



Monetary Authority of Singapore

**PREPAREDNESS FOR  
AVIAN INFLUENZA PANDEMIC  
AND SECURITY THREATS**

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MAS Information Paper  
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## PREFACE

MAS continues to emphasise the importance for financial institutions (“institutions”) to have in place robust business continuity frameworks and well-tested business continuity plans (“BCP”) to ensure the continuation of critical operations in the event of major operational disruptions. We expect institutions to continually enhance their ability to respond swiftly to emergency situations.

This information paper presents MAS’ observation of sound business continuity practices adopted and implemented by key institutions to mitigate the risks and impact of an avian influenza pandemic and security threats. To enhance their preparedness for such threats, institutions are encouraged to adopt and adapt the practices where appropriate, taking into account the nature and complexity of their operations.

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## **1.0 INTRODUCTION**

### **1.1 BACKGROUND AND OBJECTIVE**

1.1.1 MAS issued a business continuity management (“BCM”) circular in January 2006 to assist institutions in addressing risks arising from an avian influenza pandemic and security threats. The circular highlighted the challenges of a pandemic and emphasised the need for institutions to put in place measures to mitigate the risks and impact. Institutions were also encouraged to implement a holistic BCM approach to deal with disruptions arising from security threats. This should include proactive threat and vulnerabilities assessment, appropriate preventive and deterrent measures, as well as comprehensive immediate response plans.

1.1.2 Following the issuance of the circular, MAS conducted a series of risk-focused supervisory visits to key institutions to assess their state of preparedness for dealing with an avian influenza pandemic and security threats. The objective of this paper is to share with all institutions the good practices which MAS has observed to date. Institutions are encouraged to adopt and adapt the good practices where appropriate, taking into account the nature and complexity of their operations, to enhance their preparedness for such threats.

## **2.0 PREPAREDNESS FOR AVIAN INFLUENZA PANDEMIC**

### **2.1 THE IMPACT OF AVIAN INFLUENZA PANDEMIC**

2.1.1 Given the unknowns of an avian influenza pandemic, estimates of the impact on an economy can vary quite widely. Drawing on the patterns observed in past incidences of disease outbreaks, including the 1918 Spanish flu, the impact of a pandemic can be felt through three channels: a sharp fall-off in domestic demand as consumers refrain from leaving home due to fear of infection and consequently reduce spending; supply-side effects arising from reduced productivity and disruptions to cross-border regional production networks; and external demand effects due to a synchronised slowdown in global demand and possible spill over effects from increased volatility in financial markets.

2.1.2 An avian influenza pandemic poses several challenges. One key challenge is the possibility of low staff availability which could potentially disrupt business operations for prolonged periods. According to the planning assumptions set out in the 'Influenza Pandemic Readiness and Response Plan' published by the Ministry of Health ("MOH") Singapore, a pandemic usually spreads in two or more waves, either in the same year or in successive influenza seasons, with each wave estimated to be up to six weeks. Some waves may also appear mild only to be followed by another more severe outbreak.

2.1.3 Institutions will need to deal with high 'staff absenteeism' rates spurred by fear of contracting the disease during a pandemic outbreak because of the high mortality and morbidity rates. Staff absenteeism may become so severe that existing succession plans may prove inadequate and there may be insufficient personnel available to maintain critical operations.

### **2.2 MITIGATING THE IMPACT**

2.2.1 To deal with these challenges and to survive a long-running outbreak of an avian influenza pandemic, institutions could consider the following critical factors when reviewing their existing BCP:

