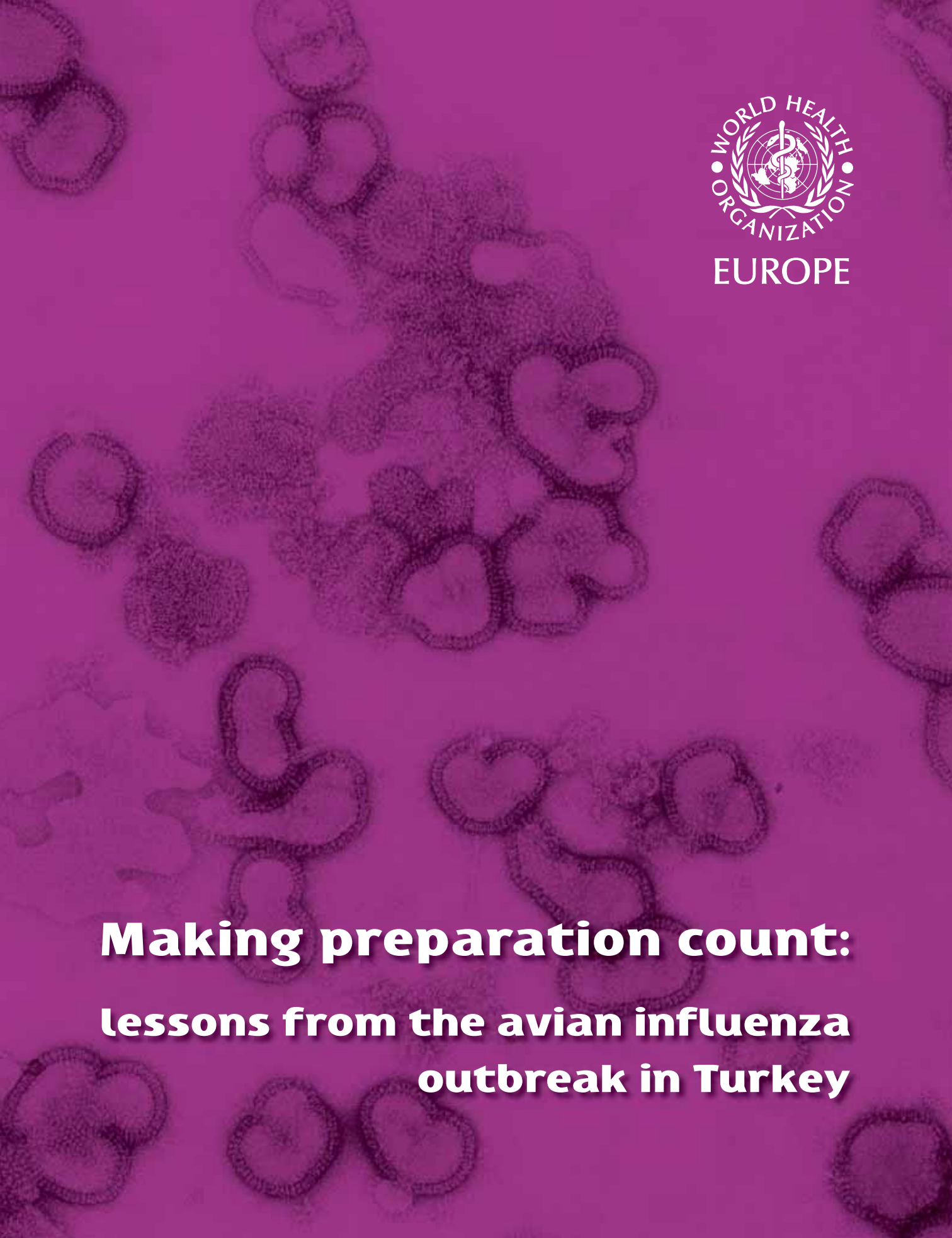


WORLD HEALTH ORGANIZATION
EUROPE

Making preparation count:

lessons from the avian influenza outbreak in Turkey

The World Health Organization was established in 1948 as the specialized agency of the United Nations responsible for directing and coordinating authority for international health matters and public health. One of WHO's constitutional functions is to provide objective and reliable information and advice in the field of human health. It fulfils this responsibility in part through its publications programmes, seeking to help countries make policies that benefit public health and address their most pressing public health concerns.

The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health problems of the countries it serves. The European Region embraces some 880 million people living in an area stretching from the Arctic Ocean in the north and the Mediterranean Sea in the south and from the Atlantic Ocean in the west to the Pacific Ocean in the east. The European programme of WHO supports all countries in the Region in developing and sustaining their own health policies, systems and programmes; preventing and overcoming threats to health; preparing for future health challenges; and advocating and implementing public health activities.

To ensure the widest possible availability of authoritative information and guidance on health matters, WHO secures broad international distribution of its publications and encourages their translation and adaptation. By helping to promote and protect health and prevent and control disease, WHO's books contribute to achieving the Organization's principal objective – the attainment by all people of the highest possible level of health.

Making preparation count: lessons from the avian influenza outbreak in Turkey

Acknowledgement

The rapid and successful response to the outbreak of human cases of avian influenza in Turkey, in January 2006, was the result of close collaboration between the Ministry of Health and Ministry of Agriculture of Turkey, the Turkish regional and local authorities, and the WHO-led international team. The team included staff from the Food and Agriculture Organization of the United Nations (FAO), the United Nations Children's Fund (UNICEF), the European Commission, the National Institute for Medical Research (a WHO collaborating centre in London, United Kingdom) and the members of the Global Outbreak Alert and Response Network (GOARN) network deployed in the field such as the European Centre for Disease Prevention and Control (ECDC), Sweden; the Institut de Veille Sanitaire (INVS), France; the Centers for Disease Control and Prevention (CDC), United States of America; the Swedish Central Epidemiology Group, Sweden; and Tel Aviv University, Israel.

Within WHO, there was strong collaboration between all the communication officers involved, the WHO Country Office, Turkey in Ankara, the WHO Regional Office for Europe and WHO headquarters. At the heart of the day-to-day operations and technical management of the outbreak response were the staff of the Regional Office's Communicable Disease Surveillance and Response unit and Steering Committee on Emergencies and Disasters, and the Department of Epidemic and Pandemic Alert and Response at headquarters, particularly the WHO Global Influenza Programme, the team of Alert and Response Operations, the Strategic Health Operations Centre and the team of Biorisk Reduction for Dangerous Pathogens.

Without these partners' unique experience, professionalism, readiness and dedication to public health, the response would not have been possible.

EUROPE

Making preparation count: lessons from the avian influenza outbreak in Turkey

WHO Library Cataloguing in Publication Data

Making preparation count: lessons from the avian influenza outbreak in Turkey.

1. Influenza A virus, H5N1 subtype 2. Influenza, Human – prevention and control 3. Disease outbreaks – prevention and control 4. Sentinel surveillance 5. International cooperation 6. Public health administration 7. Case reports 8. Turkey 9. Europe

ISBN 92 890 1386 9 (NLM Classification : WC 515)

ISBN 92-890-1386-9

Address requests about publications of the WHO Regional Office for Europe to:

Publications
WHO Regional Office for Europe
Scherfigsvej 8
DK-2100 Copenhagen Ø, Denmark

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the Regional Office web site (http://www.euro.who.int/pubrequest).

© World Health Organization 2006

All rights reserved. The Regional Office for Europe of the World Health Organization welcomes requests for permission to reproduce or translate its publications, in part or in full.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Where the designation "country or area" appears in the headings of tables, it covers countries, territories, cities, or areas. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

The World Health Organization does not warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use. The views expressed by authors or editors do not necessarily represent the decisions or the stated policy of the World Health Organization.

Text compiled by: Franklin Apfel and Prue Hardwick, World Health Communication Associates, United Kingdom (www.whcaonline.org)
Text editing by: Misha Hoekstra and M.S. Burgher
Layout by: TAIS, Denmark
Printed in Denmark

CONTENTS

Foreword

In January 2006, WHO responded to an outbreak of human cases of avian influenza in Turkey by deploying a WHO-led, multipartner mission on the request of the Turkish Government. This booklet describes the outbreak, the national and international response, and the lessons learned from them.

I had the pleasure of visiting Ankara early in the outbreak, both to give support and to assess the situation for myself. I drew several conclusions from this valuable experience. First, governments need to respond swiftly and vigorously to all cases of avian influenza in birds to minimize the exposure of human beings, as well as to suspected human cases. Second, full transparency is needed in dealing with the international community, including the mass media and of course the general public. Third, good communication with the public ensures that appropriate measures are taken both to limit the risk of spread to human beings and to curb unnecessary fear and anxiety. Last, but not least, full commitment and cooperation by all relevant sectors, in particular the agriculture and health ministries, needs to be ensured. The relevant ministries may differ, depending on the situation. The lead ministries in Turkey were health and agriculture; those in the outbreak of avian influenza in human beings in Azerbaijan in March were health and the environment, as the source was wild birds.

The two well-managed outbreaks in human beings in the WHO European Region – in Turkey and Azerbaijan – provide valuable experience that countries and WHO are putting to use. The WHO regional offices for Europe and the Eastern Mediterranean held a meeting in April in Ankara, to discuss intersectoral approaches to avian influenza in animal and human populations in the light of the experience gained from outbreaks in both regions. We asked, are we doing the right things and are we doing enough?

The WHO European Region is mobilizing against a possible avian influenza pandemic. Our Member States are working hard on their national preparedness plans. In May, the Regional Office for Europe and our partners, the European Commission and the European Centre for Disease Control and Prevention, held the third technical meeting on such plans. We strongly recommend that our Member States' preparedness plans include a section on how to deal with avian influenza in animals and how to ensure the optimal intersectoral approach. I hope this booklet will help to show the value of such measures.

Marc Danzon
WHO Regional Director for Europe

Introduction

In December 2005, while many people in the WHO European Region were enjoying their holidays, the four children (a girl aged 16, a boy aged 14, a girl aged 12 and a boy aged 6) of a family in Doğubeyazit, a poor rural town in the Ağri province of eastern Turkey, brought their chickens inside to protect them from the cold. For such families, backyard poultry are an essential part of life. Chicken eggs and meat are key protein sources, and for many children in the area, the birds are pets with names and personalities. So, following local practice in severe weather, the children brought their chickens into their home, to keep them from freezing to death in record low temperatures that dropped to –30 °C.

Unknown to the children, the chickens were harbouring a threat more dangerous than the bitter cold: H5N1, an avian influenza virus. Whether it came from migratory birds or the village market, where "spent" hens are sold, remains unclear. Many local poultry traders travel widely, not only in the nearby provinces of eastern Turkey, but also among neighbouring countries such as Azerbaijan, Iraq, the Islamic Republic of Iran and the Syrian Arab Republic. What is clear is that the children's close contact with the infected poultry – sleeping next to the chickens in cramped quarters, and slaughtering and cleaning birds that became ill – contributed to the deaths of the three oldest. Their fate provided tragic warning of the virulence of an H5N1 outbreak, and it galvanized Turkey and the rest of the Region into quickly intensifying preparations for a possible pandemic.

This booklet examines the factors that contributed to these deaths, the first H5N1 deaths recorded outside eastern Asia, and analyses the national and international response they triggered. Its goal is to identify practical lessons for public health agencies and policy-makers, both national and international. The report draws on interviews with some of the key health workers who oversaw the Turkish and international responses to the outbreak, treated affected people, traced contacts and communicated with the public (Annex 1). The interviews were conducted face to face and over the telephone, supplemented by a short questionnaire (Annex 2). Information was also collected from a review of relevant newspaper articles, as well as press releases and reports from the major agencies involved, including WHO, the European Centre for Disease Prevention and Control (ECDC), the United Nations Children's Fund (UNICEF), the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE).

The report begins by providing an update on the global and European avian influenza situation, followed by an annotated chronology of the major events surrounding the Turkish outbreak. Drawing on the experience in Turkey, the report then considers five questions that underpin national and international preparedness.

1. Why prepare for a pandemic now?
2. How to prepare for a pandemic?
3. How can preparation for tomorrow's influenza pandemic be used to strengthen today's public health systems?
4. How can international agencies be most helpful?
5. What is the best way to communicate with key stakeholders?

The volume concludes with a summary of lessons learned.

The outbreak in Turkey was a wake-up call for many in the WHO European Region. The deaths there meant that avian influenza had truly arrived on European shores. Many people began to acknowledge for the first time that avian influenza was a European problem, not one confined to distant developing nations. Importantly, it also served as a first opportunity to test national and international preparedness planning on the ground in Europe.

