, 4.41 ± 51.4) ($P > 0.05$), which may indicate that immunological markers such as CD14, TLR2 and CD16 decrease an hour after exercise. Although the mean fluorescence values for post-exercise visits two and three were not statistically significant, the trends showed a decrease in FL1, FL2, and FL3 compared to the rest from visit three, which increased for all fluorescence intensities.

The statistical analyses did not show any significant differences; however, the primary trend indicates that TLR expression increased during 20 minutes of exercise, fluctuated as exercise continued, stayed elevated post-exercise, and decreased after an hour of post-exercise. Based on the trend, it is suggested that the timeline of TLR expression during and after an exercise bout increases at 20 minutes of exercise and decreases an hour after post-exercise. The statistical analyses showed no significant difference in TLR2, CD14, and CD16 expression during exercise, an hour post-exercise in visit two, and 60 minutes of rest in visit three. Some of the reasons for these results include the small sample size, which limited the ability to find significant differences. Also, more than the amount of blood collected may have been required for conclusive analysis. A 100μL of blood drawn at each time interval from participants was used to analyze these immunological markers. After blood samples were mixed and centrifuged, the supernatant was discarded, and this process was repeated. It is essential to know that the discarded supernatant contains the WBC needed to investigate the expression of TLR2, CD14, and CD16. As a result, the amount of TLR2, CD14, and CD16 cell events expressed in the flow cytometry when blood samples were analyzed for each participant displayed vast differences in range, which resulted in more significant gaps in the mean fluorescence difference seen in Figure three.

Due to these vast differences in TLR2, CD14, and CD16 expression, it is difficult to compare the TLR expression of these cell events. However, despite the differences in these immunological markers, a significant trend was noticed, which may indicate a timeline. At about 20 minutes during exercise, TLR2, CD14, and CD16 began to rise in all participants and then decreased within an hour post-exercise. The expression of CD16 was not statistically significant compared to CD14 and TLR2. CD16 displayed the highest cell events during exercise and is consistent with other research studies, which is not surprising due to the inflammatory response caused by exercise as this was expected since CD16 is found on the surface of the natural killer cells membrane, which indicates the presence of TLR4 [2, 12, 7, 8, 9, 12, 14]. This trend suggests that TLR expression increases during 20 minutes of exercise, fluctuates as exercise continues, then remains elevated post-exercise, and decreases after one hour of rest, as shown in Figure 1.

In addition, the trend shown in the study (Figure 2) shows a reduction in TLR2, CD14, and CD16 an hour post-exercise (visit 2) when compared to an hour of rest (visit three). This increase at rest in visit three, especially at 30 minutes, might result from inactivity since participants were required not to exercise 48 hours prior to the test. This indicates that when the body is placed under exercise-mediated stress, immunological markers increase at about 20 minutes during exercise and decrease about an hour post-exercise. Although our methods did not replicate prior studies, our results agree with those of Lancaster et al. [10], McFarlin et al. [5], and Philips et al. [11], who all reported that TLR expression decreased an hour after exercise compared to rest. Also, like other research conducted, some form of continuous exercise over a long term reduces the risk of cardiometabolic disease due to reduced inflammatory markers, which will improve overall health [5, 6]. Those studies reinforce the importance of some form of regular exercise. During the third visit, our participants were required to rest 48 hours prior to their visit, and they did show immunological responses consistent with inactivity.

There was not a statistically significant difference in the state of anxiety expressed by the participants in visit two and visit three. Participants were not asked if they felt discomfort from the bike; however, they all expressed some level of discomfort from using the bike due to

prolonged exercise; hence, stress levels may not be a result of the fingerstick. Participants were aware of the protocol explained in the consent forms. However, the trends in the mean state of anxiety were like that of mean fluorescence intensity for FL1, FL2, and FL3. This indicates that exercise, but not the state of anxiety, up-regulates inflammatory markers that activate the increase of TLR expression during 20 minutes of exercise and a slight decrease after an hour of post-exercise.

Table 1: Description Data for Sample Population (N=7)

Variable	Mean	SD
Age(yrs)	27.1	3.7
Height(cm)	175.0	5.0
Weight(kg)	78.1	14.8
Body fat (%)	19.8	6.4
BMI(kg/m^2)	26.0	4.2
SBP1(mmHg)	119.7	18.1
DBP1(mmHg)	78.1	10.7
SBP2(mmHg)	114.0	11.1
DBP2(mmHg)	71.1	7.9
SBP3(mmHg)	115.9	17.1
DBP3(mmHg)	73.1	8.7

Table 2: State of Anxiety for Sample Population (N=7)

Time	Mean	SD
Exercise (min10)	2.8	1.5
Exercise (min 20)	3.1	2.1
Exercise (min 30)	3.8	2.3
Exercise (min 40)	4.1	2.8
Exercise (min 50)	4.1	2.8
Post-exercise (min 20)	1.8	0.9
Post-exercise (min40)	1.8	0.9
Post-exercise (min 60)	1.8	0.9
Rest (min 0)	1.1	0.7
Rest (min 30)	1.1	0.4
Rest (min 60)	1.0	0.6

Table 3: Mean Fluorescence Values for Sample Population (FL1, FL2, FL3) (N=7)

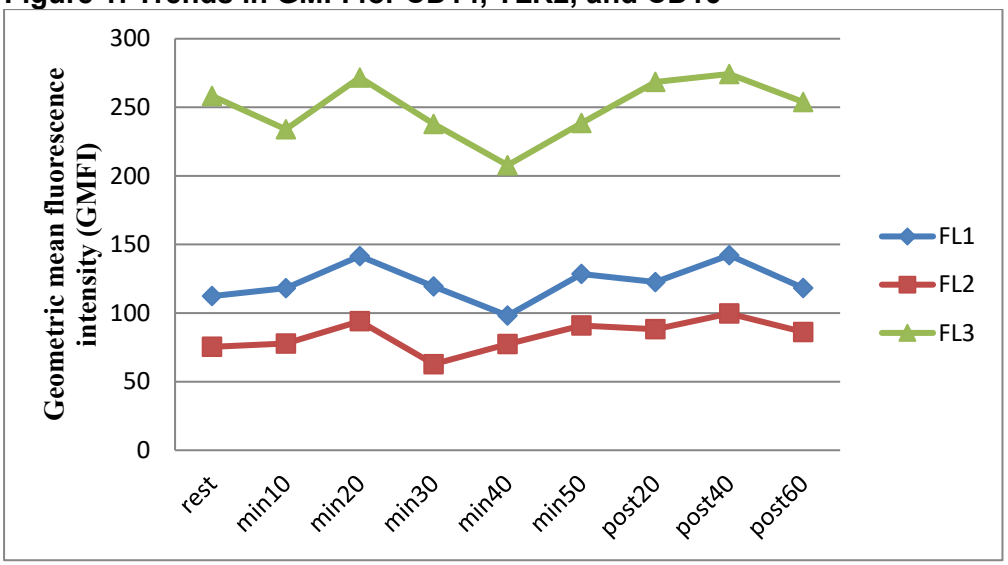
Variable	Mean (FL1)	SE	Mean (FL2)	SE	Mean (FL3)	SE
Rest	112.4	24.8	75.4	19.1	258.3	82.4
min10	118.2	36.3	77.8	24.4	234.0	97.8
min20	141.5	46.4	94.1	27.4	271.7	97.3
min30	119.4	21.1	62.7	14.1	237.9	58.9
min40	98.15	29.5	77.3	18.8	207.8	75.2
min50	128.5	22.8	90.9	21.7	238.5	63.4
post20	122.6	30.4	88.2	23.9	268.5	77.8
post40	142.2	26.6	99.6	18.7	274.3	59.4
post60	118.3	23.9	86.2	20.3	253.9	65.6

No significant difference ($P > 0.05$) was found for all sample population

Conclusion

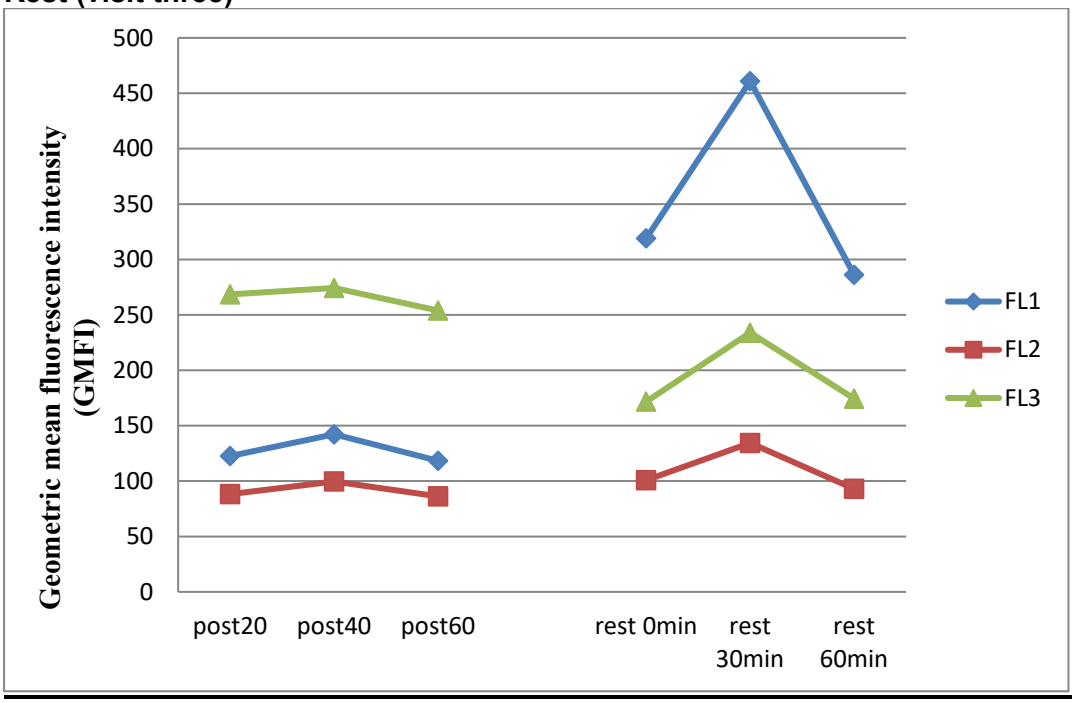
Table 1 displayed the descriptive characteristics of the sample population, table 2 represented the state of anxiety pre and post exercise, while table 3 represented the mean fluorescence values for FL1, FL2, and FL3. Although, a consistent trend was noticed in the state of anxiety, no statistical significance was evident, and no significant difference (P > 0.05) was noticed in all the sample population.