- provide senior management support and oversight of the planning activities as well as the organisation-wide pandemic preparedness and response plans;
- establish a cross-functional taskforce involving relevant business and support units to develop, implement and maintain pandemic readiness and response capability;
- prepare organisation-wide pandemic preparedness and response plans to deal with the different stages of an outbreak with goals and objectives clearly spelt out;
- establish an avian influenza surveillance and escalation framework to keep abreast of latest developments;
- establish and test business continuity strategies and plans for critical business functions<sup>1</sup>;
- deploy multiple business continuity strategies to cope with high staff absenteeism rates;
- review information technology infrastructure needs so as to anticipate higher network demand due to changes in customer behaviour and preferences (e.g. greater use of internet banking) and to facilitate implementation of various business continuity strategies (e.g. work-from-home);
- establish and test immediate response and escalation plans in the management of staff with symptoms suggestive of avian influenza;
- establish procedures for contact tracing and staff quarantine;
- put in place logistical arrangements required to cope with a pandemic that could last for months (e.g. making arrangements for enhanced cleaning procedures and increased frequencies at higher alert levels, and stocking up of personal protective equipment);
- educate and raise the awareness of staff on avian influenza pandemic measures and development;
- review and enhance communication strategies (e.g. what key messages to convey, as well as when and how to convey the messages) for avian influenza pandemic situation for relevant stakeholders, including staff, authorities, clients/customers, media and service providers/suppliers; and
- establish a framework to assess, monitor and assure that critical suppliers and service providers have implemented appropriate business continuity measures to deal with an avian influenza pandemic.

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<sup>1</sup> Critical business functions may differ among institutions because of different business focus and activities. Some common critical activities include completing payment instructions, clearing and settling transactions, fulfilling end-of-day funding and collateral obligations, managing customers' risk positions and maintaining customer, investor or public confidence.

## **2.3 GOOD PRACTICES OBSERVED**

### **Management oversight and planning approach**

2.3.1 Recognising that an avian influenza pandemic presents unique challenges which will affect not only one but various units of an institution, most institutions have established internal committees or taskforces consisting of business and support units to oversee the development, implementation and maintenance of the avian influenza pandemic plans with detailed plans of action and timeline. Typically, the taskforces comprise personnel from BCM, human resource, corporate security, corporate communication, corporate services, risk management and critical business functions. Terms of reference as well as roles and responsibilities of the taskforces are established. To ensure effective management oversight, the taskforces provide regular updates to the institutions' senior management.

### **Surveillance and escalation framework**

2.3.2 To ensure the relevance of their pandemic strategies and plans, some institutions have established a surveillance and escalation framework which includes surveillance responsibilities and objectives, the sources and types of information to monitor, frequency of surveillance, escalation process and regular updates to senior management on latest developments. Information sources include the MOH and Singapore Government Flu websites, international health authorities and news wires.

### **Business continuity strategies for critical business functions**

2.3.3 Most institutions have established business continuity strategies and plans for critical business functions to address the challenges of an avian influenza pandemic. Set forth below are several business continuity measures adopted by institutions.

### **Intra-function separation during normal business operations**

2.3.4 A staff infected with avian influenza could potentially result in a quarantine order being served to all personnel within the same office, which in turn can affect an entire function within the organisation. Some institutions mitigate such concentration risk by setting up more than one operating site for each critical business function in different locations for normal business operations.

### **Intra-function separation as a pre-emptive measure at higher DORSCON-FLU Alert levels**

2.3.5 Institutions which do not have intra-function separation during normal business operations have put in place plans to do so at higher DORSCON-FLU

Alert levels. Some of these institutions test their intra-function separation plans regularly and comprehensively. The tests typically involve validating day-end/month-end procedures and workflow arrangements between operating locations for an extended period of time. Institutions also stress test their dual-operating site arrangements by closing the primary operating site to validate that the alternate operating site is able to cope with the intended operating levels.

### **'Work-from-home' strategy**

2.3.6 'Work-from-home' ("WFH") strategy, if appropriately implemented, can be effective in dealing with high staff absenteeism rates. Many institutions are exploring ways to implement WFH strategy to ensure the continuation of their critical business operations. As most institutions encounter difficulty in employing WFH strategy for their critical operational activities because of infrastructure constraints and internal control issues, such a strategy may be more suited for managerial functions. Many institutions have enhanced their remote computing capabilities such as enabling remote access to office applications and emails, and increasing network bandwidth.