Massive media coverage significantly increased awareness among policy-makers and the general public, helping generate an unprecedented level of global support for avian influenza surveillance, control and pandemic preparedness. At a conference in Beijing on 17–18 January 2006, international donors pledged US$ 1.9 billion for these tasks (International Pledging Conference on Avian and Human Pandemic Influenza, 2006).

Most significantly, the Turkish outbreak clarified many ways to strengthen the response capacities of national public health systems. This volume seeks to capture and communicate these practical lessons for policy and planning.

This is a report on the situation and the responses at the time of the outbreak; WHO and others are preparing further scientific analyses for publication. These analyses may give different data from those presented here.

1. Global and European situation update

The largest, most severe outbreaks of avian influenza observed among poultry occurred in eight South-East Asian countries, beginning in mid-2003.[1] The causative agent, the highly pathogenic H5N1 strain of *Influenzavirus A*, has since become endemic in domestic birds in several of these countries.

In the last six months of 2005, the geographical distribution of the virus in birds expanded beyond Asia. Countries reporting their first outbreaks among both wild and domestic birds included, in order of reporting, the Russian Federation, Kazakhstan, Turkey, Romania and Ukraine. Croatia and Mongolia reported detecting the virus in wild birds.

In February 2006, the distribution of the H5N1 virus in birds began to expand again, this time dramatically. By early April, another 32 countries in Africa, Asia, Europe and the Middle East had reported their first cases of infection. These reports marked the fastest and widest spread of a highly pathogenic avian influenza strain to be recorded since avian influenza was first described in 1878. Of the 52 countries in the WHO European Region, the number reporting H5N1 in both wild and domestic birds grew from 6 in October 2005 to 27 by the end of May 2006.

The virus has now spread to poultry in some of the world's most densely populated and impoverished areas, areas that are typically characterized by poor health care coverage and inadequate disease surveillance. These factors increase the likelihood of human cases not being detected promptly or at all, thus impairing the effectiveness of the response by the Global Outbreak Alert and Response Network (GOARN).

The first human cases in the present outbreak occurred in December 2003 in Viet Nam. By early April 2006, close to 200 laboratory-confirmed infections had been reported in people in nine other countries: Azerbaijan, Cambodia, China, Djibouti, Egypt, Indonesia, Iraq, Thailand and Turkey. In the European Region, there were nine deaths as of 31 May 2006, arising from the cases in Azerbaijan and Turkey.

In human beings, the virus causes severe disseminated disease affecting multiple organs and systems. The infection has been fatal in more than half the cases. For reasons not fully understood, most cases have occurred in previously healthy children and young adults.

Although neither the timing nor the severity of the next disease pandemic can be predicted, the risk that one will emerge from H5N1 is directly linked to the widespread presence of the virus in poultry, and is expected to persist. Between mid-2003 and early April 2006, 48 countries reported the virus in domestic or wild birds. Of the 29 countries reporting outbreaks in poultry, only 2 have successfully eliminated the virus and remained disease-free.

Investigating possible instances of human-to-human transmission has proven difficult, as reported cases have thus far been limited to family members, who are invariably exposed to the same animal or other sources of infection, as well as to one another. Several cases of limited human-to-human transmission have been observed, but there

[1] This section is based on information from WHO (2006) and Danzon (2006).

is no scientific proof that the virus has ever spread beyond an immediate circle of close contacts or caused illness in the general community. Data from these incidents suggest that such transmission requires very close contact with an ill person. WHO has therefore maintained its pandemic alert at Phase 3 (of 6), to indicate that a new influenza strain is causing infections in human beings but is not yet spreading efficiently or sustainably from one person to another.

In Phase 3, interventions aim to reduce the opportunities for a pandemic virus to emerge. Activities therefore concentrate on preventing human infections and strengthening the early warning system. FAO, OIE and WHO have drawn up preventive measures for the health and agriculture sectors to implement jointly. These measures target the small back-yard flocks that have been associated with most human cases to date.

Nevertheless, surveillance of human and poultry outbreaks remains weak in most of the countries affected. Several factors make human surveillance particularly challenging: the nonspecific early symptoms of H5N1 influenza, the high incidence of other respiratory diseases in the affected countries and the technical difficulty of diagnostic confirmation.

2. Chronology of the Turkish avian influenza outbreak, May 2005–February 2006

March 2005: preparedness plan development

The WHO Regional Office for Europe, the European Commission (EC) and ECDC gathered representatives of the 52 countries in the WHO European Region in Luxembourg to discuss national preparedness plans for a possible influenza pandemic. A preliminary assessment made before the meeting showed that 50 countries had established national bodies responsible for pandemic preparedness, and 31 had developed national preparedness plans, compared with just 4 in 2000. The remaining 21 countries either were developing draft plans or intended to do so.

5–13 October 2005: first confirmed cases in European poultry

The first avian influenza outbreaks in the Region occurred in Romania and Turkey. The latter killed more than 1800 birds in Mehmet Eksen's flock of turkeys, which he tended in a sparsely populated area of the Balikesir province in north-west Marmara. While the source of the outbreak remains unknown, contamination from migratory birds flying south from the Russian Federation was suspected. Eksen's turkeys had ranged freely on land close to Kuscenneti ("Bird Paradise") National Park, a popular stopping point on the migration route.

On **8 October**, the Turkish Ministry of Agriculture announced the presence of H5N1 influenza in the country. On **13 October**, OIE confirmed the presence of H5N1 in samples taken from Eksen's turkeys.

Control measures included eradication (10 000 birds culled), quarantine, movement control within the country, zoning (establishing a protection zone 3 km in radius and a surveillance zone 10 km in radius around the outbreak) and disinfection of infected premises.

Cull of Turkish poultry

© Scanpix

13–26 October: human health warnings, launch of Turkish pandemic preparedness plan, second European influenza preparedness meeting

The Regional Office advised countries experiencing avian influenza outbreaks in poultry to follow certain precautions, particularly during culling operations, and to monitor people that might have been exposed for fever and respiratory symptoms. It continued to recommend that people travelling to areas with H5N1 outbreaks among domestic fowl avoid contact with live-animal markets and poultry farms. Populations in affected countries were advised to avoid contact with dead migratory birds or any wild birds showing symptoms of disease.

On **19 October**, ECDC (2005) issued detailed guidelines about the risk of avian influenza to human health.

The Turkish Ministry of Health published the country's first national pandemic influenza action plan (2005), developed on the basis of the *WHO checklist for influenza pandemic preparedness planning* (WHO, 2005c):

> The objective of pandemic planning is to provide the information and framework that will help all relevant persons, facilities and institutions know about the influenza pandemic and get prepared so that they can fulfil their duties and responsibilities.
>
> – Dr Recep Akdağ , Minister of Health, Turkey (Turkish Ministry of Health, 2005)

On **26 October**, the Regional Office, the EC and ECDC held the second technical meeting on preparedness planning for Member States in the WHO European Region: 46 countries reported that planning was under way, while all 25 members of the European Union (EU) reported that national plans were finished or in development. Dr Shigeru Omi, WHO Regional Director for the Western Pacific, urged all 52 European Member States to "act vigorously in any outbreak of avian influenza in birds in order to prevent [reproducing] the situation in Asia, where avian influenza has become endemic in birds in many places". He gave Japan and the Republic of Korea as two examples of countries that, through "vigorous" action, had avoided endemicity and become completely free from avian influenza.

November–December 2005: spread of avian influenza to eastern Turkey

The first suspected outbreak in eastern Turkey was identified on **27 November** in Sanlıurfa province. Positive results from a "rapid test" were obtained on **13 December** and confirmed through isolation of the H5 virus on **4 January 2006**.

Avian influenza was suspected among domestic poultry in Igdir province on **15 December**, and confirmed on **26 December**. Control measures were implemented only for confirmed outbreaks. There was no active surveillance in neighbouring provinces, where the delayed identification of avian influenza cases was later attributed to a lack of notification by farmers.

24 December 2005 – 1 January 2006: first cases and first death in human beings

Following the slaughter of ill chickens on **24 and 25 December**, three children in one family in Doğubeyazit, in Ağri province, began to complain of weakness and joint pain. They were later treated in the local outpatient department for fever, sore throat, arthralgia and myalgia.

By **30 December** their condition had worsened, and their father brought them to the hospital in Doğubeyazit, from which they were transferred to the Yüzüncü Yıl University Hospital in Van on **31 December**. There they were treated for suspected avian influenza. The 14-year-old boy died on **1 January** (followed by his 16- and 12-year-old sisters on 5 and 6 January, respectively).

2–27 January 2006: national response initiated, international assistance secured and outbreak brought under control by the Ministry of Health

Media and public health reports reached the Turkish Ministry of Health on **2 January**. It issued a press statement saying that no avian influenza cases had yet been confirmed in human beings.

On **4 January**, the Ministry received confirmation of H5N1 from the National Influenza Centre at the Refik Saydam Hygiene Centre in Ankara and the Capa Hospital in Istanbul. The Ministry:

1. held a press conference to announce to the public that a child had died from avian influenza at Yüzüncü Yıl University Hospital in Van;
2. convened a scientific advisory panel and a crisis team, with representatives from the Ministry of Agriculture;
3. put its avian influenza preparedness plan in action;
4. launched a public information campaign, with television spots and a 24-hour hotline, and posted relevant documents on its web site (Ministry of Health, 2006c); and
5. notified the WHO Regional Office for Europe of the outbreak through the WHO Country Office, Turkey and invited WHO to assemble a team of international experts to review the epidemiological situation and provide further laboratory and clinical expertise.

Agreements between WHO, ECDC and the relevant GOARN members enabled an expert team to be fielded within 24 hours.

On **5 January**, the first members of the WHO-led joint mission (Annex 3) arrived in Turkey and started working with the Ministry of Health, meeting together, sharing information and working in tandem in a designated crisis room. Further members arrived over the next week. The Regional Office started to issue a series of updates on the situation (WHO Regional Office for Europe, 2006a).

On the same day, a supply of oseltamivir (Tamiflu) capsules were distributed to all provincial health directorates "to be used for avian influenza human cases" (Turkish Ministry of Health, 2006a). The drug had first been procured and distributed to various provinces in 2005.

H5N1 avian influenza virus

© National Institute for Medical Research

On **7 January**, the National Institute for Medical Research, in Mill Hill, London, United Kingdom – an influenza reference laboratory and WHO collaborating centre – confirmed the presence of H5N1 in specimens from the patients at Yüzüncü Yıl University Hospital.

New cases were identified on 8 January in Ankara. The same day, the WHO team travelled with a Ministry of Health delegation to eastern Turkey, where some of the cases were detected and hospitalized. The international team divided into a coordination team based in Ankara and a field team based in Van. Dr Marc Danzon, WHO Regional Director for Europe, flew to Turkey on **11 January**.

On **12 January**, tests at the National Institute for Medical Research showed that, although the current H5N1 virus had mutated slightly, the change was not significant enough to raise concerns about a new virus transmissible from human to human.

The last human case in the Turkish outbreak was hospitalized on **13 January**, bringing the total number to 21 found positive by the National Influenza Centre in Ankara (Fig. 1, Table 1). The National Institute for Medical Research confirmed 12 cases, including the 4 fatal ones. Every one of the infections was associated with close contact with domestic poultry, and every one was acquired before active culling and information and education campaigns were implemented; all confirmed cases were in children aged 3–16 years.

Fig. 1. Human cases of H5N1 infection in Turkey, by date and province, found positive by the National Influenza Centre, as of 17 January 2006

Notes. Total human cases: 21 including 4 deaths. Age: median 8, range 2–65 years. Gender: 8 females (38%) and 13 males (62%). Date of disease onset of latest confirmed case (approximate): 8 January 2006.

Source: data from Turkish Ministry of Health (2006b).

After considering the epidemiological and laboratory evidence, WHO decided to maintain the pandemic alert at Phase 3.