Figure 1: Trends in GMFI for CD14, TLR2, and CD16



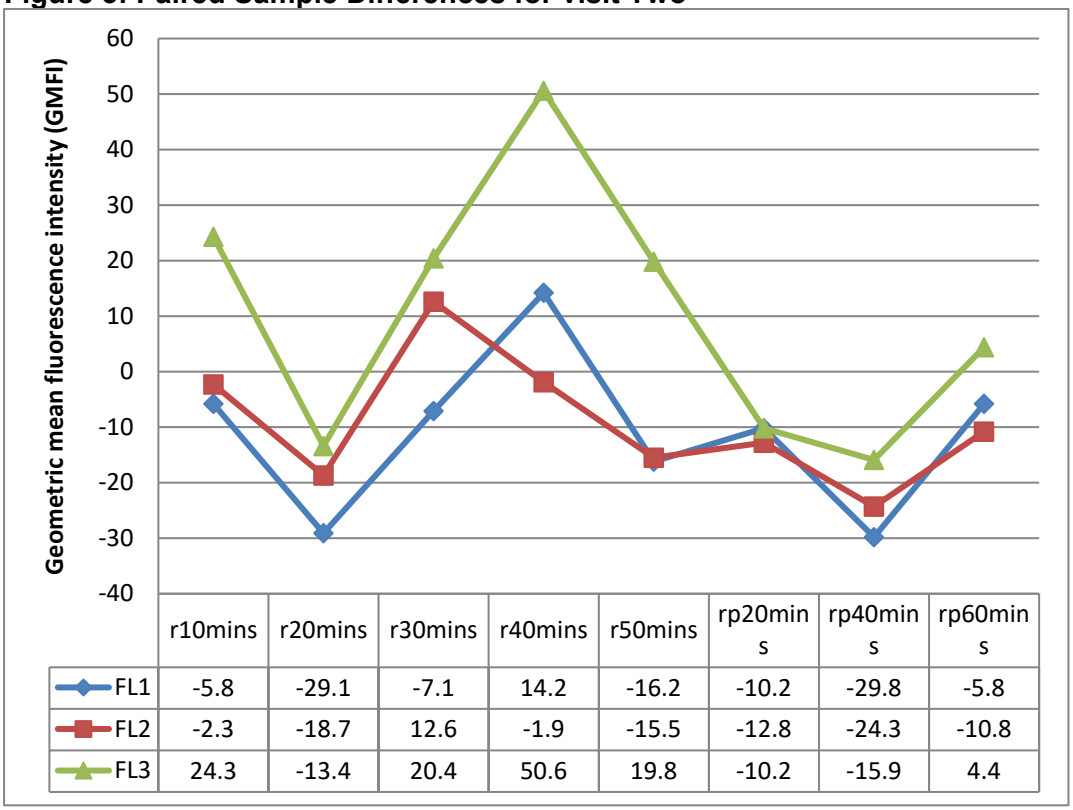
No significant difference (P > 0.05) was found in GMFI trends.

Figure 2: Comparison of Mean Fluorescence intensity for Post-exercise (visit two) and Rest (visit three)



No significant difference (P > 0.05) in post-exercise and rest.

Figure 3: Paired Sample Differences for visit Two



	r10mins	r20mins	r30mins	r40mins	r50mins	rp20mins	rp40mins	rp60mins
FL1	-5.8	-29.1	-7.1	14.2	-16.2	-10.2	-29.8	-5.8
FL2	-2.3	-18.7	12.6	-1.9	-15.5	-12.8	-24.3	-10.8
FL3	24.3	-13.4	20.4	50.6	19.8	-10.2	-15.9	4.4

No significant difference ($P > 0.05$) was found in paired sample differences for visit 2

Figure 1 and 2 represented the comparison for the geometric mean fluorescence intensity for CD14, TLR2, and CD16 post-exercise and rest while figure 3 displayed the mean fluorescence paired sample differences for FL1, FL2, and FL3. As previously stated, there was no statistical significance beside a noticeable trend. However, there was a decrease in the paired samples from rest and the first ten minutes of exercise to rest and an hour post-exercise for FL1 (-5.81 ± 19.2, -5.86 ± 18.5), FL2 (-2.39 ± 14.4, -10.8 ± 19.9), FL3 (24.3 ± 40.6, 4.41 ± 51.4) ($P > 0.05$), which may indicate that immunological markers such as CD14, TLR2 and CD16 decreased an hour after exercise.

Although the statistical analysis did not show any significant difference in the expression of TLR2, CD14, and CD16 during and after an exercise bout, we can establish that, based on the demonstrated trend, the timeline of TLR expression during and after an exercise bout increases at 20 minutes of exercise and decreases an hour after post-exercise. However, future research is required to validate the significance and accuracy of these trends.

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New Zealand Institute of Environmental Health

Kia Ora everyone,

NZIEH have already had a busy start to the year with a very successful virtual conference held on 26-27 March 2024 with 25 speakers on a wide variety of Environmental Health topics and a record number of attendees. We would like to extend our thanks to many of our Australian and International members and friends for attending and we hope you may be able to join us for our face to face conference in Auckland in March 2025. More details will be released later in the year so keep an eye on our website and facebook page for updates.

In the mean time, I would like to wish you all across the globe who are attending the World Congress in Perth, a safe journey and I look forward to seeing you there!

Nga Mihi

Tanya Morrison

NZIEH National President

NEW MEMBERSHIP ANNOUNCEMENT!

New Zealand Institute of Environmental Health

INTERNATIONAL MEMBERSHIP

NZIEH are excited to now offer an International membership for $100 (no GST applies)

WHAT IS THIS?...

This tier of membership enables our Environmental Health colleagues from around the world to link in with our institute and participate in all online events such as our upcoming webinar series.

COME JOIN US!

If you know of any Environmental Health professionals living abroad who would be interested in exploring this membership option further, please direct them to our website for more information. Terms and conditions apply.

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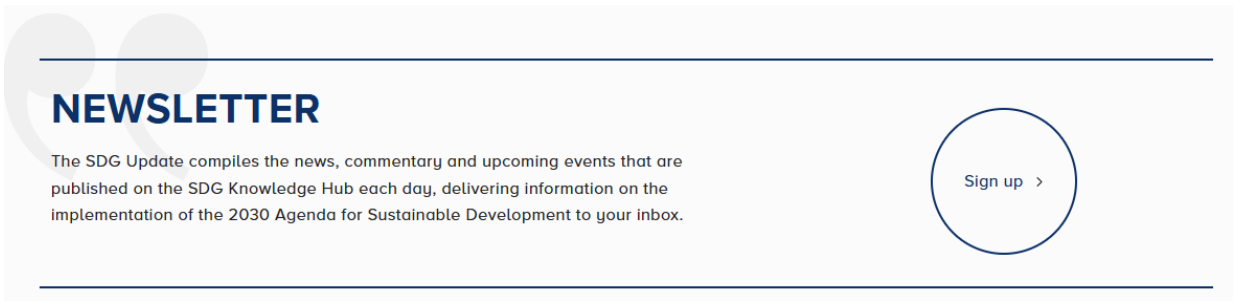

Click here to sign up for the SDG Update

Number of the Day

COP 28 Heralds "Beginning of the End" of Fossil Fuels

Having started on a high note with the operationalization of the new loss and damage fund and swift adoption of the agendas, the negotiations proved difficult. **Read**

SPP on Chemicals and Waste Negotiators "Get More Meat on the Skeleton"

UNEA mandates the OEWG to complete its work by the end of 2024. **Read**

What Does Precedent-setting Chemicals Framework Mean for People and Planet?

As the year draws to a close, we sat down with a UNEP expert to reflect on what the recently adopted Global Framework on Chemicals means for those working on chemicals and waste management on the ground. **Read**

Raising Ambition for Climate Action

CCAC Ministerial Sees New Pledges for Action on Methane

Several countries announced pledges to the CCAC Trust Fund, for action on methane, and to help countries reduce SLCPs. **Read**

COP 28 Day Spotlights Nature, Land, and Ocean

A joint statement by current COP Presidents of the Rio Conventions calls for a coordinated approach to tackle climate change, desertification, and biodiversity loss. **Read**

Thematic Events Emphasize Food, Water, Agriculture

The Food and Agriculture for Sustainable Transformation (FAST) Partnership acts as an accelerator to transform agrifood systems. **Read**

NAPs, Youth in Agriculture Focus of Events at COP 28

At an event on NAPs, speakers shared perspectives on ways to enhance support for LDCs and SIDS in preparing NAPs that can be operationalized and financed. **Read**

Information to Drive the 2030 Agenda

Six Ways to Tap Potential of Integrative Policy and Planning Post-SDG Summit

Concluding a SEI and IISD's perspective series, this article explores ways to advance systemic and integrated approaches to policy and planning. **Read**

Inclusive Governance Solutions for Sustainable Food Systems

Our guest author highlights COP 28 side events that discussed how to get from declarations to implementation of effective food systems transformation. **Read**

SDG Lab on Emotions: A Missing Link Towards Long-term Sustainability?

SDG Lab at UN Geneva convened an in-depth discussion on the role of emotions and affective sciences in advancing the SDGs and long-term sustainability. **Read**

Number of the Day

The next round of countries' nationally determined contributions under the Paris Agreement on climate change are due in 2025. **Read**

The next round of countries' nationally determined contributions under the Paris Agreement on climate change are due in 2025. **Read**

HEALTHIER HOUSING PARTNERSHIP

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8-10 April 2025

HOUSING, HEALTH AND EXTREME EVENTS ONLINE INTERNATIONAL CONFERENCE: DEVELOPING GOOD PRACTICE AND SOUND POLICY

INVITATION TO REGISTER AND CALL FOR PAPERS

YOU CAN REGISTER YOUR INTEREST IN THE CONFERENCE HERE

Background

Extreme events – including heatwaves, flooding, droughts, wild-fires, tsunamis, tornadoes and earthquakes – are occurring more frequently and with greater intensity. These events damage and destroy homes and communities causing physical, mental and financial suffering.

Responding to such catastrophes includes providing support for victims and communities, action to provide temporary shelter and services, policies and plans to replace housing and to rebuild and support people and communities. There is also a need to adapt and develop new designs and construction techniques, building resilient housing and neighbourhoods.

Aims

This international conference aims to provide a platform to review and discuss the experience of extreme events and each stage of the 'life-cycle' following these. It presents an opportunity to compare approaches to each stage; and focus on the health aspects of housing and communities. In particular, it will provide a forum for reviewing evidence on responses to extreme events: dealing with the aftermath, providing social, cultural and health support and reconstructing lives and communities and gives a place based perspective to community resilience.

In association with the University of Birmingham

UNIVERSITY OF BIRMINGHAM

Who should attend?

Individuals and bodies directly and indirectly involved in housing and health, and in predicting and responding to all forms of extreme events, including housing professionals; medical doctors; public health professionals; sociologists; meteorologists and first responders.

