# Abstracts of Oral Presentations-WADEM Congress on Disaster and Emergency Medicine 2019

## NON COMMUNICABLE DISEASES

### Application of National and Sub-National Indicators to Rank Needs of People with Life-threatening Conditions and Chronic Diseases Before, During, and After a Disaster

*Associate Professor Benjamin Ryan*[1], *Dr. Joseph Green*[2], *Associate Professor Richard Franklin*[3], *Professor Frederick Burkle*[4]

1. Daniel K. Inouye Asia-Pacific Center for Security Studies, Honolulu, United States
2. Pacific Disaster Center, Kihei, United States
3. James Cook University, Townsville, Australia
4. Harvard Humanitarian Initiative, Cambridge, United States

**Introduction:** Disasters can damage the essential public health infrastructure and social protection systems required for vulnerable populations. This contributes to indirect mortality and morbidity as high as 70–90%, primarily due to an exacerbation of life-threatening conditions and chronic diseases. Despite this, the traditional focus of public health systems has been on communicable diseases. To address this challenge, disaster and health planners require access to repeatable and measurable methods to rank and prioritize the needs of people with life-threatening and chronic diseases before, during, and after a disaster.

**Aim:** Propose a repeatable and measurable method for ranking and prioritizing the needs of people with life-threatening and chronic diseases before, during, and after a disaster.

**Methods:** The research began with identifying the risk disasters pose to people with life-threatening and chronic diseases. The data gathered was then used to develop indicators and explore the use of DisasterAWARE™ (All-hazard Warnings, Analysis, and Risk Evaluation) to rank and prioritize the needs before, during, and after a disaster.

**Results:** This research found people at greatest risk are those with underlying cardiovascular and respiratory diseases, unstable diabetes, renal diseases, and those undergoing cancer treatment. A sustainable method to help address this problem is to expand the use of DisasterAWARE™ (All-hazard Warnings, Analysis, and Risk Evaluation) to rank and prioritize needs at national and sub-national levels.

**Discussion:** DisasterAWARE™ has been successfully applied to the assessment and prioritization of disaster risk and humanitarian assistance needs in Southeast Asia (ASEAN, Viet Nam), Central America (Guatemala, El Salvador, Honduras, Nicaragua), South America (Peru), and the Caribbean (Jamaica, Dominican Republic). Using the indicators developed through this research, this proven methodology can be seamlessly and easily translated to rank and prioritize the needs of people with life-threatening and chronic diseases before, during, and after a disaster.

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### Determining Key Influences on Patient Ability to Successfully Manage Noncommunicable Disease After Natural Disaster

*Associate Professor Benjamin Ryan*[1,2], *Associate Professor Richard Franklin*[2,3], *Professor Frederick Burkle*[2,4], *Dr. Erin Smith*[2,5], *Associate Professor Peter Aitken*[2,6], *Professor Peter Leggat*[2,3,6]

1. Daniel K. Inouye Asia-pacific Center For Security Studies, Honolulu, United States
2. James Cook University, Townsville, Australia
3. World Safety Organization Collaborating Centre for Injury Prevention and Safety Promotion, Townsville, Australia
4. Harvard Humanitarian Initiative, Cambridge, United States
5. Edith Cowan University, Perth, Australia
6. Queensland University of Technology, Brisbane, Australia

**Introduction:** Natural disasters often damage the public health infrastructure required to maintain the wellbeing of people with noncommunicable diseases. This increases the risk of an acute exacerbation or complications, potentially leading to a worse long-term prognosis or even death. Disaster-related exacerbations of noncommunicable diseases will continue, if not increase, due to an increasing disease prevalence, sustained rise in the frequency and intensity of disasters, and rapid unsustainable urbanization in disaster-prone areas. However, the traditional focus of public health and disaster systems remains on communicable diseases, despite a low risk. There is now an urgent need to expand the public health response to include noncommunicable diseases.

**Aim:** To explore the key influences on patient ability to successfully manage their noncommunicable disease after a natural disaster.

**Methods:** A survey of people with noncommunicable diseases in Queensland, Australia, collected data on demographics, disease/condition, disaster experience, and primary concern post-disaster. Descriptive statistics and chi-square tests with Bonferroni-adjustment were used to analyze data.

**Results:** There were 118 responses to the survey. Key influences on the ability to self-manage post-disaster were access to medication, medical services, water, treatment and care, power, and

food. Managing disease-specific symptoms associated with cardiovascular disease, diabetes, mental health, and respiratory diseases were primary concerns following a disaster. Stress and anxiety, loss of sleep, weakness or fatigue and shortness of breath were common concerns for all noncommunicable diseases. Those dependent on care from others were most worried about shortness of breath and slow healing sores. Accessing medication and medical services were priorities for all patients post-disaster.