Table 1. Summary of human H5N1 infections found positive by the National Influenza Centre, Ankara, as of 14 January 2006

Initials	Age (years)	Gender	Province	Location	Date of hospital admission	Status	
						Stable	Fatal
1. MAK	14	M	Ağri	Doğubeyazit	31 December 2005		X
2. FK	16	F	Ağri	Doğubeyazit	31 December 2005		X
3. HK	12	F	Ağri	Doğubeyazit	31 December 2005		X
4. YT	5	M	Ağri	Doğubeyazit	1 January 2006	X	
5. SM	8	F	Van	–	3 January 2006	X	
6. NM	17	F	Van	–	5 January 2006	X	
7. SB	6	F	Siirt	Baykan	6 January 2006	X	
8. SB	4	M	Sanlıurfa	Viransehir	6 January 2006	X	
9. MC	5	M	Çorum	–	6 January 2006	X	
10. UK	4	M	Kastamonu	–	7 January 2006	X	
11. UK	5	M	Kastamonu	–	7 January 2006	X	
12. OS	12	M	Samsun	–	7 January 2006	X	
13. AO	9	F	Ağri	Doğubeyazit	8 January 2006	X	
14. YO	9	M	Ağri	Doğubeyazit	8 January 2006	X	
15. MC	65	M	Ankara	Sincan	8 January 2006	X	
16. MC	5	M	Ankara	Beyparazi	8 January 2006	X	
17. IC	2	M	Ankara	Beyparazi	8 January 2006	X	
18. GY	37	F	Sivas	–	9 January 2006	X	

Source: data from Turkish Ministry of Health (2006b).

On **16 January**, a national social mobilization campaign was launched with the support of an international task force led by UNICEF.

A national avian influenza action meeting for all governors and provincial health authorities was held in Ankara on 20 January.

On **27 January**, the field team left Van, turning over its records to the provincial governor. The overall control strategy remained:

1. disease control in animals;
2. mobilization and education of communities to reduce the risk of human exposure; and
3. case finding, surveillance, isolation and infection control among human beings.

February–May 2006: follow-up

Dr Lee Jong-wook, WHO Director-General, visited Turkey on 2–3 February. National coordination activities continued through the Ministry of Health in Ankara. The WHO Country Office, Turkey and offices of other United Nations agencies in Ankara helped strengthen Turkey's surveillance and laboratory capacity. Missions to neighbouring countries took place.

The WHO regional offices for Europe and the Eastern Mediterranean held a meeting in Ankara, on 12–13 April, at which Turkey's neighbouring countries discussed cross-border issues and shared information. Turkey continued to be actively involved in alert and response operations and all influenza pandemic activities associated with the Regional Office for Europe, the most recent being the third avian influenza preparedness meeting in Uppsala, Sweden on 15–17 May 2006, which the Regional Office organized with EC and ECDC.

3. Avian influenza preparedness: five questions for public health agencies and policy-makers

Question 1. Why prepare for a pandemic now?

It is tempting to believe that an avian influenza pandemic will never happen, but an understanding of the influenza virus and the history of its deadly impact on global populations through the ages[2] makes the threat too serious to ignore. While one cannot say when it may become a reality, it is clearly an ever-present danger.

Ignorance about when and where a pandemic will strike has encouraged a fatalistic attitude toward the utility of public health preparations. In this, pandemic forecasting has until recently resembled efforts to predict other phenomena, such as earthquakes and the effects of climate change. The current calls to intensify international and national preparatory action are based on three parallel, interconnected developments: increasingly serious warning signs, changing attitudes towards fighting disease threats and an enhanced ability to fight them effectively.

Clear warning signs of a pandemic

Warnings have come from a wide variety of WHO and other expert sources. They point to changes in the epidemiology of human and animal disease (see section 1) and to the expanding presence of the H5N1 virus, creating further opportunities for human exposure. In addition, this highly pathogenic virus is now endemic in wild birds and poultry in some of the poorest areas of the world, the very places where an emerging outbreak among humans is least likely to be noticed by either the media or health authorities. This adds urgency to the need for global preparedness.

The Turkish outbreak was a wake-up call for the countries in the European Region. It showed that avian influenza could strike and kill on European soil – and that quick national action, supported by international expertise and experience, can minimize its effects.

Changing attitudes towards combating infectious disease threats

> During the first years of the 21st century, concern about infectious disease threats [has] challenged the very notion that an outbreak can be considered "localized" in a highly mobile, economically interdependent, and electronically interconnected world.
>
> – Rodier & Kindhauser (2006)

[2] Since the 1500s, the world has averaged three influenza pandemics per century. In the 20th century, they occurred in 1918, 1957 and 1968. The influenza pandemic of 1918, when the global population was 2 billion, killed 50 million people in 18 months.

The H5N1 avian influenza outbreaks have contributed to a progressive shift in the thinking of policy-makers and the general public. Increasingly, they see such outbreaks as obvious threats not only to health but also to the economy and security, both national and international. Ms Zsuzsanna Jakab (2006), Director of ECDC, recently observed that "the possibility of an influenza outbreak … has become the concern of [p]residents and prime ministers – not to mention health ministers and chief medical officers – across the world". For perhaps the first time in history, laboratory scientists, epidemiologists, policy-makers and communicators working in public health have an opportunity to influence domestic and global security strategy.

Although the numbers of human cases and deaths from avian influenza have so far been comparatively small, the social and economic consequences have been substantial. The Asian poultry industry has sustained losses estimated at US$ 10 billion. These human and economic costs foreshadow dramatic global disruption if and when a pandemic hits. Even with a fatality rate of only 1%, a highly contagious influenza strain could still infect nearly half the world's population and cause more than 30 million deaths.

As fear of a pandemic increases awareness of countries' interdependence in health, social and economic terms, solidarity becomes a non-altruistic imperative:

> [I]nternational intervention aimed at delaying the emergence of a pandemic or forestalling its international spread … is in the self-interest of all nations, as such a strategy could gain time to augment vaccine supplies. At present capacity, each day of manufacturing gained can mean an additional 5 million doses of vaccine. … Once international spread begins, each government will understandably make protection of its own population the first priority. The best opportunity for international collaboration – in the interest of all countries – is now, before a pandemic begins.
>
> – WHO (2005b)

With concerns such as these in mind, the international donor community gathered in Beijing just days after the outbreak in Turkey and committed itself:

> … to ensuring effective development and implementation of integrated national action plans within the framework of WHO/FAO/OIE global strategies guided by political leadership at the highest level, to mobilizing resources in our countries and to drawing upon government, civil society and the private sector to effect a coordinated response.
>
> – International Pledging Conference on Avian and Human Pandemic Influenza (2006)

Donors in Beijing then pledged US$ 1.9 billion to strengthen global, regional and national capacities for surveillance and response.

Unprecedented opportunity for effective public health intervention

> Public health emergencies throw into sharp relief the strengths and weaknesses of current infrastructures for protecting the public on a daily basis.
>
> – Rodier & Kindhauser (2006)

Border controls, market mechanisms and military might do little to obstruct the spread of potentially lethal microbes. The strongest armament against new or re-emerging infectious disease threats is well-coordinated, universally applied public health surveillance and response.

Effective surveillance can provide advance warning of a potentially dangerous outbreak, creating a unique opportunity for countries to mitigate its effects. Several major international mechanisms have been established to detect and respond to new diseases (Box 1).

The first three mechanisms described in Box 1 all contributed to Turkey's quick response to the avian influenza outbreak. Media reports helped alert the Ministry of

Health and the Regional Office early. GOARN was used to recruit international experts for the mission. The WHO Country Office, Turkey (in Ankara) was instrumental in coordinating the work of the mission and ensuring that it was integrated smoothly with Ministry activities.

Box 1

International outbreak alert and response mechanisms

Global Public Health Intelligence Network (GPHIN)

Launched in 1997 by the Health Canada, GPHIN (http://www.phac-aspc.gc.ca/gphin) is a customized search engine that continuously scans web sites in six languages for rumours and reports of suspicious disease events. It systematically searches for key words in over 950 news feeds and electronic discussion groups around the world. Computerized text mining and human review are used to filter, organize and classify the more than 18 000 items it flags every day. Around 200 of these merit further analysis by WHO. For outbreaks that WHO has investigated in the past 10 years, 40–50% of the initial alerts have come from the mass media and other non-official sources.

GOARN

GOARN (http://www.who.int/csr/outbreaknetwork) was set up in early 2000 to ensure that a "strike force" of specialized human and technical resources could be rapidly assembled and deployed for emergency investigations and on-the-spot assistance. It currently interlinks 120 networks and institutes in real time, bringing together a substantial amount of knowledge, laboratory capacity, specialized skills and experienced personnel to help keep the level of international preparedness high. As a first-hand source of much early outbreak information, GOARN also provides an invaluable human complement to GPHIN's "artificial intelligence".

WHO country office network

Another electronic communication system was recently set up to exploit a unique geographical and strategic resource: the over 140 WHO country offices (http://www.who.int/countryfocus/country_offices). They are concentrated in the developing world and located within or close to health ministries. Although the offices vary in size, according to the disease situations in countries, each is staffed with medical experts (and often epidemiologists) and furnished with the essential logistical equipment, including vehicles and local communications links, needed for investigating outbreaks promptly on the ground. During response to an outbreak, these offices also support international staff by arranging flights, customs and immigration clearance, and accommodations.

International Health Regulations (IHR)

In May 2005, the 192 WHO Member States unanimously adopted a significantly modernized version of the IHR (http://www.who.int/csr/ihr), the only international legal framework governing the reporting of outbreaks and the prevention of their international spread. The revised IHR recognize that the infectious disease threat has grown, in terms of both the number of diseases that need close monitoring and the risk that new diseases will emerge. The scope of the IHR was expanded accordingly, and they now address all public health emergencies of international concern, including those caused by chemical agents and radionuclear materials. Moreover, reporting requirements and time frames have been tightened, reflecting a heightened sense of urgency and the greater response speed that electronic communications allow.

In addition, procedures have been put in place to compensate for many countries' weak detection and response capacities. While the IHR acknowledge the kinds of support offered by GOARN response teams, they also recognize the value of strong national alert and response efforts, as local knowledge and ownership make detection and control more effective. An annex sets out the core capacity requirements for surveillance and response in countries. The IHR also recognize that media reports can pre-empt official notification of an event, and include provisions for WHO action in such a situation.

Finally, the IHR encourage national compliance by assigning responsibilities and establishing internationally agreed rules and procedures.

Source: adapted from Rodier & Kindhauser (2006).

Question 2. How to prepare for a pandemic?

> The Ministry of Health of Turkey has been monitoring the global progress of avian influenza since December 2003. The first wave of the epidemic in our country was in the autumn of 2005; there were no human cases. Nevertheless, we decided to take precautions – training, awareness raising and [dissemination of] information, purchase of the necessary drugs and protective equipment, improving the laboratory and hospital infrastructures. Therefore, when the first human avian influenza cases were seen in the beginning of January, we as the Ministry of Health were prepared …
>
> – Dr Recep Akdağ, Minister of Health, Turkey (WHO Regional Office for Europe, 2006b)

> We do not know when or if there will be a human influenza pandemic, but we know that preparation saves time and saves lives.
>
> – Dr Marc Danzon, WHO Regional Director for Europe

Pandemic influenza planning is not just a bureaucratic exercise. The Turkish experience showed the usefulness of having a preparedness plan in place. Even if not yet fully developed, such a plan provides a framework for action. Moreover, the development process identifies and begins to engage the key government and nongovernmental entities needed to respond to a pandemic.

The collaborative response demanded by the outbreak in Turkey significantly strengthened intersectoral relationships, such as that between the health and agriculture ministries. Many issues raised during the response pointed to the need for this. Perhaps most telling was the fact that H5N1 was detected among people in Ağri before it was identified in local poultry or wild birds. This underlined the need for active surveillance of both animal and human outbreaks.

The Turkish preparedness plan, with its call and support for intersectoral teams and committees, provided a platform for collaboration and laid the groundwork for the rapid containment of the human cases, once identified. The planning process demonstrated many of the attributes of best practice identified by the influenza coordinator for the United Nations system, Dr David Nabarro (Box 2).

Box 2

Characteristics of best practice in pandemic influenza planning

- A sound, evidence-based national strategy and plan
- Focus on the immediate (less than one year) and medium terms (up to five years)
- Primary attention to animal health, including veterinary services and livestock sectors
- An effective public health system
- Intersectoral approaches to pandemic preparedness
- A fully costed operational plan
- Implementation and management arrangements
- Regular reviews of the relevance and utility of planning components
- Transparent analyses of achievements

Source: adapted from Nabarro (2006).

A never-ending process

> We will not, at a certain point, be able to say "[N]ow we are fully prepared for a pandemic" and move onto some new project. We must continue to develop and update our plans as our knowledge about influenza advances. We must continue to learn from each other, test our plans and ask how we can do things better.
>
> – Ms Zsuzsanna Jakab (2006), Director of ECDC

Preparedness plans need to be dynamic. Turkey's current avian influenza preparedness plan was updated after the outbreak, using the lessons learned from the experience.

WHO is working to help countries strengthen their preparedness plans. In the European Region, one valuable tool has been the regular meetings convened by the Regional Office and ECDC for Member States to exchange information on influenza and experience with preparedness planning.