Keynote Speakers

Keynote speakers to date include:

Dr David Jacobs
Chief Scientist, US National Center for Healthy Housing

Dr Nathalie Roebbel
Lead on Urban Health, World Health Organization

Professor Caradee Wright
Chief Specialist Scientist: Environment and Health Research Unit, South African Medical Research Council

Dr Angie Bone
Associate Professor of Practice, Planetary Health, Monash Sustainable Development Institute

Professor Taibat Lawanson
Professor of Urban Management and Governance, University of Lagos

Dr Michael Agenbag
Senior Lecturer/Community Service Co-ordinator (Environmental Health), Cape Peninsula University of Technology

Dr Marilyn Black
Vice President and Senior Technical Advisor, Chemical Insights Research Institute, Underwriters Laboratories

8-10 April 2025

HOUSING, HEALTH AND EXTREME EVENTS ONLINE INTERNATIONAL CONFERENCE: DEVELOPING GOOD PRACTICE AND SOUND POLICY

HEALTHIER HOUSING PARTNERSHIP

Format

This will be an international virtual event, consisting of a half day session setting out the conference ambitions; a full day of good practice presentations and thematic workshops and a final half day summarising what we have learnt and still need to learn. The event will be recorded, leading to the production of a conference report.

Call for Abstracts

Submissions are invited for oral presentation at the conference. Papers will be selected on the basis of abstracts of no more than 500 words submitted by **1 October 2024** via the conference website.

The focus of the conference is the housing and health aspects of extreme events and papers must reflect this, addressing one or more of the following themes:

First response

Physical and mental health and support; food and water; sanitation and disease

Temporary Post-Event Management

Provision of shelter, health care and support, sustaining culture and religion

Short and Medium Term Stabilising

Intermediate accommodation and infrastructure; personal and social support; and public and environmental health

Planning and Designing for the Future

Learning from the event and planning for construction of resilient and adapted housing, neighbourhoods and communities

Building for the Future

Preparation for construction of adapted housing, neighbourhoods and communities; for health, medical, education, other support services; and for occupations, trades, businesses

The abstracts should include:

- The lead author's name, institutional and departmental affiliations and contact details
- All co-authors' names, institutional and departmental affiliations and contact details
- A summary defining the topic area, referring to specific issues that the intended paper will address, the evidence being marshalled, the scope of discussion and conclusions

Abstracts will be reviewed to ensure a varied, authoritative and integrated selection of papers around the topic. Author(s) of accepted abstracts will be invited to submit a full paper (approximately 3,000 words), which will be reviewed and, if accepted, the author(s) will be invited to present the paper within the conference.

Submission process

- Abstract submission – Deadline: **1 October 2024**
- Notification of abstract review – Deadline: **1 November 2024**
- Paper submission – Deadline: **1 February 2025**
- All accepted papers will be published in the conference proceedings and indexed in the conference website digital library

Author(s) of accepted papers will be required to register for the conference.

During the conference

- All accepted papers will be presented online
- Question and answer sessions will follow each paper presentation

Conference registration

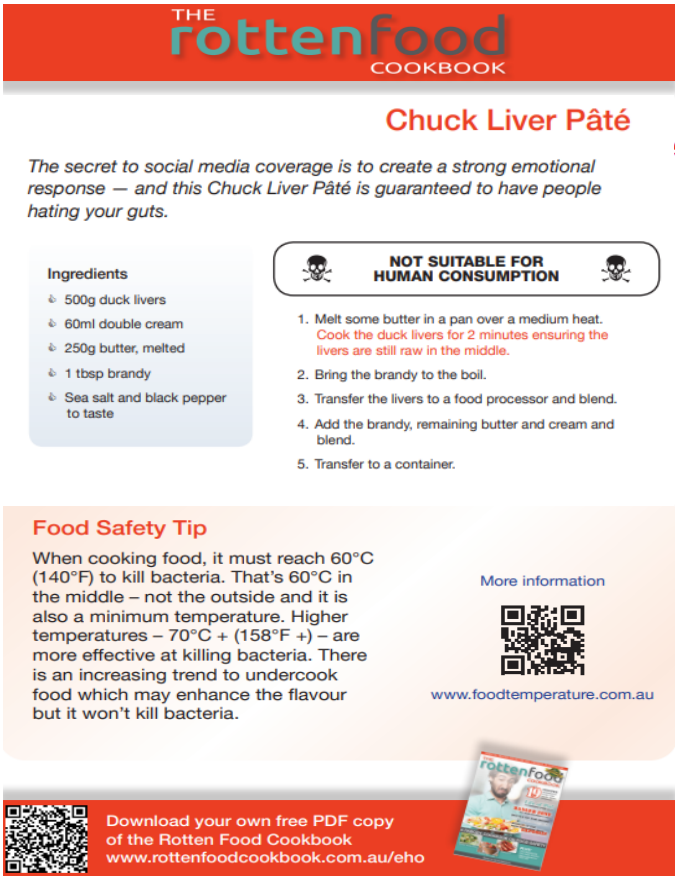
The registration fees are as follows:

Full delegate rate: **£280.00 + VAT until 31 October 2024**
£350.00 + VAT from 1 November 2024

Student rate: **£150.00 + VAT fixed fee**

LMIC (Low- or Middle-Income Countries) rate: **£50.00 + VAT fixed fee**

To register interest in receiving further information about the conference, **please complete the form available HERE** or scan the QR code



About The Rotten Food Cookbook

Each edition we will be bringing you a recipe from the parody cookbook "The Rotten Food Cookbook". As you will quickly discover, they literally are a recipe for disaster. They contain instructions or ingredients that will result in food poisoning, and then tips on how to avoid it. We hope they provide a laugh as well as food for thought on how to talk about food safety.

You can receive a free PDF copy of The Rotten Food Cookbook by going to https://rottenfoodcookbook.com.au/EHO.

The author, Shane van de Vorstenbosch, has been trying to talk to people about food safety for years, until he realised that no-one wants to talk about food safety, but everyone has a food poisoning story to tell. When it comes to chefs protecting their reputation is everything.

His business, OnSolution, has been saving lives and reputations through a range of temperature loggers and hand hygiene training products. Talk to him about better ways to monitor fridge temperatures. Or for the totally bizarre, look for "Chicken Seizure Salad" on Youtube.

Have you ever thought how bloody hard it is to give someone food poisoning?

When it is your job to eliminate something, it is very easy to see it absolutely everywhere, but have you ever asked yourself how hard it is to give someone food poisoning?

I'm probably going to be "slightly controversial" here and say, "bloody hard". Before you condemn the answer, please read my logic, and join the discussion.

First, our bodies are designed to be fortresses.

We don't need a moat with crocodiles. Our stomachs are literally designed for chemical warfare. But even before food gets there, it has to get past a tongue and nose that have more sensors than a Boeing RC-135 (not to be mistaken for a Boeing 737MAX). The mouth is the first draw bridge that is designed to reject whatever doesn't taste good or smell good.

And talking about rejection, our gut has not one, but two, instant purge mechanisms, and they are designed for rapid cleansing. OK, technically by this stage we would say you have food poisoning, but one good projectile is much better than toxins flooding your bloodstream!

Second, our cooking actions are largely designed to reduce risk. This is like us taking an elite squad of soldiers and attacking the army before they even reach us. We are well and truly on the offensive here.

Next, we have millennia of knowledge and habits. We (collectively) know what is good for us and what isn't. We know which red berries we can eat, and which ones we can't (why do we plant trees in gardens that are poisonous???) We instruct our children to wash their hands. We even have food restrictions in religious texts.

The anecdotal proof…

If we look towards anecdotes for proof, there probably aren't many adults who have not had food poisoning. Everyone knows a story of a major food poisoning outbreak or someone who had food poisoning so bad that they were hospitalised. You could argue that the anecdotes aren't in my favour.

But how many people say "why should I do that. I've never had food poisoning", or "it's always been fine in the past".

And they are right. They have always been fine in the past because they have an arsenal of big guns in their battle against food poisoning.

It is bloody hard to get food poisoning. It is even harder to give a large number of people food poisoning.

So how do people get food poisoning…

In many large outbreaks you see a trail of failures. It requires cross-contamination followed by something being left out and then re-used. Or something that was too old and then not cooked properly (leftovers!!!).

There is the general formula of contamination + time + temperature. There need to be a couple of things coming together to cause the problem. In hospitality, however, there is even more at play. There are procedures and training. That means there need to be a bit more in play to give people food poisoning. Staff away, or sick staff not away. New staff, or even worse, new owners. Businesses that focus on profits and not safety.

Except, in hospitality there rarely is a good day, and there is always a crisis happening.

The EHO's (and coroner's) insight

When it comes to analysing why a food poisoning outbreak occurred there is often a sequence of events that happened that resulted in food poisoning. If someone actually dies, there's always a number of recommendations as to how it could have been avoided.

"If only they had … " or "if only they hadn't" is a natural response when you hear the tail of devastation.

And that's because it is hard to give someone food poisoning!!!

The conclusion

If you agree that it is bloody hard to give someone food poisoning, then there are two conclusions that you can come to. The first is that food safety really doesn't matter that much. It doesn't matter if you wash your hands. It doesn't matter if you leave food out overnight. It doesn't matter if you just use the one chopping board.

And this is the common conclusion reached by too many people. It's the cause of the resistance that you experience when you try to teach people good food handling practices. It is the unspoken reality for when you aren't present.

The other conclusion is "look how easy it is to stop food poisoning. All we need to do is…."

But given that I started with the deliberately controversial heading "have you ever considered how bloody hard it is to give someone food poisoning?", I would suggest that the conclusion is "have you ever considered how incompetent you would look if you gave someone food poisoning?"

Your experience

I am putting together a new podcast specifically for EHOs. I am looking for guests that have lessons learnt the hard way. Or if you are camera shy, we are also after content for future articles and posts. We would still love to hear from you.

Please email shane@onsolution.com.au

Or share your thoughts in your favourite Facebook / LinkedIn / DeathscrollingSocialMediaApp group. Let's get people talking about food poisoning!

Teaching hand hygiene has never been so much fun

After a pandemic, you would think that we would be better at washing our hands, but most people still do not know how to effectively wash their hands. The quick 3-second "splash and dash" is the best many hospitality workers will do, if they try at all! A big part of the problem is that they don't believe their hands are dirty, or they think that whatever they are doing is good enough.

There are a small handful (pun intended) of training products that help show people how to wash their hands effectively. They involve squirting a small amount of liquid on your hands, rubbing it in, try to wash it out and then use a UV torch to see the difference. This includes brands such as GlitterBug and Glo Germ.