### **Alternate pools of staff**

2.3.7 In order to mitigate the risk of low staff availability, many institutions have implemented an additional measure of identifying and deploying alternate pools of staff when necessary. These include:

- placing a certain percentage of staff at home or remote location at higher alert levels. These staff would proceed to a pre-identified third site to carry out critical functions should either one or two of the sites be affected;
- identifying an additional pool of backup staff from other departments in other locations. This additional pool is categorised into different tiers according to the staff's ability to take over critical operations. Customised training is provided according to the staff's tier; and
- establishing procedures for overseas offices to take over some of the critical business functions. Typically, these functions include trading activities within treasury and global markets functions. Institutions exercise and rehearse the procedures periodically.

### **Service providers' readiness**

2.3.8 During an avian influenza pandemic, institutions' critical business functions may be disrupted when their critical service providers do not have comprehensive BCP to deal with the impact of the pandemic. Some institutions have established a framework to track and assure themselves that their critical



service providers have implemented appropriate and relevant business continuity measures. Should a critical service provider not have adequate business continuity measures in place, these institutions would implement additional or other mitigating measures to ensure the continuity of their business operations and banking services.

2.3.9 Some institutions have gone further by implementing a comprehensive risk management framework and procedures to assess service providers' business continuity readiness. A combination of on-site visits and surveys are used to assess these providers, depending on their importance.

### **Crisis communication strategy**

2.3.10 A well thought-out crisis communication strategy is a key element in crisis management. Crisis communication generally refers to the management and exchange of information within an organisation and between the organisation and external parties such as the media, authorities and the general public during a crisis. Without a comprehensive crisis communication strategy, an institution may not be able to communicate with its stakeholders effectively and appropriately.

2.3.11 While many institutions have established communication strategies and procedures, some institutions have taken it a step further by pre-drafting key messages for key stakeholders (e.g. staff, media, investors, customers and authorities) for various scenarios (e.g. staff is infected, customer is infected, loss of access to offices) and by ensuring that their business units have prepared useful messages for external parties (e.g. change of operating location and disruption in services). In addition, the mode of communication and timeline for such messages and statements to be communicated at various alert levels have also been predetermined.

### **Workplace infection control measures**

2.3.12 To prevent and delay the spread of the virus, it is important that institutions put in place adequate workplace infection control measures. Some of these include establishing procedures for temperature checks, determining personal protective equipment ("PPE") and other related consumables requirement (e.g. N95 and surgical masks, gowns, goggles, gloves and disinfectant wipes), establishing increased cleaning frequencies at higher alert levels and workplace disinfecting procedures, and putting in place procedures for managing staff and customers with symptoms suggestive of avian influenza.<sup>2</sup>

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<sup>2</sup> MOH Singapore, Influenza Pandemic Preparedness - Guide on Infection Control Measures for Workplaces (Non-healthcare), Updated May 2007

2.3.13 Most institutions have established adequate workplace infection control measures. To ensure availability of cleaning services and PPE at higher alert levels, some institutions have included in the service level agreements made with the service providers and suppliers, increased cleaning and disinfecting frequencies at higher alert levels, as well as lead time where an unscheduled cleaning of workplace is required.

2.3.14 Many institutions have also developed well thought-out pandemic response plans to manage staff with symptoms suggestive of avian influenza. The plans cover the roles and responsibilities of personnel involved and designated route in moving affected staff. Institutions also validate and test their response plans to ensure that staff are conversant with the procedures and will react appropriately given the scenario. Some institutions have distributed, or planned to record and distribute, videos on how to handle staff and customers with flu-like symptoms.

#### **Staff awareness and education**

2.3.15 To assuage staff's concerns about how an institution will safeguard their health and to ensure that staff are aware of their personal responsibility in detecting and preventing the spread of the virus, staff need to be aware of their institution's workplace infection control measures and latest developments of avian influenza. Hence, many institutions disseminate regular health information and personal hygiene guidelines to their staff through briefings, intranet, newsletters and informative posters.

