

# Pandemic planning in the shipping industry

## — lessons learnt from the 2009 Influenza Pandemic

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### ABSTRACT

*The events around the 2009 A/H1N1 Influenza Pandemic highlighted the need for better planning to ensure protection of those on vessels, protection for ports of call, and protection of business assets (business continuity). The variety of stakeholders involved in the management of a pandemic made it difficult to achieve a cohesive plan during the event itself. By considering the actions during the last pandemic, and the literature available for the shipping industry on pandemic planning, a pathway to better preparation is suggested.*

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**Key words: pandemic, influenza, H1N1, shipping**

### INTRODUCTION

On 11<sup>th</sup> June 2009 the World Health Organisation (WHO) announced the start of the 2009 influenza pandemic [1]. The events that followed the announcement were well recorded in the popular press. However, for most this was simply confirmation of what had been long awaited.

The WHO first convened an Emergency Committee, in accordance with the International Health Regulations (2005), on 25<sup>th</sup> April 2009. This was swiftly followed on 27<sup>th</sup> April by a further meeting at which several key decisions were made:

- the level of pandemic alert was raised from Phase 3 to Phase 4 (see Table 1);
- containment of the outbreak was not feasible. Focus should be on mitigation measures;
- the closure of international borders was not recommended, nor was restriction on international travel [2].

On 29<sup>th</sup> April 2011 the pandemic alert level was raised to Phase 5.

The tourism industry in Mexico was particularly badly affected by the publicity that announcements attracted. Despite the WHO decision not to restrict

international travel, the United States' Centers for Disease Control (CDC) issued a travel health warning for Mexico on 27<sup>th</sup> April [3]. This recommended that travellers postpone non-essential travel to Mexico. On 28<sup>th</sup> April the European Union Health Commissioner, Androulla Vassiliou, was reported as urging travellers to avoid any non-urgent travel to North America [4]. Cruise companies began altering itineraries, and in some circumstances cancelling entire cruises, from 29<sup>th</sup> April [5]. Statements and decisions were being made with significant economic implications, based not only on scientific evidence and the opinions of experts gathered for the WHO Emergency Committee, but also on the need for government agencies and companies to be seen to be reacting to the wealth of information being exchanged in the multitude of information media.

In 1999 the WHO issued guidance for national organisations on the importance of planning for an influenza pandemic; they updated that guidance in 2005 and again in 2009 [6]. Also in 1999 the CDC published preliminary guidelines for the prevention and control of influenza-like illness on cruise ships [7]. The UK Maritime and Coastguard Agency (MCA)

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**Table 1.** World Health Organisation (WHO) pandemic phase descriptions

Phase	Description
Phase 1	No animal influenza virus circulating among animals has been reported to cause infection in humans
Phase 2	An animal influenza virus circulating in domesticated or wild animals is known to have caused infection in humans and is therefore considered a specific potential pandemic threat
Phase 3	An animal or human-animal influenza reassortant virus has caused sporadic cases or small clusters of disease in people, but has not yet resulted in human-to-human transmission sufficient to sustain community-level outbreaks
Phase 4	Human-to-human transmission of an animal or human-animal influenza reassortant virus able to sustain community-level outbreaks has been verified
Phase 5	The same identified virus has caused sustained community-level outbreaks in two or more countries in one WHO region
Phase 6	In addition to the criteria defined in Phase 5, the same virus has caused sustained community-level outbreaks in at least one other country in another WHO region
Post peak period	Levels of pandemic influenza in most countries with adequate surveillance have dropped below peak levels
Post pandemic period	Levels of influenza activity have returned to the levels seen for seasonal influenza in most countries with adequate surveillance

issued a marine information notice in 2007 to highlight the need for pandemic influenza preparedness [8]. This cited UK governmental agency advice on pandemic planning, as well as that given by the WHO. The US Department for Homeland Security also issued guidance to the Maritime sector on pandemic preparedness in 2008 [9].

Despite the wealth of published material guiding the shipping industry and national bodies towards preparation for an influenza pandemic, the 2009 event demonstrated gaps in the practical implementation of any planning that had occurred. The cruise industry worked closely to close these gaps with the CDC, developing protocols to manage potential cases onboard as the pandemic evolved. This work filtered to Public Health groups in the rest of the world as the pandemic spread, and similar gaps were identified.

The world moved into the post-pandemic phase on 10<sup>th</sup> August 2010 following an announcement by the WHO Director-General [10]. In the preceding 14 months more than 214 countries and overseas territories had reported cases of A/H1N1 influenza [11]. The United Nations recognise 196 Members, although up to 50 additional territories and colonies exist, some of which reported data for A/H1N1 surveillance [12]. Over 18 400 deaths worldwide were attributed to A/H1N1 influenza, with a case fatality rate (CFR) of 0.04%. It is impossible to compare this accurately to data for seasonal influenza due to the differences in surveillance data collection, but the CFR for SARS in 2003 was 14–15% [11, 13, 14]. A/H1N1 2009 could

therefore be considered a “mild” illness in mortality terms. Widespread transmission (as defined by the WHO) was seen on every continent at some point during the pandemic, sweeping through the Americas, Oceania, Asia, and Europe within the first 15 weeks [11]. Although every country experienced the effects of A/H1N1, there were variable responses to the situation. The personal account that follows describes the variability and unpredictability of those responses, as experienced in one geographical area.

### **A/H1N1 2009 INFLUENZA PANDEMIC – A PERSONAL EXPERIENCE**

The CDC worked very closely with the cruise industry in terms of both public health measures and individual case management protocols. Ships sailing in US waters benefitted from this collaboration with a well understood approach to ships entering port.