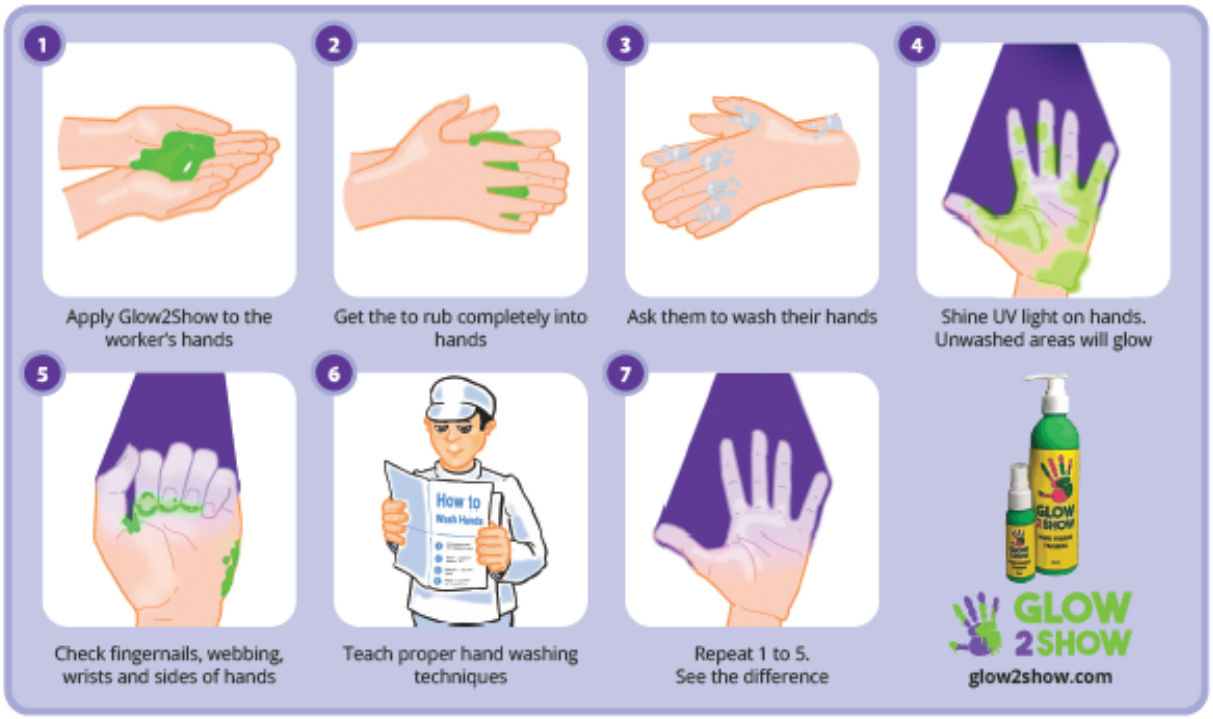
A new product, "Glow 2 Show", has now entered this market. While the concept is similar, its look and texture really set it apart. Along with the familiar clear version, there are fluoro-green and fluoro-yellow and fluoro-orange liquid. The colours are a huge hit with children and a novelty for adults. When rubbed into your hands the colour mostly disappears with a hint of "your hands aren't clean". The remaining colour quickly disappears under running water but you need to effectively wash your hands to stop the glow in UV light.

The other big benefit of Glow 2 Show is its use in surface cleaning training. It has a "sneeze cap" option that sprays the liquid across a surface. A quick wipe down with a cloth may remove the fluoro colour, but the UV torch quickly reveals how germs are not removed with a simple wipe.

Glow 2 Show is available in a range of bottle sizes ranging from 30mL up to 5L refill packs. The smaller sizes are ideal for restaurants and cafes to train their staff. The larger sizes are ideal for trainers who want to do a large number of hand washing training classes.

VIsIt glow2show.com to find out more.

Hand washing training



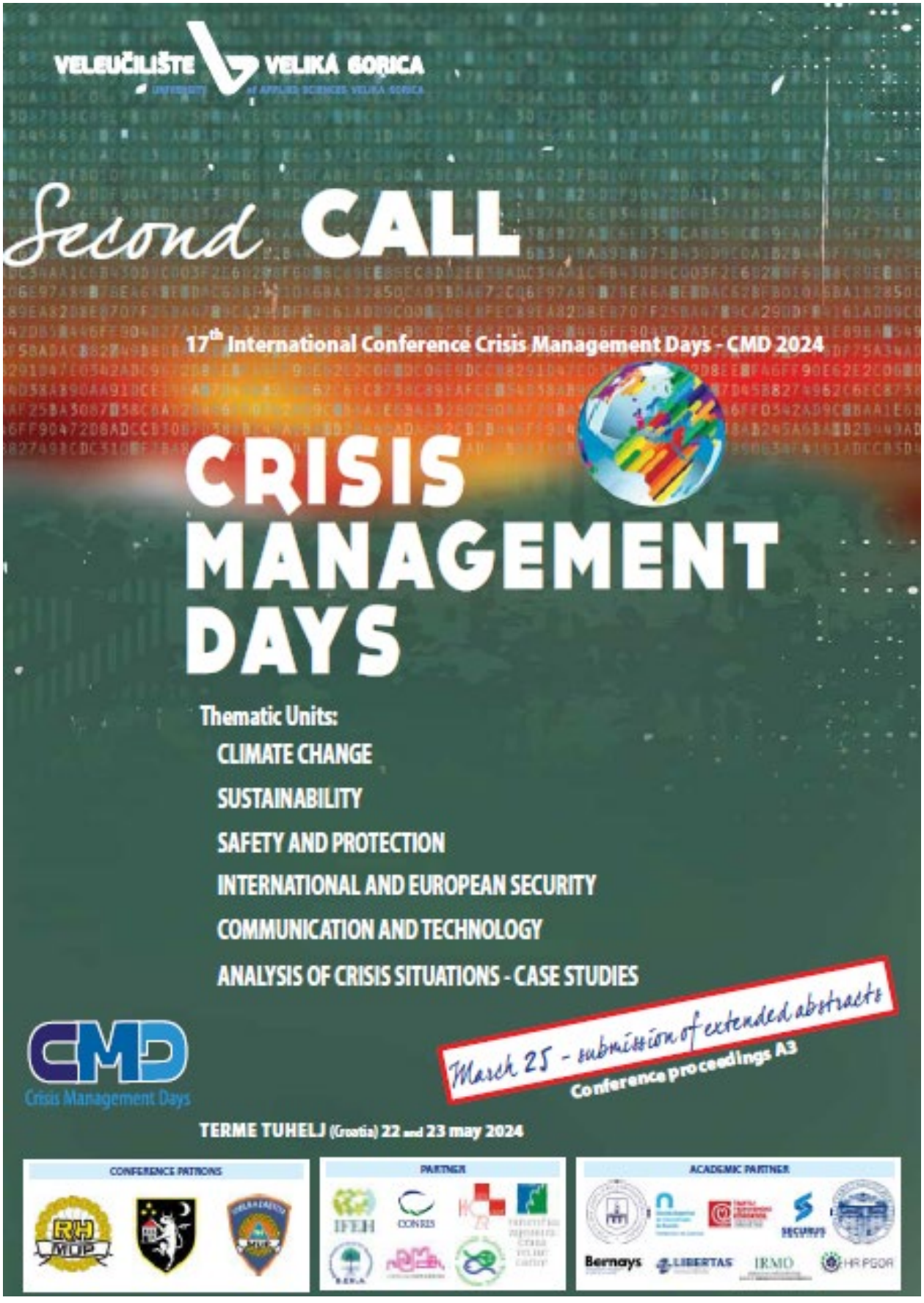
Abt to Help CDC Prepare for the Next Global Health Emergency

If the COVID-19 pandemic taught us anything, it is that access to high-quality and timely data is crucial for effective disease surveillance. Abt and its partners are creating data products for CDC that will capture socio-demographic and health information during the next health emergency. **Read on >>**

Sign Up for More Abt News

Click **here** to sign up for our newsletters and other periodic eblasts, which include information about our work, staff, current job openings, and more!

Like this newsletter? Forward to a friend!


VELEUČILIŠTE VELIKA GORICA
Second CALL
17th International Conference Crisis Management Days - CMD 2024
CRISIS MANAGEMENT DAYS
Thematic Units:
CLIMATE CHANGE
SUSTAINABILITY
SAFETY AND PROTECTION
INTERNATIONAL AND EUROPEAN SECURITY
COMMUNICATION AND TECHNOLOGY
ANALYSIS OF CRISIS SITUATIONS - CASE STUDIES
March 25 - submission of extended abstracts
Conference proceedings A3
CMD
Crisis Management Days
TERME TUHELJ (Croatia) 22 and 23 may 2024
CONFERENCE PATRONS
PARTNER
ACADEMIC PARTNER
Bernays
LIBERTAS
IRMO
HR PGOR

Dear Sir / Madam,

It is our pleasure to invite you to join us at the 17th International Conference Crisis Management Days, DKU 2024, which will be held on May 22 and 23, 2024, at Terme Tuhelj (Croatia).
Aware of the fact that we live in times of great changes in the landscape of our living and working space, this year we have expanded the themes of safety, protection, and rescue with topics on sustainability, climate change, and the application of artificial intelligence in crisis situations.

CMD 2024 Thematic Units:

1. **Climate Change**
   - Health, environment, and safety
2. **Sustainability**
   - Tourism, corporations, transportation
3. **Safety and Protection**
   - National and international security
   - Corporate and information security
   - Disaster risk reduction
4. **International and European Security**
   - Contemporary migrations
   - Professionalization of the armed forces
   - Future of European defence
5. **Communication and Technology**
   - Crisis communication
   - Application of artificial intelligence and new technologies in crisis management
6. **Analysis of Crisis Situations - Case Studies**

We invite researchers and experts to join us and participate in DKU2024, contributing to the conference with their papers and discussions in panels.

Conference Organizer: University of Applied Sciences Velika Gorica

Partners: **IFEH & CONRIS**

Conference sponsors and patrons will be available at www.dku.hr

2 CMD Crisis Management Days

Triumph and Innovation in the Alpine Region - The Success Story of 'Pitch Your Project 2023' Winners

In November, the final of the "Pitch your project 2023" competition unfolded in Strasbourg, France. The event was organized by EUSALP – the EU strategy for the preservation of the Alpine region. Two students from the Master's program in Sanitary Engineering at University of Ljubljana, Slovenia (Katja Dornik and Lara Erjavec), won the first prize, under the invaluable guidance and unwavering support of their mentor, assistant Alen Erjavec, MSc.

The “Pitch Your Project” competition annually offers young individuals, aged between 16 and 25, to present their project ideas. The competition brings together young individuals from seven countries in the Alpine region: Germany, Austria, Switzerland, France, Italy, Slovenia, and Liechtenstein, all with the shared aim of collaboratively shaping a better future of the Alpine region.

At the prestigious event, Katja and Lara presented their project idea “T2T – From Trash to Treasure”. The project focuses on the introduction of the circular economy concept in the Alpine regions of Slovenia by combining the knowledge and experience of various craftsmen in the Alpine region of Slovenia. T2T will enable the introduction of circular economy principles, management of natural resources and stimulation of the development of the local economy. Through cooperation, they aim to strengthen the craft industries in the Alpine region and create a more sustainable and prosperous future. As a part of their project, Katja and Lara will develop an innovative application that will enable easy tracking and management of resources in alpine areas, thus connecting local craftsmen and farmers. The application will feature a map displaying all participating craft workshops and farms and will also be accessible to local population and tourists. Introducing the concept of a circular economy will contribute to maintaining a clean environment, promoting local businesses, and improving the quality of life in Alpine communities.

The final presentation was distinguished by a commitment to addressing key challenges in the Alpine region and simultaneously laying important foundations for promoting sustainable practices in the area. The first prize signifies not only success in the competition but also a step forward in realizing the vision of a more sustainable and connected Alpine region.