Policy-makers face many challenges as they grapple with preparedness plans, including four key ethical issues raised by the WHO Department of Ethics, Trade, Human Rights and Health Law and discussed at the 2006 World Health Assembly: rationing, quarantine, resource sharing and personnel exposure.

1. Clearly, when a pandemic breaks out there will not be enough antivirals or vaccines to distribute to everybody. Every government needs to have some rationing plan.
2. As part of containment efforts, governments will be compelled to enforce quarantines around outbreak centres. The Turkish experience with animal quarantine points to some of the difficulties that populations can have in observing quarantine rules. There were many reports in Van of poultry being hidden from cullers because their owners either did not think they were ill or felt that compensation payments were insufficient. These reports diminished after social mobilization efforts began and people became more aware of the risks of noncompliance.
3. When resources are inadequate, it is difficult for countries and districts to share them.
4. Health care personnel at risk of infection must be protected, and encouraged to keep working. Yüzüncü Yıl University Hospital reported that 14 nurses called in sick, reporting side-effects from the oseltamivir they were given to prevent their contracting avian influenza from the patients for whom they were caring. Concerns were raised about whether the calls were due more to side-effects or to the stress and anxiety related to caring for avian influenza patients.

Employers face another dilemma: how to operate with fewer employees in the event of a pandemic. Organizations need to plan how to operate with perhaps 30% fewer employees. Many are exploring telecommuting arrangements, in which employees work from home, connected to their workplaces via computer.

Question 3. How can preparing for tomorrow help strengthen public health systems today?

> And of course, you should do many things to prepare… But my point is that we have to seek for activities and solutions that are sustainable or can be used for other purposes, other diseases.
>
> – Sprenger (2006)

Pandemic influenza preparation touches on many of the key issues in health system development, and many of the activities and competencies required to address influenza threats can be used to strengthen health systems more broadly. This relationship was evident in the Turkey outbreak.

The world health report 2000 (WHO, 2000) identifies four vital functions of health systems: stewardship, resource generation, health service provision and financing. Experience in Turkey points to specific ways in which an outbreak can strengthen each of the four.

Stewardship

> Stewardship has recently been defined as a "function of government responsible for the welfare of the population, and concerned about the trust and legitimacy with which its activities are viewed by the citizenry". It requires vision, intelligence and influence, primarily by the health ministry, which must oversee and guide the working and development of the nation's health actions on the government's behalf.
>
> – WHO (2000)

In pushing public health from the wings to centre stage, a pandemic gives public health leaders a unique opportunity to demonstrate their stewardship capacities. How can a government better express its concern for the welfare of its citizens than to mount an effective response to a previously unknown threat? Through its successful management of the avian influenza outbreak, the Turkish Ministry of Health demonstrated its stewardship abilities to the public. This reinforcement of its stewardship role was attributable to three things: open communication, on-the-ground presence and intersectoral teamwork.

Transparency and open communication

The Ministry of Health gave a press briefing on the same day as it received laboratory confirmation of positive H5N1 tests (see Box 3). It openly shared information about these tests and those that were pending. The Ministry also acknowledged uncertainties and candidly shared with the public and international agencies its information-gathering, risk-assessment and decision-making processes.

Box 3

Turkish news item on the bird influenza press conference, 4 January 2006

"On Wednesday, Turkish Minister of Health Recep Akdağ announced [that a boy aged] 14, who died at Van Yüzüncü Yıl University (YYU) Research Hospital[,] died from the bird flu virus.

Akdağ said the bird flu is present in [the boy's sister] and another patient still receiving treatment at the same hospital. The disease was diagnosed in the samples analyzed at Refik Saydam Hygiene Center in Ankara and at Istanbul University School of Medicine Capa Hospital. The Minister said three patients receiving treatment at Van YYU Hospital may also have caught the virus.

Samples taken from the patients were sent to the World Health Organization's laboratory in London, Akdağ added[. T]he sample taken from deceased [boy's] lungs was the first analyzed at Refik Saydam Hygiene Center and later at Capa Hospital in Istanbul, and confirmation of the bird flu virus in the samples was revealed on Wednesday night."

Source: Zaman National News Desk, 2006.

By inviting foreign experts to Turkey and working alongside them, the Ministry risked being publicly judged by them. Instead, its close involvement with the WHO-led joint mission secured rapid independent and international validation for Ministry actions, as well as access to critical information and experience that enabled it to protect the population more effectively. Moreover, the Ministry demonstrated – to its staff, the Turkish people and the international community – its sincere desire to do the best job possible.

Among the international and Turkish participants interviewed for this book, the consensus was that this candid, transparent approach increased public confidence in the Ministry's ability to handle the

Members of the WHO-led mission team: Dr Guenael Rodier and Professor Angus Nicoll

© ECDC

crisis and enhanced its standing in the international public health community.

The willingness of the Minister and Ministry of Health to work so readily with WHO and other agencies reflects the strength of several long-term relationships: collaborative relationships between the Ministry and WHO in a variety of technical areas, the well-established working relationship between the Ministry and the WHO Country Office, Turkey, and the personal friendship between the Minister and the WHO Regional Director for Europe:

> I went to Turkey at the peak of the outbreak because I wanted to assure the Government of Turkey of WHO's support. I also had to hear personally from the national health authorities about the assistance the country needed from WHO. I met the joint team of international experts deployed to Turkey a few days ago to investigate the epidemiological situation and to assess risk factors and control measures. We were all impressed and supported by the timely action that the Turkish authorities took at the first signs of the spread of avian influenza from birds to human beings.
>
> – Dr Marc Danzon, WHO Regional Director for Europe
> (WHO Regional Office for Europe, 2006b)

Being on the spot in a crisis

The avian influenza outbreak occurred on the eastern edge of Turkey in a remote, politically sensitive area of economic and social deprivation. The Minister's rapid reaction to the needs of the people, exemplified by his visit to the outbreak epicentre, demonstrated his commitment and responsiveness to the needs of all Turks, as well as his solidarity with local health workers.

Being there is critical in any crisis. In addition to being a physical expression of involvement, it enables a leader to feel, touch, smell and taste the reality of people's circumstances. For government health officials, such direct experience helps not only to inform subsequent decisions but also to create popular support for any public health measures that may be necessary.

"Sharing the glory": engaging all relevant actors

By convening all relevant players in a crisis control team, the Turkish Ministry of Health was able to address some system failings from a larger perspective, instead of using a blame-and-shame approach. For example, the process greatly strengthened relations between the health and agriculture ministries and enabled information gaps to be filled quickly. The multisectoral mission team helped serve as a model for this collaboration:

> One of the decisive factors for success was that, from the very beginning, we put together the animal and the human health aspects of our work. This was recognized as very valuable by our counterparts in Turkey. When the international community sent experts from all sectors, the authorities in the country took up the same approach. We built the joint response upon experts' pools beyond WHO. Likewise, Turkey also brought together all [its] experts. Health, agriculture, education, emergency response – all sectors at national level – also came together from the start, in order to prevent new human cases.
>
> – Dr Guenael Rodier, WHO mission leader and spokesperson
> (WHO Regional Office for Europe, 2006b)

> We were glad that all international organizations worked with the relevant units of the Ministry of Health. The whole operation was coordinated by WHO, with its extensive experience and information worldwide. This set a good example for other countries: how, during a serious epidemic, to work in cooperation with international organizations in a spirit of trust and sharing. Transparency and openness are the keywords in the management of such epidemics.
>
> – Dr Recep Akdağ, Turkish Minister of Health (WHO Regional Office for Europe, 2006b)

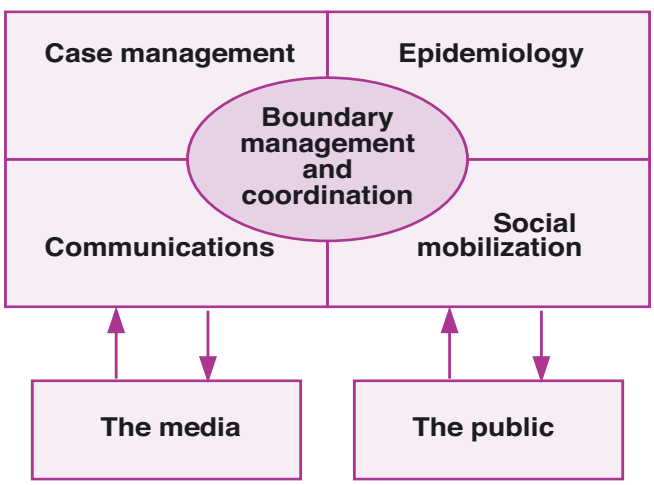
Perhaps most important, the intersectoral relationships that developed in the crisis have provided a sustainable foundation for continuing collaboration that can only benefit the country.

Resource generation

The avian influenza outbreak in Turkey was the first time that any health ministry in the WHO European Region had to confront human infections and deaths from the H5N1 virus and the potential for a pandemic. The Ministry therefore faced many uncertainties and new demands, which required some adjustments to the health system.

GOARN has identified four key tasks of outbreak management – epidemiology, case management, communications and social mobilization – as well as boundary management and coordination (Fig. 2). During the Turkish outbreak, the team required extra supplies, logistical support and human resources in each of these areas.

Fig. 2. The primary tasks of an outbreak management team



Epidemiology

In the interviews conducted for this book, national and international participants agreed that the outbreak increased capacity in both the health and veterinary sectors in the areas of case definition, active surveillance, contact tracing and record keeping.

National teams received epidemiological assistance from the WHO-led mission, which provided protocols and procedures gleaned from other outbreaks. For example, the mission introduced a system based on international standards for isolating together the possible, probable and confirmed cases (see Box 4). This cohorting system was quickly

Turkish national scientific advisory team, meeting with international team

© WHO

disseminated through the Ministry web site (Turkish Ministry of Health, 2006b). GOARN protocols and procedures were also used to address problems identified in systems for tracking biological samples.

Box 4

Case definitions and recommended treatments

Probable case
Epidemiological link[a] + mild respiratory symptom(s)[b] but no fever: oseltamivir prophylaxis (75 mg/day) at home for 7 days

Possible case
Epidemiological link[a] + fever[c] or other symptoms of influenza-like illness:[d] hospitalization in isolation ward + oseltamivir treatment[e]

Highly probable case
Possible case + radiological findings in chest X-ray or respiratory failure: hospitalization in isolation ward + oseltamivir treatment[e]

Positive radiological change + exposure history, with or without fever: hospitalization in isolation ward + oseltamivir treatment[e]

Confirmed case
Laboratory confirmation: hospitalization in isolation ward + oseltamivir treatment[e]

[a] Recent history of contact with sick or dead poultry, or contact with a patient (usually for household members and relatives of a known case).
[b] Cough, sore throat, severe myalgia, malaise, headache or runny nose.
[c] Abrupt onset of fever, or feverish appearance (with axillary temperature of at least 38°C) that cannot be explained by other causes.
[d] Symptoms such as headache, general fatigue and generalized muscle ache.
[e] For adults, 75 mg twice a day for 5 days or until symptoms resolve; for patients younger than 15 years, split capsules for half the adult dose.

Source: adapted from Turkish Ministry of Health (2006a).

Case management

Members of the mission's technical staff worked with colleagues from the Ministry of Health and field coordinators to develop a new database for collecting and managing data on avian influenza cases (see Table 1 above).

Other aspects of case management that were improved during the outbreak included laboratory procedures, sample tracking and infection control. For example, the laboratory at the National Influenza Centre experienced a tremendous surge in test requests: over 1200 in the first month. It was provided with training, equipment and reagents to improve biosafety conditions and practices, preserve specimens and reagents during sample processing and test preparation, enable additional typing and subtyping and increase its surge capacity for tests. The training covered, for example, how to perform procedures at increased capacity and how to reduce staff stress.

Some problems were encountered in gathering data from the Yüzüncü Yıl University Hospital in Van. Doctors there were reluctant to share data, as they were saving them for their own publications. As the hospital was under the authority of the Higher Education Board, not the Ministry of Health, the Ministry could not require changes in this behaviour.

Communication

On receiving the first positive H5N1 results, the Ministry of Health immediately launched a professional public information campaign, including television spots and a 24-hour hotline. The Ministry web site became an important source of current information, with daily postings of alerts and clinical management information for health practitioners. While the Ministry had had significant experience in working with the national media, the spotlight of international media attention brought new challenges. (See question 5 for a discussion of how addressing these challenges strengthened the Ministry's competencies in public health communication.)

