SHORT COMMUNICATION

Flood preparedness in the WHO European Region: paving the way

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ABSTRACT

Flooding is one of the most commonly experienced natural disasters in the WHO European Region. In the Balkans, severe floods have the potential to cause serious harm to the health of the population and health services to the point of requiring international support. In 2014, a period of heavy rainfall in the Balkans resulted in such an emergency, with major health infrastructure and financial implications. The WHO Regional Office for Europe provided emergency support within the WHO Emergency Response Framework during the flood. After the event, WHO and the health authorities involved identified lessons learned from the experience and emphasized the importance of strengthened preparation for emergencies. Since 2014, the Regional Office has worked with countries, partners and other stakeholders to inform the development of two tools to be used to bolster Member State preparation for floods: the flood preparedness planning guidelines and the flood preparedness checklist.

Keywords: EMERGENCY PREPAREDNESS AND RESPONSE, HEALTH SYSTEMS STRENGTHENING, PUBLIC HEALTH, EUROPE

INTRODUCTION

In the WHO European Region, floods are one of the most common disasters, causing extensive damage and disruption of health and health services. The health of a population can be affected through contact with flood waters or indirectly from damage to infrastructure, ecosystems, food and water supplies or social support systems *(1)*. Two thirds of deaths associated with flooding are from drowning, and the other third result from physical injury and trauma, heart attacks, and secondary causes such as electrocution, carbon monoxide poisoning and fire. Flooding endangers the continuity and delivery of emergency and routine health services through the flooding of or damage to health facilities and may lead to population displacement. Loss or degradation of infrastructure, such as the water supply and electrical power, transportation and communication capacities, is common *(2)*. Floods may lead to major microbial and chemical hazards that leave entire populations vulnerable to waterborne and vector-borne diseases *(3)*. The floods in May 2014 were a prime example of such devastation in the European Region, particularly in Bosnia and Herzegovina, eastern Croatia and Serbia.

In the face of emergencies like this, the strengthening of the national level to adequately prepare and respond or to support the local response is of the utmost importance for WHO *(4)*, especially as many countries lack the resources, supplies and/or training to enable them to do so.

The aim of this short communication paper is therefore to summarize key issues of the WHO 2014 flood response in the Balkans and the ensuing development of two flood preparedness tools.

LOCAL CONTEXT

On 13 May 2014, Cyclone Tamara triggered heavy rainfall in the Balkans, resulting in flooding and landslides across Bosnia and Herzegovina, eastern Croatia and Serbia.

More than 2 million people were affected across the three countries, primarily in Bosnia and Herzegovina and Serbia *(5)*. The disaster claimed the lives of over 60 people, caused an untold burden of morbidity, and displaced more than 85 000 people, many of whom were evacuated to collective shelters.

The flooding disrupted public services for weeks, and partially damaged or destroyed over 40 health facilities in all three countries *(6)*. Beyond the impacts on life and health, the financial implications of the floods were immense: the affected countries were confronted with the urgent restoration of water and energy supplies, the reconstruction of houses and public buildings, as well as the rehabilitation of livelihoods *(3)*. The estimated cost to the affected countries' health sectors alone came to more than €2.5 million. International donors committed €1.5 billion to address the immediate needs.

KEY ISSUES OF THE WHO RESPONSE TO THE FLOOD

Within the Emergency Response Framework, WHO is tasked with delivering on four critical functions: leadership, information, technical expertise and core services. These functions are essential to the response itself, and to the preparation and readiness of Member States for future disasters or events. In emergencies, when requested by a Member State, WHO provides leadership and coordination of the health sector/cluster response in support of the national and local health authorities. It coordinates the collection, analysis and dissemination of essential information on health risks, needs, gaps and performance. WHO provides technical assistance with partners or by covering critical gaps as needed and it supports core services related to logistics and administration *(7)*.

During the emergency response to the Balkan floods, Bosnia and Herzegovina and Serbia each issued a state of emergency and requested international assistance. The emergency notification triggered a large-scale response from all levels of WHO. In the following days, the WHO Global Emergency Management Team identified this crisis as a Grade 2 emergency *(8)* at which point the Regional Office initiated emergency deployments of 12 experts from the Regional Office and the European Centre for Environment and Health in Bonn, Germany, to Bosnia and Herzegovina and Serbia as an emergency support team. Once in country, the team activated and led the health cluster in close cooperation the different health authorities in Bosnia and Herzegovina. Further WHO emergency staff were deployed to support the Ministry of Health and the WHO Country Office in Serbia. In immediate response to the emergency and to help meet the additional burden on the still-functioning health facilities, WHO procured Interagency Emergency Health Kits for Bosnia and Herzegovina and Serbia; each kit contains medicines and supplies to cover the basic health needs of up to 10 000 people for three months. Additionally, WHO experts worked with the health authorities in Bosnia and Herzegovina, Croatia and Serbia on vector-control measures and developed a common strategy in flood-affected areas to avoid outbreaks of vector-borne diseases *(6)*.