Sanitarian is Our Professional Identity

Charles D. (Chuck) Treser, MPH, DEAAS & Robert Powitz, PhD, MPH, RS, DLAAS
April 29, 2024

Larry Gordon has stated (2013) that "there are Environmental Health Professionals and professionals in Environmental Health." But who are these Environmental Health Professionals? Is there really an Environmental Health Profession? Let's look at some of the other recognized professions: Physician[1], Lawyer, Engineer, Nurse, etc. What do they all have in common? They all have one thing in common – a single word that is easily understood to mean a person with specialized education, knowledge, and skills to practice in a particular domain. Environmental Health Professionals have specialized education or training, knowledge, and skills to practice in the broad field of Environmental Health. So, why don't we Environmental Health Professionals have a single word that defines our profession. On wait, we do, or at least we did. The single word that best describes the breadth and depth of the field of Environmental Health is "Sanitarian".

Why is a single word for a profession so important? Because it speaks to the specialized knowledge and skills that the professional brings to the practice. Being a Sanitarian means that we have specialized knowledge and skills in assessing and controlling environmental risks to human health and well-being. It speaks to our common purpose and core values of protecting the health of the public from environmental risks. It is what binds us together as a profession.

The work of the professional Sanitarian has greatly expanded over the course of our history, as new knowledge of environmental risks were identified and new specialties were added to our profession; just as the knowledge base of physicians, nurses, engineers, etc. have expanded over the years. And, the work of the Sanitarian will continue to expand over time. It wasn't that long ago that hazardous waste management and emergency preparedness and response were included as specialties within the field of Environmental Health. Currently we are incorporating the challenges of climate change as it impacts many of the Environmental Health specialty areas. The professional stays abreast of current developments and adapts their practice incorporate the current science and technology.

Common criticism of using the term Sanitarian to describe our profession:

- "But, the word is old fashioned, even anachronistic; nobody even remembers what it means any more."
- "It is too closely associated with garbage and sewage".
- "**It does not describe what we do!**

Well guess what, neither do any of the names of the other professions describe what they do. Physician, Lawyer, Engineer, Pharmacist, Veterinarian, Nurse, Teacher; all of these are immediately recognized by the public. Yet none of them tell us what the practitioners of these professions actually do! A physician may be a general practitioner, a podiatrist, or a brain surgeon, or any one of dozens of other specialties; an engineer may be a civil engineer, an electrical engineer, a mechanical engineer, or a chemical engineer; and so on. We argue that the mistake that we, as a profession, made some 70 or 80 years ago was to confuse the name of our profession with a job title. By substituting job titles, like EH Specialist, Industrial Hygienist, Safety Officer, Environmental Protection Specialist, etc., etc.; we only succeeded in confusing the public, and minimizing the importance of our specialized knowledge, skills, and abilities.

[1] We have purposely avoided the term "doctor" in this essay because while many people will assume that when a person is referred to as a doctor, that he or she is a medical doctor, however there are many, many doctors who are not medical doctors. There are science doctors (DSc), physical therapists (DPT), doctors of law (JD), doctors of human letters (DHL), etc., etc. or, the least descriptive of all, doctors of philosophy. Without further clarification, the term doctor does not indicate what the area of specialized knowledge and skill might be.

For every profession it is necessary to further describe the particular specialty for which the person is qualified and in which she or he practices. And, like every other profession, Sanitarians need to specify what it is that they do professionally. Whether the Sanitarian works as an Environmental Health Specialist, an Industrial Hygienist, a Safety Officer, a Consumer Protection Specialist, and Air Quality Control Specialist, an Environmental Protection Specialist, an Environmental Health Researcher or Academic, etc., they are all doing the work of a Sanitarian.

How many times have you heard those of us that work in the field of Environmental Health complain about being in an invisible profession? We couldn't even begin to count the number of times we have heard this over the past 50 odd years. So, we asked ourselves why is this? Every other recognized profession is identified by a single word. The name of a profession speaks to the specialized knowledge and skills of the practitioner, rather than to what they may be doing in their practice.

But doesn't the term Sanitarian come from the same root as sanitation? Yes, they both are derived from the Latin word "*Sanitas*". But contrary to what some may think, for the Romans *sanitas* meant much more than a concern with feces and garbage[2]. The best translation of *sanitas* is "health". And, for the Romans, health was understood to convey something very similar to the World Health Organization's definition of "being the state of complete physical, mental and social well-being". (1946) Thus, the Sanitarian is a professional who identifies, characterizes, and controls the risk of biological, chemical, and physical agents of disease and injury in human populations.

Moreover, having a common root meaning different things is not unique to our Profession. As just one example, both the terms "economist" and "ecologist" are derived from the Greek word *ecos*, or house. One counts the house (or monetary aspects), while the other studies the entirety of the place in which we all reside. Very few people would confuse the two. So then is it not our job to help people understand the difference between sanitation (the state of cleanliness or healthfulness) and the Sanitarian (the professional that ensures that environmental conditions exist to prevent or minimize environmental risks to life, health, and safety of the human community)?

But the term still sounds so old fashioned. The same arguments were made 70-80 years ago about the need for a more modern term that included the word environment; one that charted a course into the future. Instead, we ended up charting a course into oblivion. Had we embraced the name of our profession back then, and used it as an opportunity to educate, maybe we would have the same recognition, respect and financial status as many of the other professions.

Is it too late to recapture the name of our profession? We don't know, but we do know that if we continue on the path of using job titles instead of claiming our profession that we will continue to be invisible.

Should we accept the challenge of explaining what and who the Sanitarians are and their importance to each person's health, safety, and well-being, maybe we can raise the stature (and income) of our colleagues. No one is born knowing what a physician, nurse, lawyer, or engineer is, they have to be taught what those terms mean. We argue that it is our responsibility to educate the public on what the term Sanitarian means. If we are able to better explain the Sanitarian as a profession, might we not also gain the same status, and support, as the other professions?

[2] If you think that the connection to sanitation makes the term objectionable, think about the other bio-medical professions. The term "physician" comes from a physic. Not the Physics that you avoided in high school, but the physics administered by medieval practitioners to produce a bowel movement. Or "nurse" comes from the medieval need for a wet nurse. A lactating woman who could nourish a child whose mother had either died (as was all too common) or was too busy. If these professions could live down their origins, then living down a connection to health (*sanitas*) should not be hard.

If we can do this, in addition to a young mother telling her child that they are going see the doctor today, she might say “the nice Sanitarian is coming by today to check the water in our well to make sure that it safe for you to drink.”

And unlike Physicians, Sanitarians still make house calls!

Clarification of terms used.

Profession: **Sanitarian**

Field of Practice: **Environmental Health**

Specialized Knowledge and Skills: **Assessing and managing environmental risks to human life, health, safety, and well-being from biological, chemical, or physical agen**ts.

Specialty Areas: **Air Quality, Food Protection, Hazardous Materials, Housing, Occupational Health & Safety, Recreational Areas & Facilities, Solid Wastes, Wastewater, Water Quality, Zoonotic and Vector-borne Disease Control, among many others.**[3]

Short definition: **Environmental Health is study of environmental factors and conditions that impact human health and wellbeing, and the development and implementation of control strategies and programs.**

One sentence elevator speech.
The Sanitarian is the professional with specialized knowledge and skills in assessing and controlling environmental risks to human health and well-being…. Discuss!!!

[3] There are also a number of issues that cut across many of the specialty areas, such as emergency preparedness and response, and Climate Change in which the Sanitarian works with other professionals to address the risk to human health.

Learnings from a student placement

From Mozambique to Bendigo, new resident Karson Opincai relished the opportunity to complete a university student placement with the City of Greater Bendigo's Environmental Health unit.

Karson and his family settled in Bendigo in June 2015, when his wife began a Masters at La Trobe University.

Karson had already established himself as an Agriculture Manager with an Agricultural Engineering degree under his belt from Eduardo Mondlane University in Mozambique, but he was keen to pursue further qualifications in Australia.

He began a Post graduate Diploma in Environmental Health in Practice online at Flinders University and was seeking a practical student work placement as part of a requirement of his post graduate qualification.

"With my family settled in Bendigo, I was delighted to see the opportunity for a university student placement was offered with the City's Environmental Health unit," Mr Opincai said.

"I was lucky to get the three-month placement. I have gained knowledge and experience, and it has been fantastic to accompany senior staff out in the field, visiting businesses for food inspections and going on sites for septic tank permits and noise complaints.

"The work placement was very fulfilling as I was also given a special project. It was good to gain a better understanding of working with environmental health policies in the real world, which complemented my post graduate studies.

"It also confirmed that I had transferable skills from my working life in Mozambique. The experience at the City has turned out to be much more than I expected. The team in Environmental Health has been very welcoming and even though I was on a student placement, I was treated as an equal in the team which demonstrated the great working culture for staff at the City."

City Coordinator Environmental Health Varinder Sapehiyia said the university work placement was a perfect opportunity to support new talent coming through tertiary education.

"The City's Environmental Health unit is keen to support university student placements and work closely with universities to build rapport in the environmental health network. I really like mentoring and recognise its importance in nurturing new talent to be the best they can be. We have a significant skills shortage in environmental health across Australia and this is a positive step for the industry as it faces these ongoing challenges," Mr Sapehiyia said.

"It is a win-win to give students exposure to environmental health in the real world and to complete their studies with comprehensive learnings from an established student placement. We ensured Karson was given support and guidance during his placement with us. He was also given the opportunity to pursue and complete an important project that benefited his post-graduate studies but was also integral to the team's activities.

"During his time, Karson was able to experience theory in practice. This was an invaluable experience, as Environmental Health Officers develop, regulate, educate, enforce, and monitor laws and regulations governing public health, to promote good health, hygiene, and environmental practices to keep the community safe.

"Karson was able to bring a new perspective and fresh ideas, experience, up-to-the-minute training and provide new insights on contemporary techniques being taught in university. It is great for the team to have someone on placement who can contribute to our commitment to continuous improvement.

Karson received a distinction in his post graduate studies and is excited to be pursuing a career in environmental health in the future. gb

What do Environmental Officers and Technicians do at the City?

The City's Environmental Health Officers are involved in a wide range of roles to ensure high standards in public health for the community.

The roles are diverse, from inspecting food premises and septic tanks to environmental issues such pest control, unreasonable noise, mosquitoes and air quality monitoring.

They also deal with local accommodation businesses and beauty, hair and skin penetration businesses (such as tattoo outlets), which are inspected and registered to ensure public health and safety. It's a multi-skilled job with a focus on customer service. Officers work closely with businesses to help them comply with permit and environmental regulations, enforce the law and assist operators, and protect, promote and improve public health.

The BSc (Hons) Environmental Health programme at Liverpool John Moores University (LJMU) looks to continue the long-standing tradition of Environmental Health in the city of Liverpool. Being home to the first Environmental Health Practitioner (Thomas Fresh in 1844) and the first Medical Officer for Health (Dr. Duncan in 1847), LJMU looks to develop the next generation of Environmental and Public Health Practitioners, through its BSc and MSc programmes.