Press conference in Turkey

© WHO

Important lessons were learned in the areas of intersectoral and interagency communication, some of which are examined above. Again, the gravity of the threat and the international spotlight provided strong incentives for cooperation and quick conflict resolution among the various actors. As to jurisdiction over and treatment of patients in Van, both the Ministry of Health and the Yüzüncü Yıl University Hospital were designated as centres for the diagnosis and treatment of avian influenza.

Social mobilization

The Ministry's original preparedness plan made no mention of social mobilization activities. As events showed, the population most affected by the outbreak was impoverished and geographically remote. It also quickly emerged that children and adolescents were particularly at risk. Communicating with them presented many challenges, notably the fact that many children and women in the affected area could not speak Turkish or read in any language. The Ministry quickly realized that a broad-based campaign was needed to mobilize the children and their caregivers and discourage risky behaviours.

Assisted by an international task force led by UNICEF, experts tasked by the Ministry developed a variety of effective communication tools and vehicles. In Van, for example, the public information efforts included:

- messages from local imams issued several times a day, along with the call to prayer;
- leaflets distributed to schoolchildren in urban areas before schools closed for the holidays, and read out by teachers to schoolchildren in rural areas;
- information passed by village elders to their communities; and
- a telephone hotline for individuals, leaders and imams to report sick and dead birds.

In addition, radio and television transmissions, broadcast in the local language, allowed public health messages from the Ministry of Health to reach people who did not understand Turkish.

The effectiveness of such efforts became fully apparent when no new cases of human avian influenza emerged once culling and social mobilization began. (For more information on these campaigns, see question 5.)

Health care provision

Addressing the avian influenza crisis in Turkey led to the strengthening of several aspects of health care delivery. For instance, a training programme on infection control and the proper use of protective suits was conducted for health care personnel in Van. Turkish clinicians also joined the regular WHO clinical teleconferences that link providers from around the world who have treated human cases of avian influenza. These teleconferences provide a platform for exchanging clinical observations, findings and advice.

The Ministry of Health quickly disseminated case management protocols, reporting forms and clinical advice through its vast network of health centres and hospitals and its actively updated web site.

Infection control in a hospital

© WHO

Logistics

Before the outbreak, Turkey invested significant resources in pandemic influenza preparations. For example, it obtained adequate stockpiles of oseltamivir and protective gear. One lesson of the outbreak is that the storage of these supplies needs to be decentralized. Otherwise, bad weather and long transport distances can hamper delivery to affected areas.

Financing

Using a system of green cards, Turkey provided free health care for anyone who was suspected of contracting avian influenza but did not have an adequate income. Yet problems arose in financing the care of those most at risk for the disease. To receive a green card, a person had to be registered with the authorities. Many residents of Van province avoided registration, however, as it meant that their children would be compelled to go to school and they preferred to keep them home, particularly the girls. (The campaigns of the Ministry of National Education have resulted in ever-increasing numbers of school enrolments, particularly of girls.)

There were also some delays in compensating poultry farmers for culled animals. In numerous public statements, the Ministry of Health displayed sensitivity to the economic losses sustained by poultry farmers and backyard poultry keepers, and consistently advocated fair and rapid compensation.

External funding

Global and regional funding has greatly helped Turkey to respond effectively to the outbreak. Foreign assistance has also been invaluable in strengthening the country's surveillance and laboratory capacities and in launching a nationwide social mobilization campaign.

A renewable emergency fund from GOARN helped bring the necessary personnel and supplies quickly to Turkey. To respond rapidly to another outbreak, most countries will require similar funds to defer immediate logistical expenses.

Question 4. How can international agencies be most helpful?

> We set the tone for this work in Europe. By working together WHO, ECDC and the animal health partners were able to get a team on the ground in eastern Turkey within days of the first human case. The team spirit in Ankara and the province of Van was tremendous – a model for dealing with infectious diseases on the edge of the EU. In these regions sometimes the EU and WHO can get in each other's way. That was certainly not the case here. Everyone pulled together, regardless of which organisation had sent them.
>
> – Professor Angus Nicoll, Pandemic Influenza Coordinator, ECDC (WHO Regional Office for Europe, 2006b)

Established agreements, cooperative planning, and joint missions and training seminars paved the way for the Regional Office, ECDC and the EU to collaborate readily and respond rapidly to the Turkish outbreak, despite the fact that the alert was sounded during a major holiday period. The Regional Office became aware of the outbreak early, through

media reports and emergency calls from the WHO Country Office, Turkey. Even before the Ministry of Health requested assistance, the Regional Office's emergency response committee had convened and started planning how best to support the country.

Once the Minister of Health formally invited WHO to lead an international mission, the emergency committee began to assemble relevant personnel to travel to Turkey as soon as possible. WHO worked with GOARN to identify potential participants from other organizations, as well as drawing on its own active staff members who were experienced in outbreak response and crisis management.

The WHO Country Office in Ankara used its long-term relationship with the Ministry of Health to help arrange the invitation and to coordinate in-country support when the mission arrived. In accordance with a memorandum of understanding with ECDC, the Regional Office took the lead in responding to the outbreak. (Had the crisis occurred in an EU Member State, ECDC would have taken the lead.)

The immediate availability of senior staff with extensive experience allowed WHO to arrange the joint mission quickly. The first members of the mission team arrived in Ankara within 24 hours of the call from the Ministry of Health; others followed soon after. Upon arrival, the team immediately began collaborating closely with the Ministry, meeting, sharing information and working together in a designated crisis room.

As explained to the media, the WHO-led mission had several objectives:

- to support the Ministry of Health;
- to investigate and control the outbreak through laboratory support (from the National Institute for Medical Research in London, United Kingdom), epidemiology, patient management and animal control measures;
- to use its investigations to make public health recommendations;
- to increase global knowledge of the H5N1 avian influenza in humans; and
- to improve global pandemic preparedness.

The team was guided by GOARN's principles of action (Box 5).

Box 5

Guiding principles for international outbreak alert and response

1. WHO should ensure that disease outbreaks of potential international importance are verified rapidly and that information is quickly shared within GOARN.
2. The GOARN Operational Support Team should coordinate a rapid response to requests for assistance from any affected state.
3. The most appropriate international experts should arrive on site as soon as possible to carry out coordinated, effective outbreak control measures.
4. The international team should integrate and coordinate its efforts with national ones and seek to reinforce the existing public health infrastructure.
5. The participation of GOARN partners in international responses should be determined equitably.
6. There need to be strong technical leadership and coordination in the field.
7. Partners should coordinate their response efforts with each other.
8. GOARN needs to respect the independence and objectivity of all its partners, including nongovernmental organizations (NGOs).
9. Outbreak responses should be used to build global response capacity by including participants with appropriate field-based training in epidemiology and public health.
10. To improve epidemic preparedness and reduce future vulnerability, GOARN is committed to following up on international outbreaks by building up national and regional response capacities.
11. All GOARN response efforts should show full respect for ethical standards, human rights, national and local laws, cultural sensitivities and traditions.

Source: adapted from GOARN, 2006.

Facilitating, not directing

The political and professional sensitivity of the mission team leaders and members to their Turkish hosts contributed to the rapid development of trust. The international team members clearly understood that they were there as external facilitators, enablers, linkers – and guests. Their proximity and access to the ministerial crisis room and team permitted easy exchange of information. Two factors further simplified internal interaction among the mission participants: they were all housed in a single hotel, and the international agencies they represented all had their national offices in UN House in Ankara:

> Some simple things made a big difference: the fact that we were all in the same hotel in Ankara, a single building for the whole [United Nations] family. Daily teleconferences, Ankara–Van in the morning and Ankara–parent bodies in the evening, meant there was good coordination. The mutual learning across professional boundaries and the excellent collaboration between the international team and our Turkish hosts made this a very rewarding, albeit exhausting, experience. Important lessons have been learnt.
>
> – Professor Angus Nicoll, Pandemic Influenza Coordinator, ECDC (WHO Regional Office for Europe, 2006b)

The need for the national and the international teams to show solidarity became apparent immediately. For example, in the delicate issue of the release of the first results from the WHO reference laboratory in London, the Ministry of Health stated at a press conference that the source of the outbreak was confirmed to be H5N1. WHO had not yet received those results and was not involved in the data release. It was therefore unable to confirm the announcement. While WHO was soon able to confirm, the delay caused some confusion and led to some media representatives' questioning the veracity of the Ministry's announcement (Salvi, 2006).

Press conference: WHO and the Turkish Ministry of Health

© WHO

In addition to confirming announcements, the international mission played a key role in validating the appropriateness of Ministry actions for the media and the public. The most common question that the media asked the mission leader and spokesperson, Dr Guenael Rodier, was "How is the Government doing?" (Box 6). In answering such questions, Dr Rodier always emphasized the positive, identified system-strengthening strategies under way and avoided apportioning blame. For example, when the media raised concerns that Ministry of Agriculture interventions might be too hasty and drastic,

Box 6

Frequently asked questions from the media

New cases
- Are there any new confirmed cases of avian influenza?
- Are they confirmed H5 or H5N1 infections?
- How many suspected cases are there now?
- How many patients have been discharged?
- Does WHO validate the Ankara laboratory results?
- What is the significance of the asymptomatic cases?

Turkish response
- Has the Turkish Government responded effectively?
- What are the main measures that have been taken to contain the outbreak?
- Is the oseltamivir (Tamiflu) stockpile enough to treat the likely caseload?
- Was there a delay in the government response, given that the first animal outbreak dates back to October 2005?
- You say the response has been effective. So why is the animal outbreak still widespread, and why do we see chickens running in the street and families hiding birds?
- If the response has been effective, why have there been additional cases and another death (asked after the second death)?

Inconsistencies
- There is an inconsistency in FAO and WHO statements – that "avian influenza is endemic now" versus "don't panic". Can you resolve the two?
- Why has the Ministry of Health confirmed the virus as the H5N1 strain and WHO as the H5 strain?
- Why did WHO headquarters in Geneva state that the Turkish Government had not been responding properly?

Rumours
- Can you confirm reports of an additional case?
- We heard there are new cases in Istanbul; can you confirm?
- What can you tell us about the virus mutation that has been detected?
- Have any cases of human-to-human transmission been proven?

The future
- What are some possible future scenarios?
- How close are we to a pandemic?
- What is the likelihood of finding the virus in other countries?

he answered that the Ministry of Health enjoyed a good working relationship with the Ministry of Agriculture, and that both ministries recognized the importance of reducing risks to the population by limiting exposure to sick birds.

The mission team recognized that assistance from the Ministry of Health was necessary if it was to coordinate its efforts with the national teams and reinforce existing public health infrastructures (see Box 5, principle 4).

Being at the scene of the outbreak

The first rule of effective assistance is perhaps obvious: get there and get there early! This is especially true for coordinators. Relationships and work routines emerge quickly during outbreaks, and coordinators who arrive after operations have begun often experience difficulties.

In Turkey, it proved effective to divide the international mission into two groups, a technical team in the field and a coordination team in the capital. The field team in Van was allocated space in the governor's office building, next door to the Turkish crisis team and its infection control, veterinary and public health specialists. Daily teleconferences were held, when the two teams exchanged information, solved problems together and shared developmental ideas. These meetings encouraged close cooperation and led to the introduction of several new public health measures in the province.

Being in Van gave the field team first-hand knowledge of the outbreak, emerging needs and progress in addressing them. It helped the team identify precisely where, when and how much assistance was needed. The field team then communicated this information to the coordination team in daily reports and telephone conferences. This second team,

in conjunction with the Ministry and relevant international agencies, then presented the latest developments to the media.

Outbreak management

There are five primary tasks in outbreak management:

1. case management
2. epidemiology
3. communications
4. social mobilization
5. coordination.

(See Fig. 2 above and the discussion that follows.) The fifth function is essentially facilitative, helping ensure the maximum effectiveness of the other four.

A blend of national and international expertise is needed to respond effectively to the outbreak of a potential pandemic. National experts can provide an understanding of the broad cultural framework in which the outbreak occurs, and information on the local human and technological resources available. International experts bring specialized knowledge of outbreak management. Seeing these two groups work together can inspire a local population's trust, which is critical in creating any behavioural changes that may be needed to contain the outbreak.

In any outbreak, the demands made of each function and the balance of expertise required will vary among settings and over time. Despite such variation, blending the attributes of domestic and global experts is clearly crucial to managing the crisis as effectively as possible. To succeed, a partnership of this type must seek to build a common platform of trustworthiness, integrity and credibility.

Recruitment of experts and administrative support

The Turkey mission team recruited specialists from GOARN based on expressed and observed needs from the field. The challenge was to get the right people to the right place at the right time. It worked quite well on this occasion, as a wide variety of organizations expressed great interest in helping. Offers of assistance were so numerous, in fact, that it became necessary to refuse those that were not acutely needed.