**Discussion:** The key influences on successful self-management post disaster for people with noncommunicable diseases must be reflected in disaster plans and strategies. Achieving this will reduce exacerbations or complications of disease and decrease demand for emergency health care post-disaster.

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## Disaster Risk Reduction and Health: The Potential of Health Registers for Public Health Monitoring

*Dr. Michel Dückers[1,2], Dr. Filip Arnberg[3], Dr. Christos Baliatsas[1], Dr. Lennart Reifels[4], Dr. Lise Stene[5], Dr. Joris Yzermans[1]*

1. Nivel - Netherlands Institute for Health Services Research, Utrecht, Netherlands
2. Impact, National Knowledge and Advice Centre for Psychosocial Care Concerning Critical Incidents, Partner in Arq Psychotrauma Expert Group, Diemen, Netherlands
3. Uppsala University, Uppsala, Sweden
4. Melbourne School of Population and Global Health, University of Melbourne, Victoria, Australia
5. Norwegian Centre for Violence and Traumatic Stress Studies, Oslo, Norway

**Introduction:** The Sendai Framework seeks to substantially reduce disaster risk and losses in lives, livelihoods, health, and other assets including persons, communities, and countries. The framework focuses on reducing mortality while increasing population wellbeing, early warning, and promotion of health systems resilience. The use of scientific evidence to inform policy and formulate effective initiatives and interventions is crucial to disaster risk reduction within health. Different instruments and methodologies are available to guide policy and operations. The potential value of routinely collected patient data from health registers is that they can provide pre-event health and comparison group data without burdening affected populations.

**Aim:** The current contribution aims to illustrate how health registers can help monitor the health impact of natural and human-made disasters.

**Methods:** Patient data from health registers of general practitioners and other health professionals, sometimes combined with other registers and data sources, have been utilized to monitor the health impact of disasters and environmental hazards in the Netherlands, Norway, and Sweden since 2000.

**Results:** Health registers allowed monitoring of mental health problems, medically unexplained symptoms, chronic health problems, and social problems. These were compared to groups not directly exposed. The health impact and care utilization was tracked after the fireworks explosion in Enschede affecting inhabitants of the neighborhood (2000; data range 1999-2005), children and parents after the Volendam café fire (2001; data range 2000-2006), Swedish survivors of the Tsunami in Southeast Asia (2004; data range 2004-2010), and parents of children affected by the terrorist attack on Utøya (2011; data range 2008-2014).

**Discussion:** Health systems with registers have an important advantage when it comes to the potential for monitoring population health, and perhaps offer early warnings of pandemics. However, data generation should be closely connected to policy-making before and during the planning and evaluation of public health intervention.

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## The Effect of Natural Disasters on Cancer Care: A Systematic Review

*Dr. Ralph Xiu-gee Man[1], Dr. David Lack[2], Dr. Charlotte Wyatt[3], Prof. Virginia Murray[4]*

1. Princess Alexandra Hospital, Brisbane, Australia
2. Department of Emergency medicine, Hervey Bay Hospital, Hervey Bay, Australia
3. Royal Brisbane and Women's hospital, Brisbane, Australia
4. Global Disaster Risk Reduction, Public Health England, London, UK

**Introduction:** As the incidence of cancer and the frequency of extreme weather events rise, disaster mitigation is becoming increasingly relevant to oncology care.

**Aim:** To investigate the effect of natural disasters on cancer care and the associated health effects on patients with cancer through the means of a systematic review.

**Methods:** Between database inception and November 12, 2016, Embase, ScienceDirect, MEDLINE, Scopus, PsycINFO, Web of Science, and CINAHL were searched for articles. Those identifying the effect of natural disasters on oncology services, or the associated health implications for patients with cancer, were included. Only articles published in English were included. Data extraction was done by two authors independently and then verified by all authors. The effects of disaster events on oncology services, survival outcomes, and psychological issues were assessed.

**Results:** Natural disasters cause substantial interruption to the provision of oncology care. Of the 4,593 studies identified, only 85 articles met all the eligibility criteria. Damage to infrastructure, communication systems, medication, and medical record losses substantially disrupt oncology care. The effect of extreme weather events on survival outcomes is limited to only a small number of studies, often with inadequate follow-up periods.

**Discussion:** To the best the authors' knowledge, this is the first systematic review to assess the existing evidence base on the health effects of natural disaster events on cancer care. Disaster planning must begin to take into consideration patients with cancer.

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