As part of the BSc programmes, students undertake a dissertation of approximately 10,000 words and in order to celebrate their work, all student abstracts are published in the Public Health Institute Journal – the latest edition can be accessed via the link https://openjournals.ljmu.ac.uk/PHIJ/issue/view/144/82

Below are the abstracts from four of this year's graduates, all of whom achieved a first-class degree, which cover a range of Environmental Health topics including: food waste, air quality, food labelling and food safety.

For further information about this research, the work of the PHI or the programmes it offers please contact Graeme Mitchell (g.k.mitchell@ljmu.ac.uk).

Chloe Dove:
The United Kingdom (UK) produces 6.6 million tonnes of household food waste annually; 70% of this was previously edible food (WRAP, 2021). This is nearly £14 billion of wasted food every year and equates to about £60 per month for an average household, or the equivalent of eight meals a week. A study by Zero Waste Scotland (Acheson, 2019) showed that most students at university waste approximately £5.25 worth of food a week, or £273 annually. The aim of this study was to assess university students' attitudes, knowledge, and behaviour towards food waste. An anonymous online questionnaire was distributed, using convenience sampling, to university students in the UK via Canvas and university student forums. Students were asked questions to show their knowledge around use-by and best-before dates, purchasing behaviours and preparation habits. Participants were also asked about attitudes towards food waste and why they can or cannot prevent food waste in the home. Questions were also asked about how these students disposed of food waste. There were 138 responses. The results of the questionnaire showed that students generally understood the difference between use-by and best-before dates, but a small percentage did not. This increases the likelihood of food poisoning if food is consumed past its use-by date and would contribute to food waste if disposed of past its best-before date, whilst still being safe to eat. The results of this study also showed that many students do not write a shopping list or check food stocks before going shopping, which can contribute to impulse purchases and over-buying food, which is ultimately wasted. Many students also struggled to buy economically for small households and ended up preparing too much food, which could either be wasted or contribute to other public health issues such as obesity. The results also showed that university students struggled to dispose of food in an environmentally friendly way as many university accommodations do not provide food waste bins. These results are displayed in graphs and are further discussed with comparisons and differences from the literature. The recommendations that have arisen from this study include enforcing legislation to ensure that food waste is disposed of in an environmentally friendly way and ensuring there are methods of food waste disposal in university accommodations that do not send the waste to landfill. Recommendations were also made for educational campaigns to increase awareness of food safety and the importance of proper food preparation to ensure food is not wasted unnecessarily. The researcher also felt a qualitative approach to this study would gather more in-depth opinions from participants.

Keywords: Food waste, food safety, purchasing habits, preparation habits, waste disposal methods

Drew Gibson

The primary aim of the study was to explore the levels of Particulate Matter 2.5 within the area of Birkenhead Park and the impacts to health. To enact this, a methodology was developed to carry out an air survey of the park. This involved surveying three separate routes: external, outer, and internal, with a Dylos air monitor and the Strava mobile app simultaneously, in order to create an annotated map to determine levels of PM 2.5 within the park. The results of the air survey presented unexpected findings, which revealed that the Internal route of the park had the highest mean concentration of PM 2.5 at 6.92µm3. The external and outer routes measured at 6.27µm3 and 6.37µm3 respectively. PM 2.5 concentrations measured in this study did not differentiate greatly from previous measurements of the area, from a nearby AURN monitor. The study methods were shown to be a novel concept in comparison to other studies investigating air quality, which often collect data from a singular point over a long period. The intricate aspect of the air survey routes in this study allows results to clearly highlight any areas of lower air quality within the air survey area, which would allow more informed actions to remedy areas of concern. Recommendations based upon this study revolve around enhancing the mitigation of PM 2.5. Examples of such recommendations include: improving the durability of road surfaces around urban green spaces to lessen the amount of particle resuspension, introducing a border of coniferous trees to provide a natural barrier from PM 2.5 and improving the durability of certain vehicle parts such as brakes and tyres which can produce PM 2.5 through typical use.

Keywords: Particulate matter 2.5, air quality, air pollution, urban green space, air quality survey

Grace Gribbin

Many individuals fail to read, understand, or comply with the information presented on food labels, such as ‘best-before’ and ‘use-by’ dates, allergen information and nutritional information. Various studies have found links between failing to check and understand the items on food labels, and unhealthy dieting, allergenic reactions, food-borne illness, and excess food waste. These impacts have negative implications for public and environmental health, and often lead to economic loss. Although many previous studies have investigated the knowledge, attitudes, and practices of students regarding food labelling, there was a gap in literature for up-to-date research involving United Kingdom (UK) university students and food labelling. Therefore, the aim of this research was to investigate the knowledge, attitudes and practices of university students studying in the UK, regarding food labelling on pre-packaged food. This study hoped to gain an insight and answer questions on students’ levels of knowledge and beliefs, as well as purchasing and consumption practices when it comes to pre-packaged food labels. This quantitative study collected data through an online questionnaire which was posted on various social media platforms such as Instagram, Snapchat, and Facebook. A convenience sampling method was used, collecting responses from 66 students, with findings including demographic information, and the knowledge, attitudes, and practices that they had surrounding food labelling. Microsoft Excel was used to present the findings in graphs and tables. Results showed that 98.5% of students agreed to the importance of checking best before and use-by dates, and displayed a satisfactory level of knowledge on the meanings behind them. However, many students did not comply with the corresponding disposal practices, as 34.8% of students reported only disposing of a product with a ‘use-by’ date if the quality seemed poor. Almost half of students did not read the nutritional information on food labels. Older age groups of students, and those who lived at home with family, displayed the most food labelling knowledge. Students who were not responsible for purchasing food that they ate displayed less knowledge than students who had at least some food purchasing responsibility. Unfortunately, the questionnaires lacked responses from certain groups of individuals, for example, some levels of university study (Masters and PhD), older age groups and purchasing responsibility levels. Therefore, the researcher recommends that further research targeting these groups of students should be carried out to gain a better insight and to represent all UK university students. Further recommendations by the researcher to improve public and environmental health involve new

clubs/campaigns introduced by the university, which encourage and explain the importance of correct food labelling practices; universities producing digital guides with food safety tips; the NHS producing posters to be displayed in university buildings, detailing the negative consequences of a poor nutritional diet; and the incorporation of education surrounding expiry dates into the school curriculum.

Keywords: Food labelling, pre-packaged food, university students, knowledge

Jaleela Sambo

Food-borne illness is a major public health concern that results in over 2.2 million deaths per year in the United Kingdom (UK) due to consumption of contaminated food. Studies conducted worldwide have noted shortcomings in food safety knowledge, attitudes, and behaviour among university students. Although students themselves are not considered to be at high risk, there are broader implications, as they will eventually become caregivers for their households and a majority will be responsible for vulnerable groups in their immediate environment. The study aimed to explore the overall food safety knowledge, attitudes, and behaviours of UK undergraduate students and to compare the relationship between their knowledge, attitudes and behaviour and demographic characteristics. To gather data for this study, a quantitative research design was employed using an online questionnaire as the data collection method. The questionnaire was distributed through the researcher's social media page, Canvas and with the help of a gatekeeper to recruit Public Health Institute students. Data analysis was conducted using SPSS (version 27) and Spearman's correlation was used to measure association between variables. The sample for this study consisted of 54 undergraduate students in the UK, with half of the respondents being between 18-25 years, with more than half being female. The mean knowledge score was 3.31 out of seven questions. There was a weak positive correlation found between food safety knowledge and behaviour scores [r=0.168], as well as a weak positive correlation between food safety attitudes and behaviours (r=0.295). The study found that female respondents had better food safety knowledge, attitudes, and more hygienic food behaviours. Most respondents did not correctly answer questions related to keeping foods at safe temperatures and cross-contamination. Additionally, participants rarely practiced using a thermometer to determine correct temperatures of foods and they discarded leftover food prematurely. The results can help students to increase their knowledge and awareness of food poisoning. The study highlights the need for educational initiatives, particularly in the context of food insecurity for this population.

Keywords: Food safety, knowledge, attitudes, practice, undergraduate students, university students

University adverts

University of Applied Sciences Velika Gorica (UASVG)

UASVG started to operate in 2003 with five professional three-year study programmes: Humanitarian demining, Pyro technology, Computer Systems Maintenance, Motor Vehicle Maintenance and Aircraft Maintenance. It was the first private university of applied sciences from the field of technical sciences in the Republic of Croatia. The founder of the UASVG is the City of Velika Gorica. The basic function of the studies is to implement the teaching activities of the approved programme and to encourage the development of all scientific- professional teaching disciplines that are represented or ought to be represented on the study,based on the science and the profession, and with the intent to approach the level of standards worldwide.

Study at UASVG

University of Applied Sciences Velika Gorica offers study programmes that are interesting to the young people from Europe, as well as from other parts of the world. From the very beginning the University of Applied Sciences has been developing mentorship approachbased on the understanding and better relations between students and professors.

What are the advantages you have as a student at UASVG

High-quality acquisition of knowledge and skills in modern equipped premises, practical classes organised in cooperation with the industry, and a number of other possibilities for successful study are some of the advantages of the University of Applied Sciences Velika Gorica. The UASVG programmes have been adjusted to actual labour market needs.

Undergraduate professional study programme:

Management in Crisis Situations is a study programme intended for decision makers and/or people who provide professional support to decision makers in legal entities and units of local and regional administration, state administration units, and especially the protection andrescue system in the police and the army. Disasters, as specific crisis states, occur when accidents or crises caused by forces of nature (floods, fires, earthquakes) or human activity (environmental impacts, terrorism etc.) affect people to such an extent that the affectedpopulation cannot control the course of events and successfully deal with the inflicted blows, losses and damage. The frequency and severity of disasters can be greatly reduced, or the effects mitigated if more attention is paid to the forecasts, observations, planning the provisionof aid and general preparedness for adequate crisis or disaster response in case it occurs.The competences of graduated experts from this study programme include planning and implementation of preventive measures to prevent and mitigate the effects of crises or disasters in business enterprises or human environment in general, as well as the provision of professional assistance and coordination of professional teams and equipment after a crisis ora disaster.

It is the only such study programme in Croatia and in the entire South-eastern Europe, which qualifies future experts for the needs of the crisis management system and the system of protection and rescue. By graduating, the students acquire knowledge and skills for independent solving of crisis management problems for preventive action, managing theprocess of collecting and processing information, proposing procedures and solutions, and performing the management process.

Professional title upon graduation: professional baccalaureus/baccalaureate engineer of Management in Crisis Situations

Specialist diploma professional study programme:

Crisis management is a study programme intended primarily for persons who are involved in protection and security aspects of crises in the activities of legal persons, industry, local and regional administration bodies, and government administration bodies. Upon graduation the students acquire specialist knowledge and competences for independent solving of problems in crisis management, managing processes and management systems of security and protection in public and private sector, especially in industry at the national and international level, as well as harmonizing the activities with the system of managing the functional activity of the organisation.