## **3.0 PREPAREDNESS FOR SECURITY THREATS**

### **3.1 THE IMPACT OF SECURITY THREATS**

3.1.1 Terrorist attacks are no longer confined to military and diplomatic facilities, but also include soft targets such as individuals, transportation systems and businesses. Such attacks not only affect the economy and financial system, but present institutions with a number of additional challenges arising from disruptions to public transportation and communication systems, as well as loss of access to office premises within the affected areas. It is therefore important for institutions to adopt a holistic BCM approach and develop tested and validated BCP to counter the risks arising from a severe, wide-area operational disruption.

### **3.2 GOOD PRACTICES OBSERVED**

#### **Security threat assessment and response framework**

3.2.1 A security threat assessment and response framework is an important element of security preparedness and it provides institutions with the ability to implement measures in a timely and organised manner to deal with security threats, especially at higher security alert levels. It includes proactive security threat and vulnerabilities assessment, and implementing appropriate safeguards at various security alert levels to reduce vulnerabilities and to create a certain level of protection.

3.2.2 Some institutions have put in place a comprehensive security threat assessment and response framework that details various security alert levels and the corresponding preventive and deterrent physical security measures to be taken. These institutions also exercise their security measures involving relevant parties such as their building management and security agencies to validate the viability of the measures and to familiarise relevant parties with the measures.

3.2.3 Most institutions have also developed detailed immediate response plans to deal with various security threats (e.g. telephone bomb threat, suspicious letter/parcel bomb and chemical attack) based on guidelines published by the Ministry of Home Affairs, Singapore Police Force, Internal Security Department and Singapore Civil Defence Force. Institutions have also tested the plans and communicated the plans and procedures to staff.

### **Collaboration with authorities**

3.2.4 To enhance private-public partnership in the fight against terrorism, the Singapore Police Force has implemented two schemes, the Singapore Police Force Security Watch Group (“SWG”) and Corporate First Responder (“CFR”) Schemes. The SWG Scheme is a police networking platform for the commercial sector to collaborate with the police on the hardening of their business premises, whilst the CFR Scheme assists SWG member buildings and tenants in recovering from a major disaster such as a terrorist attack, when access to these buildings is restricted. The CFR Scheme allows building management and tenants to identify key personnel who will be permitted into the cordoned area in the aftermath of a major incident to assist with rescue, recovery and investigation efforts, as well as carry out business continuity activities. Most institutions have joined the SWG and CFR Schemes.

### **Transportation and evacuation plan**

3.2.5 Institutions’ recovery efforts could be affected if staff have difficulty getting to recovery sites due to disruption in public transport services or police cordons. To ensure rapid recovery and timely resumption of critical operations, some institutions have developed transport and evacuation plans to move recovery staff efficiently from affected areas to recovery sites. These plans include establishing transport arrangements to move recovery staff and designating pickup points outside the central business district (“CBD”), should CBD be congested or inaccessible due to a wide-area disruption. Some institutions have private vehicles on standby at a separate location to transport recovery staff.

### **Staff tracking and communication**

3.2.6 Effective communication is essential to successful management of crises. Hence, institutions should not over-rely on a single communication channel for wide-area disruption events. Many institutions have established multiple communication channels for staff to report their status and to disseminate information to staff as they recognise that mobile communication network could be unavailable due to a wide-area disruption. Some institutions have in place online secured web interface systems which allow large-scale staff notification and staff tracking through multiple channels (e.g. SMS, phone, email and internet), as well as conference bridging capabilities.

### **Preventive and deterrent measures**

3.2.7 To mitigate the threats of terrorist attacks, many institutions have put in place preventive and deterrent security measures (e.g. access control, closed-circuit television (“CCTV”) surveillance, intruder alarm system and security officers). Some institutions have implemented screening of personnel and

tenants using equipment such as x-ray machines and walk-through metal detectors at building entrances.

## **4.0 CONCLUSION**

4.1 Institutions should have in place validated and well-tested BCP to ensure the continuation of critical business functions. MAS hopes that this information paper will serve as a useful reference for institutions in enhancing their business continuity measures.