

Community and Government Preparation for Severe Pandemics or Other Disasters: The MSH Approach

Management Sciences for Health offers technical expertise and materials to assist countries to prepare and respond to severe pandemics and other disasters such as earthquakes, hurricanes, and other challenges to health, social, and economic well-being. We help governments and communities improve their disaster management, risk communication, and multisector coordination capabilities and planning to mitigate the impacts of a large scale disaster.

While the world watches, outbreaks of the H5N1 virus (Avian Influenza, or “bird flu” virus) in poultry continue to threaten the health and economic well-being of countries, and worries about the recent laboratory success of developing a strain with the potential for human transmission mount. To mitigate the impact of outbreaks, MSH helps prepare countries at the national, district, and local levels to plan, prepare and respond to avian influenza outbreaks or a severe human pandemic.

Background

To date,^{1,2} there have been over 7,200 reported avian outbreaks of highly pathogenic avian influenza, 596 human cases, and 350 human deaths, mostly in South East Asia. In the first few months of 2012, there were 18 new human cases, and 10 deaths (case fatality ratio of 56%). As long as these deadly avian strains cause outbreaks in poultry and other avian species, there is the possibility of genetic re-assortment of the virus into a highly transmissible and lethal human influenza pandemic strain. In addition, as the world experienced with the H1N1 pandemic of 2008, new viral strains can appear overnight and spread quickly across the globe. Fortunately, that strain was relatively mild. However, significant lessons were learned from that experience that should be integrated into on-going disaster and pandemic preparedness of countries and localities:

- ***All disasters are local***

First line responders have long understood the significance of this. No matter how large a disaster or outbreak becomes, it all starts somewhere. The ability of the local, impacted area to effectively detect, investigate, contain, and report a natural disaster, or an animal or human outbreak of disease, is of critical importance. The local area must initiate the response, mobilize human and other resources, and protect and sustain the population until help arrives. In the

¹ Outbreaks of Avian Influenza (subtype H5N1) in poultry. *From the end of 2003 to 9 March 2012 OIE*, <http://www.oie.int/animal-health-in-the-world/update-on-avian-influenza/2012/>

² Cumulative Number of Confirmed Human Cases of Avian Influenza A/(H5N1) Reported to WHO 12 March 2012, http://www.who.int/influenza/human_animal_interface/H5N1_cumulative_table_archives/en/index.html

early days of the H1N1 outbreak, the mayor of Mexico City had to make bold and difficult decisions, despite uncertainty of the cause of the outbreak, resulting in negative economic and social impacts. His responsive leadership contributed to a more effective and rapid response, and undoubtedly contributed to saving lives and reducing the spread of disease.

- ***Impacts quickly cascade across sectors***

While the immediate impact of an influenza outbreak may be limited to the health care sector, other sectors will soon experience high rates of workforce absenteeism and a cascading series of indirect impacts resulting in supply chain delays, disruptions in essential services, and the potential for fraying of the social fabric.

- ***Once the outbreak starts, preparedness stops and response starts***

While it can be a difficult decision to allocate funds and human resources to prepare for an uncertain event, there will be no time for such activities once a pandemic or other catastrophic disaster begins. It is like a light switch that gets moved from off to on, in a matter of hours or days.

- ***Preparedness for any disaster benefits all disasters***

The H1N1 pandemic was in some ways a false alarm. However, many countries gained important experience in disaster management, developed plans and policies to mitigate the impacts, enhanced their surveillance capabilities, and built important cross-sector relationships. A number of countries have found that the H1N1 experience resulted in better responses to subsequent natural disasters.

MSH Capabilities

Avian Influenza

Under the USAID-funded STOP AI project, MSH helped to design, develop, and implement the human health components of an integrated approach to avian influenza outbreak control in Latin America and Africa. Trainings and simulations engaged all levels of government and targeted veterinarians, human health providers, and the private sector. MSH-led technical areas included surveillance, case detection and management, public health and personal safety, and laboratory diagnosis. Development of exercise materials, facilitation, and evaluation of tabletop exercises and field simulations were done in several countries and a functional exercise was successfully completed in one.

Pandemic Influenza

MSH led the development of a pandemic toolkit as part of a USAID consortium of partners brought together to address the need for pandemic readiness in the developing world. The toolkit is targeted at local level (municipal) leaders and their local management teams. Because of the need for a decentralized “whole of society” approach in a severe pandemic, and the belief that the key determinant of a successful response is likely to be effective leadership, the objective of the toolkit is to

develop the knowledge and skills needed in leaders for an effective and efficient response, and to generate operational level multi-sector plans at the local level, including Continuity of Operations plans. Nineteen tools, forty-two planning templates, and a full set of training materials are divided into four technical areas: disaster management, food security, health, and crisis communication.

The Tools

Introduction

Tool 1 Priority Actions to Lead Your Municipality through a Pandemic

This tool sets the stage for what could happen during a severe influenza pandemic and gives an overview of how to prepare and respond.