Professional title upon graduation: professional specialist engineer of Crisis management

Contact

University of Applied Sciences Velika GoricaZagreba ka 5

10410 Velika Gorica, CroatiaPhone: 01/62 22 501

e-mail: info@vvg.hr

Web site:http://www.vvg.hr

Facebook https://www.facebook.com/veleucilistevgYoutube video
http://www.vvg.hr/index.php?option=com_content&view=article&id=1275&lang=hr

Google map http://www.vvg.hr/index.php?
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- MSc Air Pollution Management and Control – Committee of Heads of Environmental Sciences accredited.

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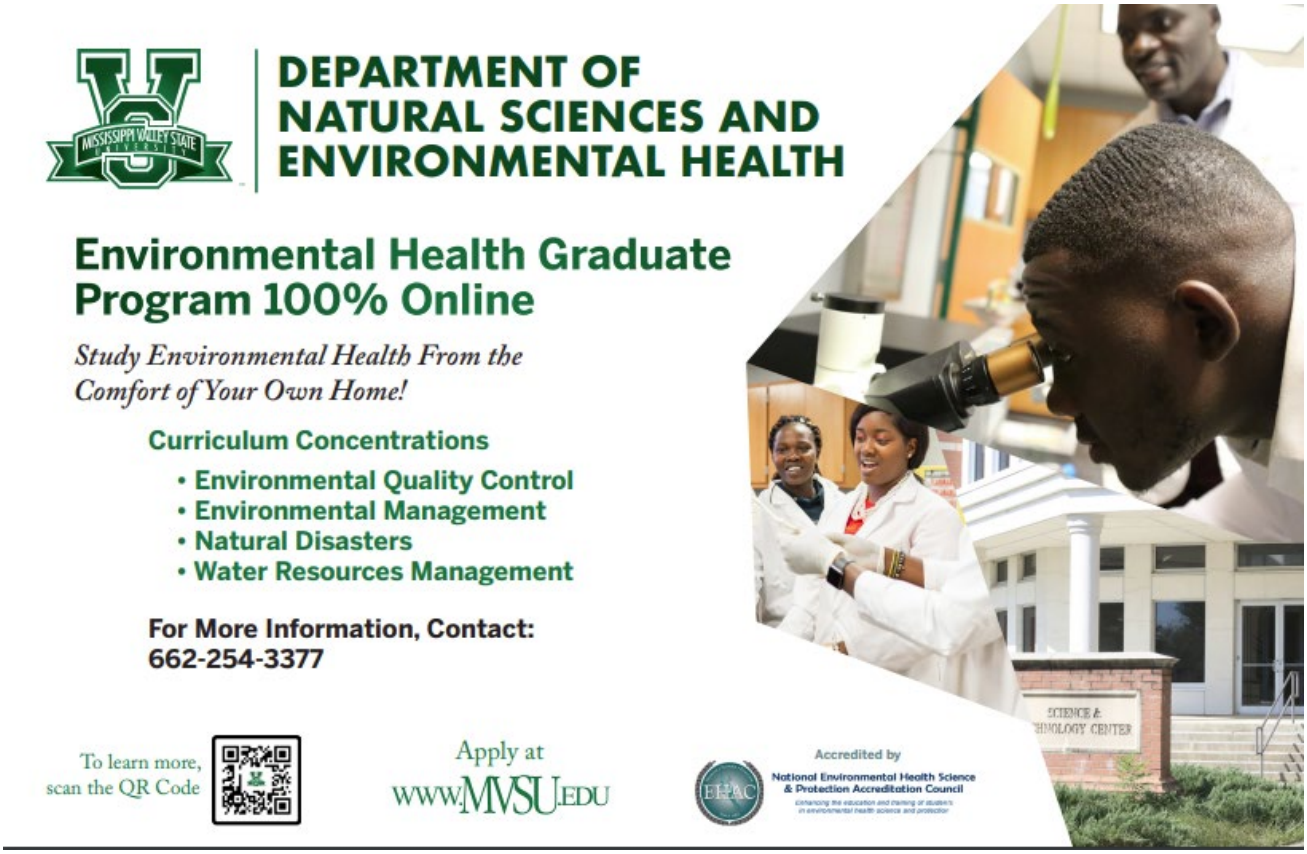
To discuss the courses in more detail please contact either Zena Lynch (z.lynch@bham.ac.uk), Surindar Dhesi (s.k.dhesi@bham.ac.uk) or Zongbo Shi (z.shi@bham.ac.uk)

www.birmingham.ac.uk/gee

Mississippi Valley State University



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Environmental health professionals are at the forefront of designing and improving the public's health and wellbeing.

1. Have you ever wondered what happens behind the scenes of restaurants, shops, businesses, and government?
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3. Do you want a degree that leads to a career where you are out of the office meetingpeople and dealing with different challenges each day?
4. A degree that has very good employment prospects, locally and internationally,in well paid graduate jobs?
5. Would you like to study on a course that provides this, plus lots more?Then come and study Environmental Health at Ulster.

Our graduates are equipped to find employment in a wide range of environmental healthactivities across public, private, and voluntary sector organisations. Environmental Health Practitioners (EHPs) can take their skills into a huge variety of roles. It is a careerwhere you are dealing with different challenges every day.

This BSc (Hons) Environmental Health programme has great strength in delivering the practical and academic skills required for a career in environmental health includingproblem solving, communication, research, and management skills. It also aims to facilitate.
the development of your own personal, communication and intellectual abilities.

The course includes the core subjects of food safety management, health and safetyat work, environmental protection, housing, and public health. The areas of sustainability, quality of life, health inequalities, law and spatial planning are also integrated throughout the programme.

The BSc Environmental Health course is accredited by both the CIEH and IOSH The course scores consistently high for student satisfaction (93% student satisfaction) with 95% of graduate in work or further study 15 months after graduation. To find out more visit www.ulster.ac.uk or contact Lindsay Shaw, Course Director, at email l.shaw@ulster.ac.uk

MSc – Global Strategy in Environmental Health and Sustainability (Distance Learning)

This new programme has a strong international theme and focuses on the global role of environmental health in protecting communities and delivering a healthy, sustainable future. A perfect choice if you are passionate about the future health and well-being of our planet and its inhabitants.

The ethos of the course reflects **critical action 3** from the 3rd International Federation of Environmental Health (IFEH) Academic World Conference on Environmental Health, April 2019, Kampala, Uganda, specifically aimed at the role of academia in providing advanced education programmes and research to help facilitate the role of Environmental Health as "*a cornerstone to achieving the Sustainable Development Goals*".

Delivered **entirely by distance learning, as part-time or full-time options**, it will enable you to study at a time and pace of your own choosing, engage with, and learn from, a diverse pool of peers.

The core principles of environmental health are embedded throughout the programme, aligned to the CIEH Professional Standards Framework, and directly linked to the attainment of UN Sustainability Goals. It will equip you with the critical thinking and problem-solving skills necessary to make a real impact in this field. Throughout each element we link the cross-cutting themes of, policy, strategy, and intervention. You will be equally at home in a strategic or operational role, in a local or global setting.

Through an engaging on-line environment, you will cover topics **including food safety and security, environmental protection, sustainable technologies, emergency planning, resilience, housing and communities, international and human rights law.** Your research module will focus on the production of a journal article.

This MSc will be attractive for personal and professional development reasons. It will be equally attractive as a route to a rewarding career in the broad discipline of environmental health.

Contacts:

Sharon Moore, Admissions
T: +44 (0) 28 90366018
E: s.moore1@ulster.ac.uk

Mr Robert Cameron, Course Director
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Ruaha Catholic University (RUCU).

Ruaha Catholic University (RUCU) is the successor of Ruaha University College (RUCO) which was established by the Tanzania Episcopal Conference (TEC) under its Trust Deed of the Registered Trustees of Ruaha University College through the generous support of well-wishers (friends of RUCU) within and outside the country.

This is one among the university offering Bachelor and diploma of Environmental health with information Technology (BEHSIT). It is found in Tanzania in Iringa region. The university is endowed with practical and much field work to socialise the environmental health aspects such as inspection of premises.

Contact Us Through

Vice Chancellor - Ruaha Catholic University
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Phone: +255 27 02431
Fax: +255 27 02563
Email: rucu@rucu.ac.tz

Website: https://rucu.ac.tz

Cardiff Metropolitan University

Cardiff Metropolitan University has been delivering environmental health and public health qualifications for over 40 years. University employability statistics show that within six months of completing one of our undergraduate programmes 85% of our graduates have entered professionally relevant employment in both private and public sector roles.

We host the following programmes:

BSc (Hons) Environmental Health – with unique triple accreditation by the CIEH, Institution of Occupational Health, Safety and Wellbeing (IOSH) and Institute of Environmental Management and Assessment.

MSc Applied Public Health – developed in line with the Public Health Skills and CareersFramework for new entrants into the profession or those wishing to develop their careers.

MSc Occupational Health, Safety and Wellbeing – accredited by IOSH and available as adistance learning qualification whilst you are working full time.

MPhil/PhD/Professional Doctorate degrees – with three experienced supervisors focusingentirely on these areas.

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Faculty of Health Sciences,
University of Ljubljana

Univerza v Ljubljani
Zdravstvena fakulteta

doc. dr. Andrej Ovca, dipl. san. inž.

Oddelek za sanitarno inženirstvo / Department of Sanitary Engineering

Zdravstvena fakulteta / Faculty of Health Sciences

Zdravstvena pot 5, SI-1000 Ljubljana, Slovenija / Slovenia
T.: +386 1 3001 182
andrej.ovca@zf.uni-lj.si, www.zf.uni-lj.si

Slovenian association of public and environmental health professionals has reviewed activities through which their members fulfil their mission in the field of pandemic prevention at various professional fields and in different institutions of their employment. Our colleagues from the field selflessly shared their experiences during the COVID-19 epidemic. Through their responses four major areas of their engagement were identified.

First group (employed at National institute of Public Health) is in charge or is collaborating as a member of interdisciplinary groups which plan and recommend general and specific hygienic and technical measures for epidemic management on a national level.

Second group (Employed in hospitals, nursing homes, kindergartens, food companies,companies providing service in the field of health and safety at work, drinking water supply and waste management public companies) implement these measures in individual facilities and working processes.

Third group executes various tests and measurements for their clients.

Fourth group inspects compliance with measures or recommendations as a part of official control at municipal and national level.

According to the collected responses, effectiveness of Slovenian public and environmental health professionals is reflected in the extraordinary ability to cooperate with others, within the profession either in working groups with members of other professions.

Those of us employed at the faculty (besides transferring the pedagogical process to the virtual environment) provided professional support to all colleagues from practice who turned to us. Since the declaration of the epidemic in Slovenia, we carefully monitor the development of events at home and abroad, so that we will be able to prepare our next generations of sanitary engineers for this kind of challenges.