It should also be remembered that all expert consultants require administrative support for local transport, housing, communications, supplies, etc. Throughout the crisis, this support was coordinated by the WHO liaison office in Ankara. Fortunately, WHO was able to shift some personnel from its liaison offices in other countries to reinforce the overburdened staff in Ankara. The Ministry of Health facilitated the procurement of office space and supplies for the mission teams in both Ankara and, with help from the provincial governor, Van. In both cities, the mission offices were placed close to the national team offices, and the resultant proximity facilitated information exchange and problem solving.

Putting health first

The citizens of a country give their government responsibility for many things, including the economy. Unfortunately, decisive public health actions can threaten economic interests, such as tourism and, in the case of avian influenza, the poultry industry. Fortunately, the reputation and authority of WHO and other international agencies,

grounded in their widely respected efforts on behalf of people everywhere, can strengthen the position of a health ministry relative to other sectoral interests and help promote its public health agenda.

Building international public health capacity

> The more we learn each time, the better we are prepared for the next time. I was asked to take over the coordination in Turkey in the second half of January. I came in through the Global Alert and Response Network, which my institute is part of. The Network's partners are called upon whenever a need for experts emerges. When we can, we respond. I myself have been on similar missions in Angola, China and Viet Nam. It is essential that WHO runs such a system for summoning experts globally. This way, professionals can go immediately to a country when it needs them most. This is not about the rich giving to the poor! It is about everyone sharing the people and the knowledge so that we can respond collectively. No country – no matter how advanced its health system is – can feel 100% protected from global health threats. Going to other countries, therefore, is essential if we want to improve our knowledge. This enables us to act better when the need comes on two fronts – in our own countries and internationally.
>
> – Mr Philippe Barboza (WHO Regional Office for Europe, 2006b)

Every outbreak yields experience to add to the world's collective knowledge. The discoveries can be formal, as in scientific research, or informal, through learning by doing. In addition to sharing information and experience from previous outbreaks, the international mission in Turkey captured the lessons of the outbreak so that it could be communicated to others. GOARN shares such knowledge among its partners and funnels it to countries in need (see Box 5).

Promoting equity

The location of the outbreak epicentre in an impoverished rural area helped focus needed attention on broader public health concerns related to equity, participation and resource distribution. Transport difficulties due to inclement weather were a further argument supporting the Ministry of Health's plans to stockpile antiviral drugs in every province, rather than holding them centrally.

The outbreak also underlined the fact that no part of a population can be ignored in public health work without endangering the health of the entire population.

Analysis for next time: what worked and what did not

The international and national participants interviewed for this book agreed that the WHO-led mission in Turkey had proven effective. Many identified several factors as responsible for its success.

1. WHO's reputation and its long history of activities in Turkey inspired trust, not only from the Turkish leadership but also the general population.
2. The mission leader's extensive experience with outbreaks and emergency response reinforced perceptions of the mission team as skilled, experienced and worthy of confidence. It also encouraged the experts from the various participating agencies to accept him as leader for the entire mission. As one observer noted, it can often be difficult to get infectious disease experts to work together in harmony.
3. The importance of the early arrival of the mission and the immediate assumption of coordinating roles has already been noted.

4. The mission leader's style of management also contributed to the success of the response. He consistently supported and reinforced national strategies and approaches, avoided assigning blame for any problems and identified solutions at the system level instead, and coordinated the communication of messages and information to present uniformity in public statements.
5. GOARN was a valuable resource for expert consultants. The mission leadership was also able to keep well-meaning but potentially distracting missions out of the country during the acute phase of the crisis.
6. The presence of a communications officer was essential in responding to the volume of interview requests. The designation of a single spokesperson, who became the familiar face and voice of the international response, also worked well (see discussion under question 5 below).
7. Dividing the mission into coordination and field teams – and limiting access to the field by the media and non-essential personnel – helped the field team focus on its work. Making this arrangement transparent and providing regular press updates satisfied the media's needs.
8. The communication chain worked smoothly. Information was relayed in daily telephone conferences from the field to the coordination team in Ankara, and thence to the relevant international agencies and the media. These communications were supplemented by daily web-based reports and press notes.

One weakness that many respondents identified was the mission's inability to invest more energy in scientific studies that might have yielded new information about the transmission of avian influenza to human beings and the effectiveness of the antivirals used. The main obstacle to carrying out such studies was time and human resource limitations. The Ankara team's time was largely taken up with media work. The Van team's time was taken up helping local health workers address growing demands for testing, surveillance and reporting. For example, in just three weeks more than 600 people went to the Van hospital wanting to be tested.

Maintaining momentum

Since February 2006, the Turkish Ministry of Health has initiated and hosted a wide variety of activities to strengthen both its own alert and response capacities and those of neighbouring countries. A mission led by the United States visited neighbouring countries, and the WHO regional offices for Europe and the Eastern Mediterranean held a conference in Ankara in March to discuss avian influenza surveillance and response. Exchange visits have taken place between laboratory personnel at the National Influenza Centre in Ankara and the National Institute for Medical Research in London, and grants were awarded to enhance active surveillance in both animals and humans, as well as to develop and strengthen social mobilization programmes (see question 5 below).

Through its laboratories, Turkey continues to participate fully in international influenza surveillance networks, and in GOARN and WHO/ECDC preparedness meetings.

Many members of the mission to Turkey later served during the avian influenza outbreak that claimed five lives in Azerbaijan, where they were able to use their Turkish experiences to help the Azerbaijanis bring the crisis under control.

Question 5. What is the best way to communicate with key stakeholders?

> The World Health Organization (WHO) believes it is now time to acknowledge that communication expertise has become as essential to outbreak control as epidemiological training and laboratory analysis.
>
> – WHO (2005a)

Outbreak communication can be divided into four major challenges:

1. building and maintaining trust
2. dealing with the demands of the international media
3. communicating among the international agencies involved
4. mobilizing the population (social mobilization).

Much of what the national and international responders learned during the Turkish outbreak came from addressing these four challenges.

Building and maintaining trust

> Evidence shows that public panic is rare[,] and most rare when people have been candidly informed.
>
> – WHO (2005a)

As noted, The Turkish Ministry of Health did an excellent job of gaining and keeping public confidence during the outbreak. The Minister announced the outbreak early, was frank about uncertainties (for example, when test results were pending) and welcomed international collaboration. He explained his request for international assistance as responsible networking that would enable the country to bring the best experience and knowledge to bear on the crisis. In this way, he presented it not as an admission of national weakness, but as appropriate, responsible management:

> It is not possible to claim that any country facing such an epidemic is perfectly equipped. Three challenges are obvious – the need for support with international technical information, experience and communication …
>
> – Dr Recep Akdağ, Turkish Minister of Health (WHO Regional Office for Europe, 2006b)

Communication failures can delay outbreak control, undermine public trust and compliance and unnecessarily prolong economic, social and political turmoil (WHO, 2005a). The fact that none of these negative repercussions was seen in Turkey is largely due to the Ministry of Health's policy of openness and transparency.

Turkey has well-developed mass media. The media have shown great interest in health issues for several years, and most political figures in the health sector have developed good media skills. These skills were evident during the outbreak and greatly helped the Turkish Government to maintain the trust and confidence of both its own people and the international community.

As an experienced manager, the Minister of Health has learned to avoid excessive reassurance and to acknowledge uncertainty. Although it may seem that such a strategy would inspire anxiety, it has in fact been shown to help create trust in crisis situations. It was also noteworthy that the Minister avoided the temptation to blame and shame, and kept the public debate focused on the health agenda instead.

Dealing with the demands of the international media

Media attention during the outbreak was enormous, with more than 50 calls a day in the first week. The clear identification of a spokesperson and the presence of a communications officer as intermediary proved invaluable.

Having a single spokesperson with an unambiguous mandate inspired media confidence, though it became necessary to manage access. During the times when requests for information and comments were most intense, the press office used a set of criteria to prioritize media requests and manage the spokesperson's media time. The criteria included the relevance of each media outlet, whether another location or programme from the same outlet had already made a request (requests were limited to one per outlet per day) and the number of times the outlet had made a request.

The communications officer provided all routine updates and organized the interviews for the spokesperson and other designated media sources. During the most intense period, the spokesperson spent up to 40% of his working hours in media interviews, chiefly on live television. During the second week, when media attention had slackened, interviews were assigned to particular time slots, and requests interfered less with other demands on the mission.

In other outbreaks, attracting the media's attention may be necessary or strategically desirable. In Azerbaijan, for example, there was very little attention from the media. A communications officer therefore needs to be prepared to deal with either possibility.

Field and coordination teams

Dividing the mission into a coordination team and a field technical team proved strategic in maximizing the amount of technical work accomplished while responding adequately to the media. This set-up was facilitated by locating the two teams in Ankara and Van. The role of the communications officer was to help prevent the field team in Van from being distracted from its work while meeting the media's needs. Many reporters, particularly television crews, asked to follow the technical team's work to document the outbreak response in the hospital, laboratory and field. The mission strategy, however, was to divert them to the spokesperson and the rest of the coordination team in Ankara. Several explanations of this arrangement were given to the media (Salvi, 2006).

- "We need to ensure the technical team does its work properly and without any distraction: if we allow following them, a lot more media will ask the same and the scientists won't be able to concentrate on their mandate."
- "In order to provide you with information/results you ask for, we need to leave the technical team to work and produce them."
- "There is a clear set-up of a technical and a coordination team, since we need to carry out the technical work properly, but also consider [it] important to answer your needs: the spokespersons in Ankara are available to provide you with all the information you need."

The media as potential vector

Another useful component of a media strategy for an avian influenza outbreak is information for members of the media about how they personally can prevent transmission. Reuters and other agencies have issued guidance in this regard (International News Safety Institute, 2006), and any media outlets filming or researching stories in close proximity to infected people or animals should certainly take appropriate

precautions, including the use of protective gear. The use of antivirals might also be considered, depending on the nature of the exposure risk, the availability of the drugs and government distribution priorities.

Interagency communications

To ensure that everyone who was following the Turkish outbreak had access to the latest news from the field, a daily schedule of meetings and conference calls was developed. Following early morning meetings in Van, daily updates were communicated to the team in Ankara. Data on new cases were also collected from the health and agriculture ministries each morning. A teleconference was held each evening with designated representatives of the key international organizations involved, including not only WHO but also the EC, ECDC, FAO, OIE and UNICEF. Information gleaned from this process was then shared with the media and posted on all relevant web sites.

International team's daily teleconference

© WHO

Not only did the communications officer in Ankara coordinate interviews, but WHO and ECDC press officers in Copenhagen, Geneva and Stockholm also fielded calls and enquiries about mission activities. The evening teleconferences helped ensure the consistency of their data and messages.

Since the media identified WHO as the agency leading the outbreak response, including communications efforts, WHO received questions on every aspect of the story, including human and animal health. WHO answered animal questions in general terms, referring more involved queries to the relevant animal health experts. Again, the nightly interagency teleconferences were essential in giving consistent answers.

Some problems arose when an international team member rotated off and the replacement was unfamiliar with the previous cooperative agreements. In one instance, a new spokesperson for the agricultural sector announced that avian influenza had become endemic in Turkey's domestic poultry, an announcement that created quite a stir and had to be clarified by the Ministry of Health and Dr Marc Danzon, the WHO Regional Director for Europe, who was visiting Turkey at the time. The appropriate message should have been that there was a threat of endemicity if aggressive culling did not take place, but that the condition had not yet become established.

Another problem arose when WHO headquarters released some information from the National Institute for Medical Research about a slight mutation in one of the virus isolates.

The release was made before the field team was notified, and it caused some difficulties when the media questioned the local spokesperson about a report that he had not yet received.

These problems were addressed quickly, and they helped reinforce for all parties the need for coordinated communications.

Social mobilization

The experience of the Turkish outbreak in the area of social mobilization was particularly instructive. Whether the activities targeted the general population or particular risk groups (see Box 7), the purpose was to encourage safer behaviours.

Box 7 Group at highest risk of contracting H5N1 in Turkey: poor rural families

Poor rural families are especially vulnerable, since so many of them keep poultry. The children in these families, usually girls, are the ones who often care for and slaughter domestic birds, exposing them to the most risk. Many of these children also keep poultry as pets.