Tool 2 Presentation on the Threat of a Severe Influenza Pandemic

This tool is especially useful for those who don't yet know much about pandemic influenza or its potentially wide-ranging effects on communities. It is a learning guide prepared using PowerPoint®, intended for training the people who will be responsible for planning and response, so that they know what to expect from a pandemic scenario. It can also be used as an advocacy tool.

Health

Tool 3 Pandemic Health Impact Projection Tool

This step-by-step electronic tool will help guide municipalities to use their healthcare resources wisely to achieve the best possible outcome—the most lives saved—during a pandemic. It uses Microsoft Excel® spreadsheet software. By entering three characteristics of a municipality, the tool can be used to generate estimates of the number of cases and the number of deaths expected during each week of the outbreak. The tool categorizes the expected cases into the four different levels of care that a population is expected to need.

Tool 4 Non-Pharmaceutical Interventions (NPIs): Actions to Limit the Spread of the Pandemic in Your Municipality

This tool explains the approaches available to limit the spread of the illness and how and when to implement them. Pharmaceutical interventions involve vaccines and antiviral medications to prevent and treat the disease or its complications. Because it will not be possible to manufacture vaccines for the initial pandemic wave, and certain barriers will prevent the use of antiviral medications, most countries will need to protect their populations without either of these interventions. This tool describes non-pharmaceutical interventions, such as social distancing, that municipalities can use to try to limit the spread of the disease.

Tool 5 Triage: Prioritizing Care to Reduce Deaths

A pandemic or other catastrophic disaster will result in large numbers of sick or injured people that will overwhelm community health resources. This tool explains the importance of triage during a pandemic and how it differs from that commonly practiced under normal conditions.

Municipal leaders will be charged with developing policies and standards for the care of the sick and dying at a time when resources may not be sufficient to provide care for all those who need help. Using

limited resources ineffectively could result in the preventable loss of yet more lives. But by planning in advance how to prioritize the use of scarce health resources during a pandemic, you can help ensure that care is provided to those who need it and can benefit from it most.

Tool 6 Training for Community Health Responders (Sessions I-III)

The Humanitarian Pandemic Preparedness Initiative (also known as “H2P”) developed a model step-by-step training program for community health responders that has been adapted for this toolkit. Community health responders are those people in a community who will receive training about how to slow the spread of the illness and who, in turn, will offer guidance and care during the crisis. This tool provides a curriculum for educating community health responders and other volunteers about the pandemic, the effective use of four influenza-fighting behaviors, and how people—including the community health responders themselves—can avoid getting sick.

Food Security and Livelihoods

Tool 7 Food Security in a Pandemic

When there is “food security” in a municipality, it means that everyone in the community can grow, buy, or trade enough of the nutritious food they need to have a healthy and active life. This tool describes how a pandemic will impact the food security of a community and how early planning before a pandemic can help a community prevent many of its negative impacts on food security. It will help leaders decide which type of response specific to food security may be most appropriate to survive a wave of the pandemic.

Tool 8 Classification of Food Security Risk Locations

This tool uses Microsoft Excel® to help response leaders assess the risk of food insecurity in the municipality as a result of a pandemic. It is important to remember that all areas experience some level of risk. The risk workbook provides a measure of the relative risk in one local region (municipality, village, or neighborhood) in relation to another area in the same region.

Tool 9 Identification of People Most at Risk of Food Insecurity

During a severe pandemic or other disaster, it will be important to identify the people within a population who will be most at risk. This step-by-step assessment tool will help determine who is most affected by poverty and hunger, and who may suffer most from the impact of a pandemic in terms of their ability to put food on the table.

Tool 10 Household Food Security Preparedness

During a severe pandemic, families are likely to suffer either because food and basic goods are not available or because they are not physically or financially accessible. This tool will help volunteers and community representatives raise awareness at the family level about the necessity of disaster preparedness in the area of food and livelihood security. It provides four key actions that can be presented at community gatherings prior to the onset of a pandemic to increase everyone’s ability to cope.

Tool 11 Distribution of Emergency Food During a Pandemic

During a severe pandemic, people who do not have access to food or cannot afford enough of it will need immediate assistance. This tool describes the logistics of stockpiling food and explains how to distribute food safely during a pandemic.

Crisis and Emergency Risk Communication

Tool 12 Fundamentals of Communication During Crises and Emergencies

Providing reliable, trustworthy information is crucial for the success of all the activities led by municipalities and civic organizations during a pandemic. This tool will guide you through the fundamental concepts and principles of effective communications for public officials.

Tool 13 Communications Plan Implementation for a Severe Pandemic

Sound communications before, during, and following emergency situations allow for effective and timely responses to crises and disasters. This tool provides the practical resources needed to organize an effective communications response.