Other countries had different approaches. My experience was in the South Pacific. The ship I was sailing on left Sydney, Australia on 18<sup>th</sup> April 2009 with an almost exclusively Australian passenger group on a 35 day return voyage to Hawai'i. There were 4 ports of call on the islands of Hawai'i from 5<sup>th</sup> to 8<sup>th</sup> of May (Honolulu, Lahaina, Hilo and Kona). The CDC confirmed the first case of A/H1N1 influenza in Hawai'i on 5<sup>th</sup> May, with no human-to-human transmission on the islands. As we travelled back through the islands of the South Pacific we encountered a variety of responses, from simple reassurance that we were following the guidance from the CDC, to face-

to-face visual screening of all disembarking passengers (looking at someone to see if they appeared ill). Most commonly passengers were asked to complete a self-declaration regarding the key symptoms of influenza, and were only allowed to disembark on to an island if they had no suggestion of possible illness. This response was not entirely unreasonable or unexpected. Historical records from the Influenza Pandemic of 1918–1919 describe morbidity rates of up 90% on some islands, and a mortality rate of 25% on others [15]. The islands have limited ability to manage an imported illness, especially if the morbidity is high. The local public health officials were often reassured by discussing the ship's itinerary compared to the timeline of disease spread during the pandemic to the areas we had visited. This was not the situation in Australia however.

During our 35-day voyage we had 2 cases of influenza, which onboard testing had confirmed to be Influenza A. Both cases had been cleared of isolation for more than 10 days prior to the end of the voyage. On 23<sup>rd</sup> May 2009 when we returned to Sydney the ship was placed under quarantine, pending release by the local public health authorities. The process took nearly 8 hours. The officers who arrived at the ship did not have a pre-arranged process for managing the situation despite more than 96 hours notice of the ship's arrival, and a decade of guidance. The information presented regarding the risk of our ship bringing cases of pandemic A/H1N1 influenza into the country, or lack of risk, was not trusted, and therefore ignored, as was the statement by the Director-General of the WHO on 27<sup>th</sup> April that containment was not feasible.

The spectrum of approaches to managing ships in port was seen the world over. There was little congruity between the level of sophistication of a port's public health infrastructure and measured, evidence-based responses to ship arrivals. In fact some of the best collaborations seen between ships and ports were in small communities where comprehensive dialogue was entered into early, with both parties understanding the approach of the other.

## LESSONS LEARNT

It has already been mentioned that pandemic planning has been identified as an important area for strategic and procedural development for over a decade. The events of the 2009 pandemic highlighted that very few groups in the shipping industry had actually mapped practical processes to handle such a scenario. Stakeholders for these scenarios include

the masters of vessels (and their on-board medical teams or executives as appropriate), shipping companies, port authorities, national public health organisations (such as the CDC), and international organisations (such as the WHO). Each of these will have a different emphasis on pandemic planning, but all will have the common goals of protection of those on the vessels, protection for the ports of call, and protection of business assets (business continuity). Review of the processes encountered during the 2009 influenza pandemic highlighted four key deficiencies for the shipping industry:

- lack of practical process – ship and shore, private enterprise, and governmental agencies;
- lack of preparation for the extreme measures encountered;
- lack of evidence-based measures;
- lack of trust between parties.

Many organisations have reviewed their practical processes for handling this type of scenario in future, assisted by a raft of new guidance, some of which is industry specific, such as that by the International Maritime Health Association [16]. There has been a lot of work initiated by the United Nations World Tourism Organization to review the economic and social impact of the pandemic on various communities, and planning around the mitigation of such impacts in future. Some of this work involves reviewing the management of information in the media, in the age of the Internet, as there is no doubt that this influenced decision-making at every level. A WHO review, following the 2009 pandemic, has reported 15 recommendations. One of these is that “the WHO should review and assess the effectiveness and impact of border measures taken during the pandemic to support evidence-based guidance for future events” [17]. Other recommendations cite the need to base decision-making on evidence-based information, accepting that information will evolve as the dynamics of the pandemic become apparent.

Building trust between parties, ahead of the next event, is possibly the most important area to address for pandemic planning. There is a common goal for those from all parts of the shipping industry, including the ports they visit, to ensure the protection of all people who are in contact with any shipping activity. With this commonality in mind, it is crucial to strengthen relationships to ensure all responses are mutually agreed and appropriate to the situation. During the 2009 pandemic, where ports and their visiting ships had good working relationships, processes ran smoothly and effectively. Work has already begun around

the world to strengthen these relationships. The European SHIPSAN project and Brazilian ANVISA collaboration are two such examples, which aim to improve co-operation in the passenger shipping sector.

## CONCLUSIONS

The 2009 influenza pandemic reinforced the importance of pandemic planning for governmental agencies and private industries alike. The shipping industry brings together a multitude of stakeholders from all areas. Shipping will always be considered a significant vector for communicable illness due to the confined situation for those onboard and the large distances its vessels cover. It is also of great importance given its pivotal role in international trade economics. The deficiencies noted informally by the industry following reflection on the 2009 pandemic are echoed in national and international reviews into all aspects of the event. The pathway to better preparation for the shipping industry must include improved dialogue between all parties but especially with port health authorities, as well as preparation for practical elements. If this is achieved then management of all public health situations, no matter how large or small, could be handled on a continuum of response to the benefit of all in safeguarding public health. This is the ultimate goal of pandemic planning.

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