Turkey's initial pandemic preparedness plan did not stress social mobilization. As mentioned, the fact that the epicentre of the outbreak was in a rural, impoverished area made it particularly difficult to control. Recent evidence from other countries (Health Canada, 2005; New Zealand Ministry of Health, 2005) points to the effectiveness, as measured by enhanced awareness and changed behaviours, of introducing population-awareness and risk-reduction programmes early as part of pandemic influenza preparedness.[3]

The Turkish approach follows guidelines for risk communications in seeking to identify the communication channels that can reach the target audiences, analysing how the target groups perceive the problem and tailoring messages accordingly.

A task force was set up under UNICEF leadership to draft common messages to educate the public. Other participants included the EC, ECDC, FAO, WHO and the Turkish ministries of health, education, agriculture and the interior.

The Government was clearly effective in communicating the dangers of avian influenza and recommendations on avoiding infection to the general public. A subsequent review of the public messages presented by all sources (government bodies, NGOs, international agencies, etc.), however, concluded that the messages were too numerous, and some were confusing or inconsistent (Box 8).

Now that the outbreak has been contained among human beings, current preparedness efforts have two cornerstones:

1. the active surveillance and culling of infected animals; and
2. social mobilization activities to enhance awareness and ensure lower-risk behaviour.

[3] In both Canada and New Zealand, for example, the health ministries have launched major public information campaigns, using a mixture of media channels, to inform the entire populations of the effects of avian influenza and what to do in the event of a pandemic. The development of these campaigns has involved many sectors and population groups, including those for whom English is not a first language, and they have used techniques such as focus groups that are more commonly associated with product marketing.

Box 8

Too many messages

- Do not touch or hunt wild birds.
- Do not touch or eat domestic fowl.
- Even if you touch birds with gloves, wash your hands with soap.
- If you see your children playing with birds, wash their hands and take them to hospital.
- If you see a dead bird on the road, do not go near it.
- Only eat chicken and turkey meat that has been inspected, packaged and produced by a reliable source.
- Eat poultry only after cooking it at a minimum of 70 °C. Make sure that the inside of the meat is also cooked.
- Do not buy eggs with faeces on them. If you have such eggs at home, throw them away without touching any part of them. Wash dirty eggs with soap and water.
- Eat eggs after boiling.
- If you have classic influenza symptoms – such as high temperature; pain in the throat, muscles and joints; cough; difficulty in breathing – go to a health facility.

The UNICEF-led task force is tackling the second task by mobilizing existing networks, including the Child-Friendly Media Network, volunteers in the Girls' Education Campaign, and midwives and other health workers. It is developing communication materials informed by current research, adapting publications that address other disasters (such as earthquakes) and working to incorporate a unit into the national curriculum.

The integrated information/education/communication approach developed in Van is regarded as a model for the rest of the country, and social mobilization elements have now been incorporated into the national pandemic influenza preparedness plan. The integrated approach is also expected to serve as a model for other health-related campaigns.

For a fuller description of the underlying WHO approach to outbreak communications, see Annex 4.

4. Conclusion

Nine key lessons can be extracted from Turkey's experience with avian influenza.

Lesson 1. The time to act is now

The Turkish outbreak demonstrated to everyone in the European Region that avian influenza is everyone's problem. The continuing rapid spread of the virus and its endemicity in a large and increasing number of countries are worrisome. Inadequate surveillance can lead to its discovery among human beings before animals.

Fortunately, public health occupies the centre stage of the global security platform for the first time in history. High-level political will to fight avian influenza is being mobilized in many countries, while global support mechanisms are already well developed and functioning (see Box 5). In addition, unprecedented amounts of resources have been allocated to combat the threat.

Lesson 2. Planning should take place at multiple levels

The Turkish experience has also demonstrated the need for pandemic influenza planning and preparedness to be carried out in parallel at the international, national and local levels. It has also clarified the challenges involved.

The WHO-led mission clearly showed how effective international leadership and interagency cooperation can provide seamless assistance in countering the threat. Early national planning helped Turkey establish domestic mechanisms for rapid problem solving, such as multisectoral crisis committees to address the need for active surveillance and social mobilization.

The remote location of the outbreak epicentre, combined with exceptionally harsh weather, demonstrated the need to decentralize response plans as well as supplies. Box 9 summarizes the elements that contribute to best practice in avian influenza preparedness plans.

Box 9

What is needed to make best practice happen

1. Political leadership focusing on tough issues
2. The whole of government involved, and the private and voluntary sectors
3. Mass-media campaigns to promote healthy actions and pandemic readiness
4. Management systems: funds and standard procedures distributed, key people made responsible and accountable at national and local levels
5. Incentives and compensation schemes to reduce vulnerability and sustain livelihoods
6. Regular reviews of progress by all stakeholders, analysing progress, tracking funds and modifying programme direction
7. External community working together in support of national action

Source: Nabarro (2006).

Lesson 3. Strengthening working relationships between health and veterinary sectors is essential

This realization features prominently in many WHO, ECDC, FAO and OIE reports and recommendations. The Turkish experience certainly reinforced the need for continued emphasis of this point.

It also demonstrated the benefit of having national authorities emulate the collaborative approach of international agencies. The perception of pandemic avian influenza as both a health and security issue – a perception spotlighted by the media – helps create unprecedented opportunities for intersectoral cooperation. In Turkey, no one asked, why collaborate – only how.

Lesson 4. Plans need to be tested; the devil is in the details

The first Turkish preparedness plan, which was published in October 2005, was central in the rapid, successful containment of the outbreak in January. Numerous gaps and omissions became evident, however, when the plan was put into action. The key lesson here is that plans need testing and constant revision as new information and experience are acquired.

Attention to detail can make or break a plan's utility when an outbreak occurs. For example, a protocol for sending lab specimens should identify the carriers who will transport biohazardous materials.

Lesson 5. Pandemic preparedness can strengthen health systems

Public health experts often express concern about the potential diversion of human, physical and fiscal resources from other essential public health activities. The Turkish experience demonstrated that preparing for and responding to a influenza outbreak can strengthen health systems and their key functions: stewardship, resource creation, health service delivery and financing. Moreover, improvements in such competencies as surveillance, case management and database management will also benefit other public health initiatives.

Lesson 6. Cross-border coordination is the only possible way to control viruses

No country can be completely isolated, and viruses do not need passports. The only way that viral spread can possibly be contained is by neighbouring countries' harmonizing control measures and providing mutual assistance with outbreak surveillance and response. The outbreak in Turkey provided an impetus for strengthening agreements and cooperation among the countries in the immediate region.

The 52 countries in the WHO European Region vary widely. In some, public health and veterinary systems sorely need improvement, laboratory capacities are weak and human resources are lacking. In the event of a pandemic, these weaknesses could put the entire Region at risk. To help address them, it is critical that countries that have experienced outbreaks rapidly disseminate what they have learned with those that have not.

Lesson 7. Good communications are key to effective outbreak control

The Turkish experience has reinforced the central role of communications in outbreak response: "as essential to outbreak control as epidemiological training and laboratory analysis" (WHO, 2005a).

It has also pointed up the importance of media participation. Media reports trigger about half of outbreak alerts, and the Turkish media were reporting suspected avian influenza cases in Van province as early as 1 January 2006. Such scrutiny is critical to early surveillance.

In addition, European Member States need to share innovative communications practices. Italy, for example, is using a national text-messaging system as a first-line notification service for all emergencies.

Lesson 8. "Boundary spanners", particularly the WHO country offices, play a critical role

Outbreak interventions work best when they are well mediated. The interventions of the international mission to Turkey worked well largely due to the presence of effective boundary spanners in the WHO Country Office, Turkey. These public health leaders understand both the local context and the spectrum of potential international support, enabling them to link and direct available resources for maximum effect.

The Turkish outbreak experience clearly underscores the value of the WHO country office network as a global health resource.

Lesson 9. Attention to equity pays off

The fact that the epicentre of the Turkish outbreak was in an underserved poor rural area highlights the need for inclusiveness in all pandemic planning. No country can afford to have any gaps in its surveillance and response capacities.

In particular, the outbreak clarified a potential weakness in the degree to which preparedness plans cover the most geographically remote people. Such plans also need to identify and overcome other forms of remoteness: economic, social and cultural. Pandemic plans should also be tested repeatedly with various hard-to-reach target audiences.

Conclusion: now is *really* the time for action

Fears of a pandemic have greatly increased political awareness of how interdependent people are, in health, social and economic terms. Solidarity has begun to seem like a non-altruistic imperative. Once the international spread of avian influenza starts in earnest, each government will understandably make protection of its own population its first priority. The best opportunity for international collaboration – in the interest of all countries – is now, before a pandemic begins.

The need for pandemic preparedness also presents countries with an opportunity to involve people from many different groups in working together for the common good. A threat that could kill as many people as a world war may also prove a powerful force for reasoned tolerance, international solidarity and cooperative action.

References

Danzon M (2006). *Joint WHO/EC/ECDC Workshop on Pandemic Influenza Preparedness, Uppsala, 15–17 May 2006* [presentation bullet points]. Stockholm, European Centre for Disease Prevention and Control (http://www.ecdc.eu.int/pdf/Mar_%20Danzon_Uppsala.pdf, accessed 17 May 2006).

ECDC (2006). *Revised ECDC risk assessment guidelines emphasizes the need to accelerate pandemic influenza preparednes*. Stockholm, European Centre for Disease Prevention and Control (http://www.ecdc.eu.int/press/press_releases/060601_pr.php, accessed 1 June 2006).

GOARN (2006). *Guiding principles for international outbreak alert and response.* Geneva, World Health Organization (http://www.who.int/csr/outbreaknetwork/guidingprinciples, accessed 26 May 2006).

Health Canada (2005). *Ottawa 2005: global pandemic influenza readiness: an international meeting of health ministers* [press release]. Ottawa, Health Canada (http://www.hc-sc.gc.ca/ahc-asc/media/nr-cp/2005/2005_fin_e.html, accessed 28 May 2006).

International News Safety Institute (2006). Reuters issues bird flu coverage safety advice [web page]. Brussels, International News Safety Institute (http://www.newssafety.com/stories/insi/flureuters.htm, accessed 10 May 2006).

International Pledging Conference on Avian and Human Pandemic Influenza. (2006). *Beijing Declaration at the International Pledging Conference on Avian and Human Pandemic Influenza: final as of 18th January.* New York, United Nations Development Group (http://www.undg.org/content.cfm?id=1597, accessed 28 May 2006).

Jakab Z (2006). *Identifying the gaps in Europe's preparedness against an influenza pandemic*. Stockholm, European Centre for Disease Prevention and Control (http://www.ecdc.eu.int/press/press_releases/PDF/060515_1_press_release.pdf, accessed 17 May 2006).

Nabarro D (2006). *Preparing for pandemics* [slide presentation]. Stockholm, European Centre for Disease Prevention and Control (http://www.ecdc.eu.int/pdf/Nabarro_Slides.pdf, accessed 16 May 2006).

New Zealand Ministry of Health (2005). *Avian influenza and pandemic planning: update 4.* Wellington, New Zealand Ministry of Health (http://www.moh.govt.nz/moh.nsf/pagesmh/4756/$File/avianinfluenza-pandemicplanning-update04.pdf, accessed 18 May 2006).

Rodier G, Kindhauser MK (2006). *Global health security: the WHO response to outbreaks past and future.* Copenhagen, WHO Regional Office for Europe (unpublished).

Salvi C (2006). *Turkey, 5–20 January 2006: a debriefing on AI communication*. Copenhagen, WHO Regional Office for Europe (unpublished).

Sprenger M (2006). *Five recommendations*. Stockholm, European Centre for Disease Prevention and Control (http://www.ecdc.eu.int/press/press_releases/PDF/060515_2_press_release.pdf, accessed 16 May 2006).

Turkish Ministry of Health (2005). *Directorate General of Primary Health Care Pandemic Influenza National Action Plan.* Ankara, Ministry of Health.

Turkish Ministry of Health (2006a). *Human avian influenza case. Letter, 6 January 2006*. Ankara, Ministry of Health (B100TSH0110001).

Turkish Ministry of Health (2006b). Sağlık Bakanlığı [Ministry of Health – web site]. Ankara, Ministry of Health (in Turkish; http://www.saglik.gov.tr, accessed 19 May 2006).

WHO (2000). *The world health report 2000: health systems: improving performance.* Geneva, World Health Organization (http://www.who.int/whr/2000, accessed 10 June 2006).

WHO (2005a). *Outbreak communication guidelines.* Geneva, World Health Organization (http://www.who.int/infectious-disease-news/IDdocs/whocds200528/whocds200528en.pdf, accessed 11 June 2006).

WHO (2005b). *Responding to the avian influenza pandemic threat: recommended strategic actions.* Geneva, World Health Organization (http://www.who.int/csr/resources/publications/influenza/WHO_CDS_CSR_GIP_05_8-EN.pdf, accessed 20 May 2006).