Tool 14 News Media Communication

Collaborative relationships with the media are essential to the timely and effective dissemination of information to the public during emergencies. This tool provides tip sheets and resources for establishing and maintaining these relationships.

Disaster Management

Tool 15 Disaster Management in a Pandemic

While general disaster response capabilities will be needed during the pandemic, the complexities of the pandemic require a unique response. This tool assists in planning and implementing the coordinated multisector response that will be needed.

Tool 16 Maintenance of Essential Services

During the pandemic, workforce shortages and supply chain disruptions— along with social distancing— will require some businesses to close or reduce their operations. Further, municipal government officials may need to rethink how they provide essential goods and services. This tool takes you through each of the steps necessary for creating a plan to ensure the continuity, to the extent possible, of normal municipal activities in each sector.

Tool 17 Volunteer Coordination

During a severe pandemic, all of the sectors in a municipality will likely be overwhelmed and unable to respond to the needs of the population. Volunteer neighborhood and community organizations can help fill this gap. This tool helps response leaders and planners take an inventory of available volunteer services and efforts, and organize these services and volunteers in a manner that eases the impact of the pandemic on the community as a whole.

Tool 18 Management of Dead Bodies

In the event of a pandemic, municipalities can expect an increase in the number of deaths in their communities. Dead bodies, including those of influenza victims, are generally not contagious. Nevertheless, municipalities must oversee the logistics of recovery and identification while providing support to families. This tool addresses this difficult task with a logistics overview and specific recommendations.

Tool 19 Recovery and Resilience

Following a severe pandemic, municipal leaders must begin to focus on getting life and commerce back to normal as soon as possible. People may be filled with fear, so reestablishing a sense of security will be

a key objective. This tool helps local leaders link pandemic relief to pandemic recovery by identifying the people in the municipality that have suffered the most. It helps make sure that short-term income and basic necessities are available for these people, while building future resilience to disasters by implementing longer term work that addresses the underlying causes of food shortages and poverty.

Master's Level Course on Avian and Pandemic Influenza

Through the STOP AI project, MSH worked with AFENET (African Field Epidemiology Network) to develop and implement a two week course for students enrolled in the School of Public Health MPhil program at the University of Ghana. The course was based on the original STOP AI training curriculum, but additional modules on Pandemic Influenza were added and it included a classroom tabletop exercise and a field simulation. The students were veterinary, medical, and laboratory science graduate students at the University of Ghana. Faculty at the university were trained and taught the classes. The curriculum has been approved for inclusion in the degree curriculum as an elective, and has continued to be offered without further donor support. Materials developed include the PowerPoint presentations, facilitator and student guides, a laboratory manual, and relevant supporting materials. All materials are available in English and French.

Geographic Scope

MSH has done Avian Influenza and Pandemic work in Ghana, Senegal, Ukraine, Nicaragua, El Salvador, Guatemala, Peru, Bolivia, and Ecuador.

Training Materials

The Pandemic Toolkit is available in English and Spanish. It has been implemented in St. Lucia, Jamaica, Nicaragua, Peru, Bolivia, and Ecuador. The 19 tools are accompanied by a full set of training materials (facilitator guide and PowerPoint presentations). Participants are provided with a set of 42 planning templates that correspond to the tools. Workshops include interactive, engaging sessions using adult learning methodologies as well as tabletop and field simulations. Trainings have been done in face-to-face formats as well as through an online learning platform, allowing teams from different countries to train at the same time.

Exercises

Human health field simulation materials were developed for trainings in Ghana and Senegal in July and August 2009, the El Salvador training in December 2008, the Ukraine training in April 2010, and the AFENET Avian and Pandemic Influenza Integrated Curriculum completed in English and French in 2010.

Pandemic Presentations

LAC SOTA conference, 2010

H2P Regional Pandemic Preparedness Conferences (South Africa, Vietnam, Ethiopia), 2008

Towards a Safer World Conference, Rome, Italy, September 2011

Other Applications

The skills needed to respond to a potential avian influenza outbreak are the same as those necessary for identifying, containing, and responding to any communicable disease outbreak. For example, surveillance, case detection and management, and risk communication are needed to gain situational analysis, direct resources, provide health services, and properly inform and calm the public.

While pandemics are low risk, high outcome events, countries everywhere face natural disasters on a regular basis that tax their existing response mechanisms. Floods, droughts, and earthquakes predictably stress populations and result in negative health outcomes. Risk mitigation through planning and preparedness efforts can reduce mortality, morbidity, and the economic cost of disasters. Most of the tools in the pandemic toolkit can be easily adapted to use for any disaster. In addition, failed or fragile states share many characteristics with countries in a severe pandemic. The lack of available health care services, disruptions in supply chains, shortages of essential services, labile governance, and public distrust and fear are shared characteristics. MSH is currently developing an approach to health care delivery in fragile states, informed by pandemic preparedness and response.