Thus, WHO provided comprehensive public health advice to health authorities, as well as technical guidance and expertise. It coordinated health partners, donors and stakeholders, and managed the regional communication and information platform with regard to the emergency and potential public health threats.

LESSONS LEARNED

Following the emergency response, the Regional Office held two lessons learned workshops with the Ministries of Health of Bosnia and Herzegovina, Croatia and Serbia. The major conclusions of the workshops were that:

- Bosnia and Herzegovina and Serbia lacked a proper national health emergency response plan;
- equipment and staffing of health authorities and first responders were insufficient;
- Serbia lacked legislation to allow the importation of non-registered drugs even during an emergency;
- the political division of Bosnia and Herzegovina posed a challenge for the procurement of essential medicines and supplies.

In summary, one of the most valuable lessons was that of the importance of preparedness and having the appropriate materials and plans in place to enable the Member States to respond effectively to an emergency. Serbia, with the support of the Regional Office, updated and strengthened its national health emergency response plan, introduced an emergency operations centre, conducted a flood simulation exercise and ensured that national staff participated in relevant Regional Office capacity development.

Because of the need to further guide Member States, WHO developed the Strategic Framework for Emergency Preparedness, which identifies the principles and elements of effective country health emergency preparedness. It takes account of the major lessons of previous initiatives and describes the planning and implementation process by which countries can determine their priorities and develop or strengthen their operational capacities *(9)*. In the aftermath of the 2014 emergency in the Balkans, the Regional Office developed tools and guidelines as well as

advocacy leaflets to assist health emergency managers in Member States in assessing the health risks of flooding, ensuring their own readiness, and developing the public health responses for flood prevention in the context of wider emergency planning *(3)*:

- flood preparedness planning guidelines;
- a flood preparedness checklist;
- a flood-related information leaflet for health workers; and
- a flood-related information leaflet for the public.

All these products were translated into Russian, were distributed to the high priority countries, and are easily adaptable to the local context.

REGIONAL OFFICE FLOOD PREPAREDNESS TOOLS

The Regional Office health sector flood preparedness planning guidelines support Member States in preparing for an emergency by outlining the essential considerations and prerequisites regarding: leadership and governance; the health workforce; medical products; vaccines and technology; health information; health financing; and service delivery. The guidelines also include materials to support flood contingency planning, including key principles, scenarios and assumptions, mitigation strategies, response preparedness, monitoring and testing. The guidelines are based on available literature, lessons learned, particularly those from the 2014 Balkan floods, and recommendations by partners. They propose actions to be carried out to prepare for flood emergencies in order to minimize the impact on affected people. These actions include the development, implementation, simulation, monitoring and regular update of a flood-specific preparedness and response plan that is reflective of the dynamic situation of a country and its resources. It is not meant to be a comprehensive manual but highlights important aspects of planning and management with a view to mitigating the impacts of floods *(3)*.

The flood preparedness checklist outlines key sectors to include and considerations that for every country preparing for such an event. It too falls under the health system framework and covers: leadership and governance; the health workforce; medical products, vaccines and technology; health information; health financing; and service delivery. It provides criteria for national authorities to cross-check across the different planning levels of planning. These levels include multi-hazard planning, multisectoral and health sector specific flood planning, surveillance systems, national and international information sharing, health facility emergency preparedness, continuity of health services, logistics and operational support. Ministries of health and other health authorities can use this checklist to ensure that they have factored in the relevant areas.

CONCLUSION

The emergency preparedness products developed by the Regional Office are a result of lessons learned and a response to gaps exposed during the emergency response in the Balkans in 2014. They mark an improvement in WHO's ability to support the health systems of Member States before, during and after emergencies and promote evidence-informed public health action.

Conflicts of interest: None declared.

Disclaimer: The authors alone are responsible for the views expressed in this publication and they do not necessarily represent the decisions or policies of the World Health Organization.

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