Our Faculty (Faculty of Health Sciences, University of Ljubljana) gives each year awards for the best final research work of students at each of the research fields. Inthe field of sanitary engineering programme master's thesis entitled "Fast fashion – health and social aspects on consumption habits and attitudes toward second-hand clothing among adolescents" was awarded. (See photos)

University of Michigan

University of Copenhagen

Head of Studies Department of Public Health
Global Health Section
furu@sund.ku.dk www.pubhealth.ku.dk

Peter Furu Associate Professor,

"Experience from recent major disasters, changes in the humanitarian field, thechanging nature of conflict, and climate change impact all have made it clear that a holistic approach to disasters and crisis management is needed to substantially reduce lossesand deal with new challenges the current system seems ill equipped to respond to. A coherent and holistic approach to disaster risk management is not without challenges. Decision have to be based on a politically, economically, socially, culturally, and environmentally sustainable foundation and rooted in sound development policies. Risk reduction needs to underpin and guide decisions in Preparedness, Response and Recovery planning and programmes. Professionals with an adequate knowledge base and the right skills are invaluable if these challenges are to be met.

In response to this demand, the University of Copenhagen is offering a one-year master programme, based on the above philosophy – a Master of Disaster Management.

To apply, please visit www.mdma.ku.dk.

You can contact us on e-mail mdma@sund.ku.dk

Obstacles to Environmental Progress
A U.S. perspective
Peter C. Schulze
OPEN ACCESS via
https://www.uclpress.co.uk/products/186377?utm_campaign=UCL22AF660J&utm_medium=listserv&utm_source=jiscmail#

For over 50 years I have initiated or taken part in many projects/schemes intended to improve food safety, with varying degrees of success. Training programmes and Food Safety Management Systems/HACCP are probably two of the most important. Unfortunately, training programmes, especially mandatory programmes, have mainly focused on food handlers and certification, instead of supervisor/management training and implementation of knowledge/competency. One of the few countries to use the competency approach was Ireland and I would recommend this approach for countries wishing to introduce mandatory training of food handlers and managers.

The US requirement for a Person in Charge programme is a great food safety initiative and one that was a part catalyst for the very successful Dubai Food Safety Programme. I am proud to have worked with Dubai Municipality to establish this programme which is still going strong and one of the reasons for Dubai having such high standards of food safety, especially in 4- and 5-star hotels and the tourist hospitality industry. Highfield has now taken this excellent programme a step further with three very important additions. The Manager in Charge of Food Safety (https://www.highfieldinternational.com/highfield-certified-programmes) must:

- Obtain 4 x L3 internationally recognised qualifications – Food safety, HACCP, Allergen management and Effective Auditing (takes 5 to 6 days).

- Carry out monthly recorded audits, including timely remedial action. The reports to be available for viewing by enforcement officers and third party or corporate auditors.

- Complete 24 hours of 'practical' CPD annually.

If managers and supervisors are to obtain relevant information and keep up to date with food safety incidents, we need to provide free, accessible reputable sites/platforms where food handlers/managers/trainers can get the latest accurate, science-based, reliable food safety information.

There are lots of sites available where information is provided, some good and some very poor, but how would most food handlers know the difference? Furthermore, many of the good sites don't provide the right kind of information and to get information you need to visit many sites. Managers don't haven't the time or inclination to spend time researching, they want a trusted site that provides them with all of the important information they need to keep their customers safe. This site should also allow them to ask for advice and take part in debates.

So Highfield, the largest UK provider of regulated food safety qualifications in the UK (also provides international qualifications in over 50 countries) has developed a LinkedIn Group (Highfield Food Safety Forum - https://www.linkedin.com/groups/4589568/) and a LinkedIn page; Highfield – Improving Food Safety (recently launched - to provide the latest international food safety information, advice and polls for access, free of charge, by anyone who has an interest in improving food safety. There are other larger LinkedIn Groups but from studying their content they are focussing on different objectives.

World Health Organization Global News

New courses on OpenWHO this month

We are pleased to announce the following courses that have recently been made available:

WHO/ICRC Basic Emergency Care: Conflict-Related Injuries: The modules in this course are designed to support first contact providers working in conflict settings, or those who may need to manage conflict injuries. It covers conflict trauma resulting from blast, penetrating, and burn injuries.

Response Preparedness for Zoonotic Disease Outbreaks Using a One-Health Approach: This online course introduces the concepts of the coordinated response to manage zoonotic disease outbreaks between sectors for animal health, public health, and the environment as well as other relevant stakeholders. In addition, it fosters understanding of the diverse perspectives of different stakeholders during an outbreak response.

Introduction to Dengue: This short course introduces dengue, providing an overview of the causative organism, vector, transmission, symptoms, diagnosis, treatment, and prevention of the disease.

Next Generation Sequencing for Influenza and SARS-CoV-2: From Sample Collection to Analysis: This online training explains the end-to-end workflow of NGS (Next Generation Sequencing), from sample preparation to the upload of genomic sequencing data to public-domain or public-access databases.

WHO Global School on Refugee and Migrant Health: The course consists of video recordings from the 2022 School, which focus on promoting capacity-building for improving refugee and migrant health.

Whole-of-Society Approach to Creating Healthy, Resilient, and Sustainable Cities: Harnessing South-South Cooperation for a Post-COVID Era: The course emphasizes a whole-of-society approach to managing complex risk and creating healthy, sustainable, and resilient cities with practical examples and useful tools.

Water, Sanitation and Hygiene for the Prevention and Care of Neglected Tropical Diseases: This course is specifically designed for governments, development agencies, civil society partners, and others working with them. It aims to help establish or strengthen collaboration between WASH and NTD actors.

Water Safety Planning for Urban Water Supply Systems: An Introduction: This course outlines the principles and steps of the water safety planning approach and presents the success factors that underpin effective and sustainable implementation. It also highlights how water safety planning can strengthen resilience to climate threats.

Superficial Fungal Infections: Training of Health Workers at National and District Levels on Skin-NTDs: This course explores the epidemiology, clinical presentation, diagnosis, and management of the most common superficial fungal infections globally.

Global Nutrition Targets Tracking Tool: This course is relevant to stakeholders who are keen to track nutrition progress around the world or interested in leveraging data to accelerate progress to improve nutrition outcomes among populations.

Chromoblastomycosis: Training for National and District-Level Health Workers: The aim of this course is to provide basic information for front-line health workers to recognize and treat chromoblastomycosis.

Managing Conflict of Interest in National Pharmaceutical Systems: This online training aims at supporting countries with practical guidance on preventing and managing conflicts of interest in public pharmaceutical systems.

Medical Equipment Electrical Safety Testing: This course provides methods for evaluating the electrical safety of medical equipment at a medical facility and actions to take following the evaluation.

We are pleased to announce that OpenWHO now has a total of 254 courses with learning resources spread across 72 languages. All courses can be accessed **here**. You can use the toolbar to filter courses by language and topic.

New training offerings on the End TB channel

The **End TB channel** includes courses that provide critical training on essential skills to facilitate the implementation of WHO's End TB Strategy based on sound ethics principles and due protection of human rights.

Two new courses were recently added to the channel:

Management of Tuberculosis in Children and Adolescents for Healthcare Workers

Tuberculosis and Mental Health

New course series on Noncommunicable Diseases for WHO Southeast Asia Regional Office

Noncommunicable diseases (NCDs) impose a major and growing burden on health and development in the South-East Asia Region. In the region, 62% of all deaths are due to NCDs, accounting for 9 million persons every year.

A series of four courses recently became available and focus on several NCD related topics of relevance to the Region. For a better learning experience, we recommend accessing the courses in the order listed below:

Course 1: HEARTS of NCD: An Integrated Approach to Management of Noncommunicable Diseases (NCD) in Primary Health Care

Course 2: Interventions for Noncommunicable Diseases in Primary Health Care

Course 3: Prevention and Management of Diabetic Foot Problems

Course 4: Palliative Care: Models of Service Delivery and Symptom Management

Monthly newsletter

You can access the most recent newsletter **here**.

As we approach the end of another impactful year, we want to extend our heartfelt gratitude to all members of our community for their unwavering commitment to learning, collaboration, and global health improvement through OpenWHO. In 2023, we've witnessed remarkable strides in our collective mission to provide accessible, high-quality learning resources in response to health emergencies and beyond, and we will continue our work and efforts in 2024 to share the latest health knowledge to save lives, reduce disease transmission, and protect the vulnerable.

Best wishes,

OpenWHO team

OpenWHO

Web: https://openwho.org
Mail: outbreak.training@who.int

Download the OpenWHO mobile apps for iOS and Android.

OpenWHO aims to equip all frontline responders with the knowledge they need to better contain disease outbreaks and manage health emergencies. It also aims to foster discussions, feedback and sharing of expert knowledge on public health.

For those involved in OHS review and sign up https://www.hse.gov.uk/

Elrha's Research for Health in Humanitarian Crises programme is funded by the UK Foreign, Commonwealth and Development Office (FCDO), Wellcome and the Department of Health and Social Care (DHSC) through the National Institute for Health Research (NIHR)

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Newsfeeds and information sources open to EH members.

(Please email the editor, any sources/links you have found that are not on this list).

Food Safety

www.foodnavigator-usa.com

www.foodonline.com

www.foodsafetynews.com

Development Aid

coleacp.org/

devex.com

Global perspectives

worldhealthupdates@who.int

Journals/ research

marketing@lancet.com

ukehrnet.wordpress.com

International Journal of Environmental Health Research – supported by IFEH.

Journal of Environmental Health – published by NEHA.

Archives of Environmental & Occupational Health

Environmental Health Perspectives

Environmental Health

International Journal of Hygiene and Environmental Health

Reviews on Environmental Health

Environmental Health Insights

Journal of Environmental and Public Health

Journal of Environmental Health Science and Engineering

National / Regional information

foodauthority.nsw.gov.au/

Academy of Higher Education

communication@advance-he.ac.uk

ENVIRONMENT-DISASTERS list

https://www.jiscmail.ac.uk

Health & Safety (UK)
https://www.hse.gov.uk/index.htm

Public Health England
https://www.gov.uk/government/organisations/public-health-england

Sphere Project
spherestandards.org

RESEARCH FOR HEALTH IN HUMANITARIAN CRISES
https://www.elrha.org/

Disaster Relief information sources
UNDRR

WHO -Preparedness environmental health emergencies

Relief web

The Health in Humanitarian Crises Centre

DEVEX https://www.devex.com/inside-development

COVID

https://www.worldometers.info/coronavirus/

COVID-19 Information Dashboard

Good academic/professional links

Key journal databases

CIEH REHIS NEHA EHA NZIEH

Greg Martin via LinkedIn

Disaster Management/Risk Reduction courses around the world

The UWI, Mona has an office of Disaster Risk Reduction.

OpenWHO is WHO's interactive, web-based, knowledge-transfer platform offering on-line courses to improve the response to health emergencies. OpenWHO enables the Organization and its key partners to transfer life-saving knowledge to largenumbers of frontline responders.
https://openwho.org/

CDC Learning Connection


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