WHO (2005c). *WHO checklist for influenza pandemic preparedness planning.* Geneva, World Health Organization (http://www.who.int/csr/resources/publications/influenza/WHO_CDS_CSR_GIP_2005_4, accessed 20 June 2006).

WHO (2006). Avian influenza: situation in Turkey [web site]. Geneva, World Health Organization (http://www.who.int/csr/don/archive/country/tur, accessed 20 June 2006).

WHO Regional Office for Europe (2006a). Influenza and avian influenza. Situation updates – Archive [web site]. Copenhagen, WHO Regional Office for Europe (http://www.euro.who.int/eprise/main/WHO/Progs/INF/situation/20060324_1, accessed 19 May 2006).

WHO Regional Office for Europe (2006b). Together against avian flu. *The Bridge*, 2006, 14:1,3–5.

Zaman National News Desk (2006). Cause of death unfortunately is bird flu. *Zaman* (Istanbul), 5 January (http://www.zaman.com/?bl=birdflu&alt=birdflu&hn=28291, accessed 12 May 2006).

Annex 1. Interviewees and questionnaire respondents

Dr Roberta Andraghetti
Medical Officer, Communicable Diseases, WHO headquarters

Dr Caroline Sarah Brown
Technical Officer, Communicable Disease Surveillance and Response, WHO Regional Office for Europe

Dr Anca Dumitrescu
Director, Special Programme on Public Health Publishing, WHO Regional Office for Europe

Mr Ben Duncan
Press Spokesman and Media Relations Officer, European Centre for Disease Prevention and Control, Stockholm, Sweden

Dr Bernardus Ganter
Regional Adviser, Communicable Disease Surveillance and Response, WHO Regional Office for Europe

Mr Yavuz Mehmet Kontas
Liaison Officer, WHO Country Office, Turkey, WHO Regional Office for Europe

Dr Gudjón Magnússon
Director, Division of Health Programmes, WHO Regional Office for Europe

Dr Luigi Migliorini
Head, WHO Country Office, Turkey, WHO Regional Office for Europe

Ms Liuba Negru
Press and Media Relations Officer, WHO Regional Office for Europe

Dr Ahmet Faik Oner
Head, Paediatric Department, Yüzüncü Yıl University Hospital, Van, Turkey

Dr Gerald Rockenschaub
Regional Adviser, Disaster Preparedness and Response, WHO Regional Office for Europe

Dr Guenael Rodier
Special Adviser for Communicable Diseases to the Regional Director, WHO Regional Office for Europe

Ms Cristiana Salvi
Technical Officer, Communication and Advocacy, WHO Regional Office for Europe

Dr Turan Tan
Doğubeyazit State Hospital, Turkey

Mr Dick Thompson
Communications Officer, Communicable Diseases, WHO headquarters

Dr Mehmet Ali Torunoglu
Head, Communicable Disease Department, Directorate General of Primary Health Care, Ministry of Health, Ankara, Turkey

Dr Peet Tüll
Scientist, European Centre for Disease Prevention and Control, Stockholm, Sweden

Dr Nezihe Yilmaz
Head, National Influenza Centre, Refik Saydam Hygiene Centre, Ankara, Turkey

Annex 2. Avian influenza outbreak questionnaire

Name:

Organization:

Telephone:

E-mail address:

1. What was your role in relation to outbreak?
2. When did you first learn of outbreak and from whom? Where were you based during the crisis?
3. Did you and your agency engage in any preparedness training/exercises before the outbreak? If yes, what did you do and was it helpful?
4. What do you think worked well with regard to:

    a. surveillance
    b. case management
    c. logistics and supply
    d. interagency and intersectoral cooperation
    e. professional training
    f. public communications

5. What were the most difficult challenges?
6. What would you do differently next time?
7. What recommendations do you have for other countries from what you learned?
8. How helpful were the international teams?
9. How could their interventions have been strengthened?
10. Other comments:

Thank you for your help. If you have any questions or comments, call Franklin Apfel or Prue Hardwick (+44 (0) 7737413684). Please return by 10 May to prue@whcaonline.org and whca@onetel.net.

Annex 3. WHO-led international and national team working on avian influenza in Turkey

WHO Ankara team

Ms Elif Farsak
Administrative Assistant, WHO Country Office, Turkey, WHO Regional Office for Europe

Ms Evis Kasapi
Programme Assistant, Investment for Health and Development, WHO Regional Office for Europe

Mr Yavuz Mehmet Kontas
Liaison Officer, WHO Country Office, Turkey, WHO Regional Office for Europe

Dr Luigi Migliorini
Head, WHO Country Office, Turkey, WHO Regional Office for Europe

Ms Helena Vuksanovic
Administrative Assistant, WHO Country Office, Serbia, WHO Regional Office for Europe

WHO coordination office, Ministry of Health

Ms Fadela Chaib
Communications Officer, Office of the Director-General, WHO headquarters

Ms Sarah De Martin
Epiet Fellow, European Centre for Disease Prevention and Control, Stockholm, Sweden

Dr Alan Hay
Director, National Institute for Medical Research, London, United Kingdom

Mrs Asiya Odugleh Kolev
Technical Officer, Social Mobilization, WHO Mediterranean Centre for Vulnerability Reduction Geneva Focal Point, WHO headquarters

Professor Angus Nicoll
Project Leader for Influenza, European Centre for Disease Prevention and Control, Stockholm, Sweden

Mr Asim Rehman
Regional Emergency Officer, Regional Office for CEE/CIS, United Nations Children's Fund, Geneva, Switzerland

Dr Gerald Rockenschaub
Regional Adviser, Disaster Preparedness and Response, WHO Regional Office for Europe

Dr Guenael Rodier
Special Adviser for Communicable Diseases to the Regional Director, WHO Regional Office for Europe

Ms Cristiana Salvi
Technical Officer, Communication and Advocacy, WHO Regional Office for Europe

Ms Canan Sargin
Assistant Project Officer, Health and Nutrition, United Nations Children's Fund, Ankara, Turkey

Dr Emilia Tontcheva
Head, WHO Country Office, Bulgaria, WHO Regional Office for Europe

WHO Van team

Dr Inger Andersson von Rosen
Senior County Officer for Communicable Disease Control, Jamtland County, Ostersund, Sweden

Mr Philippe Barboza
Epidemiologist, Institut de Veille Sanitaire, St Maurice, France

Dr Joseph Bresee
Field Epidemiologist, Influenza, Centers for Disease Control and Prevention, Atlanta, Georgia, United States of America

Dr Caroline Sarah Brown
Technical Officer, Communicable Disease Surveillance and Response, WHO Regional Office for Europe

Dr Thomas Grein
Medical Officer, Department of Epidemic and Pandemic Alert and Response, WHO headquarters

Dr Stephen Lindstrom
Laboratory Specialist, Influenza, Centers for Disease Control and Prevention, Atlanta, Georgia, United States of America

Dr Bina Rubinovitch
Head, Unit of Infraction Control, Rabin Medical Centre, Petah-Tikva, Israel

Dr Nahoko Shindo
Medical Officer, Department of Epidemic and Pandemic Alert and Response, WHO headquarters

Ms Elife Tireli
Technical Officer, Communicable Disease Surveillance and Response, WHO Regional Office for Europe

Dr Carmen Varela
Epidemiologist, European Centre for Disease Prevention and Control, Stockholm, Sweden

Veterinary experts

Dr Giancarlo Ferrari
Infectious Diseases Group, Food and Agriculture Organization of the United Nations, Rome, Italy

Professor Mathias Kramer
Deputy Head, Friedrich-Loeffler-Institute, Federal Research Institute for Animal Health, Wusterhausen, Germany

Dr Yves Leforban
Inspector-General of Veterinary Public Health, Directorate-General for Health and Consumer Affairs, European Commission, Brussels, Belgium, and World Organisation for Animal Health, Paris, France

Dr Juan Lubroth
Senior Officer, Infectious Diseases Group, Food and Agriculture Organization of the United Nations, Rome, Italy

Dr Robert Paul
Director of Operations, State Veterinary Service, Worcester, United Kingdom

Dr Keith Sumption
Animal Health Officer, Food and Agriculture Organization of the United Nations, Rome, Italy

European Commission

Mr Yngve Engström
Head of Financial Management Section, European Commission Delegation to Turkey

Mrs Ulrike Hauer
Head of Trade, Economy and Agriculture Section, European Commission Delegation to Turkey

Ms Nermin Kahraman
Sector manager for agriculture and fisheries, European Commission Delegation to Turkey

Mrs Figen Tunckanat
Sector manager for public health, European Commission Delegation to Turkey

Mr Christian Steiner
Minister/Counsellor, Austrian Embassy in Turkey

Other experts

Dr Rob Stevens
Public Health Specialist, WHO Project Leader, Strengthening the Epidemiological Surveillance and Control of Communicable Disease System (ESCDDS) in Turkey, Ankara, Turkey

Dr Nazan Yardim
Public Health Specialist, Deputy Director, School of Public Health, Ankara, Turkey

Annex 4. Excerpts from *Outbreak communication guidelines*[4]

Disease outbreaks are inevitable, and often unpredictable, events. The environment surrounding an outbreak is unique in all of public health. Outbreaks are frequently marked by uncertainty, confusion and a sense of urgency. Communication, generally through the media, is another feature of the outbreak environment. Unfortunately, examples abound of communication failures which have delayed outbreak control, undermined public trust and compliance, and unnecessarily prolonged economic, social and political turmoil. … But what are the best practices for communicating with the public, often through the mass media, during an outbreak?

…

1. Trust

The overriding goal for outbreak communication is to communicate with the public in ways that build, maintain or restore trust. This is true across cultures, political systems and level[s] of country development.

…

b. Senior management must endorse this goal but winning their support for specific trust-building measures faces many practical barriers.

This is because these trust-building measures are often counter-intuitive (such as acknowledging uncertainty or avoiding excessive reassurance).

…

c. Trust in communicating with the public is critical in both directions. Evidence shows that public panic is rare and most rare when people have been candidly informed. …

…

2. Announcing early

The parameters of trust are established in the outbreak's first official announcement. This message's timing, candour and comprehensiveness may make it the most important of all outbreak communications.

…

3. Transparency

Maintaining the public's trust throughout an outbreak requires transparency (i.e. communication that is candid, easily understood, complete and factually accurate).

---

[4] WHO (2005). *Outbreak communication guidelines.* Geneva, World Health Organization (http://www.who.int/infectious-disease-news/IDdocs/whocds200528/whocds200528en.pdf, accessed 11 June 2006).

Transparency characterizes the relationship between the outbreak managers and the public. It allows the public to "view" the information-gathering, risk-assessing and decision-making processes associated with outbreak control.

…

4. The public

Understanding the public is critical to effective communication. It is usually difficult to change pre-existing beliefs unless those beliefs are explicitly addressed. And it is nearly impossible to design successful messages that bridge the gap between the expert and the public without knowing what the public thinks.

a. Early risk communication was directed at informing the public about technical decisions (known as the "decide and tell" strategy). Today, risk communicators teach that crisis communication is a dialogue.

b. It is the job of the communicator to understand the public's beliefs, opinions and knowledge about specific risks. This task is sometimes called "communications surveillance".

…

d. The public's concerns must be appreciated even if they seem unfounded. …

e. Risk communication messages should include information about what the public can do to make themselves safer. …

5. Planning

… Risk communication should be incorporated into preparedness planning for major events and in all aspects of an outbreak response.

The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

Albania
Andorra
Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Luxembourg
Malta
Monaco
Netherlands
Norway
Poland
Portugal
Republic of Moldova
Romania
Russian Federation
San Marino
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Tajikistan
The former Yugoslav Republic of Macedonia
Turkey
Turkmenistan
Ukraine
United Kingdom
Uzbekistan

No continent is safe from avian influenza; any let-up in attention or prevention efforts would represent a major risk. That is why our Office and the countries in the Region consider this issue to be the most urgent priority today. Our main objective is that each country should have a sound national plan, consistent with those of the other countries in the Region. Good preparations, leading to a rapid response, adapted to the situation, are the only way of minimizing the health consequences of a pandemic.

Dr Marc Danzon
WHO Regional Director for Europe

ISBN 92-890-1386-9

World Health Organization
Regional Office for Europe

Scherfigsvej 8, DK-2100 Copenhagen Ø, Denmark
Tel.: +45 39 17 17 17. Fax: +45 39 17 18 18
E-mail: postmaster@euro.who.int
Web site: www.euro.who.int