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# Plan your pandemic

## A guide for GPs

### Background

Influenza A virus has a range of subtypes characterised by the display of particular surface structures and is associated with significant symptoms and a tendency to cause epidemics and pandemics.

### Objective

This article presents a checklist to assist general practitioners in preparing for an influenza pandemic.

### Discussion

The Australian Federal Government launched 'Exercise Cumpston' in October 2006 to assess Australian pandemic preparedness. The report of the outcomes recommends the integration of general practice into the planning process at a national and jurisdictional level. General practitioners are enthusiastic about receiving further information and training in pandemic preparedness but preparing a general practice to deal with an influenza pandemic is a complex task.

■ **The influenza viruses are a group of three viruses known to cause respiratory infection in humans. Influenza C virus causes only minor respiratory illness. Influenza B has no subtypes and causes a moderate illness. Influenza A however, has a range of subtypes characterised by the display of particular surface structures and is associated with significant symptoms and a tendency to cause epidemics and pandemics.<sup>1</sup>**

The distinguishing structures in influenza A are haemagglutinin (HA) and neuraminidase (NA) spikes on the cell surface. HA and NA are viral surface proteins (referred to as antigens) recognised by the body's immune system. Both are involved in viral replication. HA is responsible for attachment to cell receptors following which infection and then virus replication occurs. NA digests the cell receptor allowing the newly synthesised virus to escape from the cell surface. The subtypes of influenza A are named to reflect the presence of the spikes (eg. H5N1). Subtle variations in the antigens caused by genetic mutation give rise to the phenomenon of 'antigenic drift' where the new subtype may reinfect communities. A major variation in the H and N antigens may provoke an 'antigenic shift' and result in a virulent subtype emerging, even in communities with high levels of immunity to influenza. This only occurs in influenza A and is thought to be the most likely trigger for global influenza outbreaks or pandemics.<sup>2</sup>

### Immunity and transmission

After an antigenic shift, the viral strain is new and populations will have little or no immunity to the virus. Previous vaccination and previous infection with influenza A confer no immune benefit and the usual effect is an illness which is easily transmitted and which causes more serious illness.<sup>3</sup>

Transmission of the influenza virus is by droplet and aerosol spread, including that within confined spaces, and by touching surfaces contaminated by respiratory droplets.<sup>4</sup> These means of



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transmission are important to consider in the general practice setting, both in waiting areas and in the consulting room. The incubation period for influenza virus is 1–7 days, but usually 2–3 days. Adults have been shown to shed the influenza virus from 1 day before developing symptoms to up to 7 days after the onset of the illness. Young children can shed the influenza virus for up to 21 days. Generally, shedding peaks early in the illness, typically within a day of symptom onset. Most symptoms resolve within 2–7 days, although the cough may persist longer.<sup>3,4</sup>

## Pandemics

In the 20<sup>th</sup> century there were three major pandemics of influenza A: ‘Spanish’ influenza in 1918–1919; ‘Asian’ influenza in 1957; and ‘Hong Kong’ influenza in 1968. These pandemics are thought to have resulted in millions of deaths worldwide.<sup>4</sup> Concerns about the consequences of an influenza pandemic have been heightened by recent experiences with SARS and avian influenza (H5N1). In Canada<sup>5</sup> and Hong Kong<sup>6</sup> during the SARS era, 7–35% of general practices were closed. Modelling performed for an influenza outbreak has suggested that up to 9% of general practice working days might be lost at the time of peak incidence.<sup>7</sup> At the same time as the general practice workforce is at a nadir as a result of illness in GPs and their practice staff, the workload required of general practice is likely to be substantially higher than the norm – at an influenza incidence of 25%, 2.6–7.5 million outpatient visits might be required nationwide.<sup>8</sup> At a local level, Tasmanian modelling suggests that with an incidence of 35%, a population of 475 000 might expect consultation numbers of up to 120 000 during the 6–8 weeks of a pandemic and a possible rise in deaths of over 700 people with an additional 2400 hospitalisations.<sup>9</sup> Without appropriate preparation, general practice will undoubtedly struggle to cope with these demands.

## General practice pandemic preparedness in Australia

Substantial time, effort and money have been invested in preparing international, national and state plans for managing pandemic influenza, and many of these have acknowledged the important role that general practice will play.<sup>10</sup> Roles that national general practice organisations might play in supporting general practice have been discussed elsewhere<sup>11</sup> and include education and logistical support (Australian Divisions of General Practice), standards and professional development (The Royal Australian

College of General Practitioners) and advice on industrial and indemnity issues (Australian Medical Association and Insurers) that will confront practices.

The Australian Federal Government launched a live simulation called ‘Exercise Cumpston’ in October 2006 to assess Australian pandemic preparedness. The report of the outcomes has recently been published<sup>12</sup> and several of its recommendations relate specifically to general practice, in particular to the integration of general practice into the planning process at a national and jurisdictional level.

However, there is little published data describing the issues facing GPs at the practice level. An Australian study<sup>13</sup> found that GPs were willing to participate in managing a pandemic, although there were significant concerns about practice preparedness, including issues with provision of personal protective equipment (PPE), the use of antivirals, and indemnity issues. General practitioners were enthusiastic about receiving further information and training in pandemic preparedness. Face-to-face guidance and training were thought to be the most appropriate methods to use, as these could be region specific and incorporate education on planning frameworks involving GPs. Additional suggestions included in-practice training with all practice staff in order to walk through quarantine, PPE, and notification response procedures in the environment where the GPs and support staff will be working. There is yet to be a comprehensive outline of the measures each practice will need to accomplish to prepare for pandemic influenza.

The following pandemic checklist is suitable for use by GPs, practices, and divisions of general practice to provide a practical approach to preparing for pandemic influenza in the general practice setting. *Table 1* describes planning issues for before a pandemic starts, and *Table 2* the issues to be addressed during the pandemic.

## Conclusion

Preparing a general practice to deal with an influenza pandemic is a complex task, and one that requires early action. This checklist provides a detailed and structured outline of the practical steps needed to be taken by general practices to maximise their capacity to deal with the increased workload and needs of their community during an epidemic. We hope that providing a systematic approach to the task will assist comprehensive pandemic flu preparation by GPs and their practice staff.



Table 1. Pandemic checklist for GPs and practices: key planning issues and strategies to consider before a pandemic

Issue	Strategy	Task	Comments
Coordination	Appoint a practice pandemic coordinator	<p>Coordinate pandemic activities that relate to the practice:</p> <ul style="list-style-type: none"> <li>• develop a practice pandemic plan that identifies key tasks and clarifies roles and responsibilities</li> <li>• review necessary infrastructure (eg. PPE), communication, internet/broadband access</li> <li>• maintain close contact with local public health unit</li> <li>• organise training sessions and then 'dry runs'</li> </ul> <p>Pandemic response will be managed in two main phases. Pandemic coordinators will need to be aware of strategies to be used in the early containment phase and then in the wider (maintenance) pandemic scenario</p>	<p>Pandemic coordinator could be the infection control person in the practice</p> <p>Suggest a nurse or someone else who is good at following protocols</p> <p>Practices will need a back up coordinator</p> <p>Each state has a pandemic influenza plan with which the coordinator should familiarise themselves (and the practice). It will be essential for practices to keep in close touch with their local public health unit, especially during the pandemic when information could change quickly</p>
Practice protocols	<p>Ensure the practice has protocols for all components of preventing and managing an outbreak including:</p> <ul style="list-style-type: none"> <li>• surveillance</li> <li>• triaging</li> <li>• changes to workload</li> <li>• managing patients who are potentially infectious (eg. social distancing, quarantine areas)</li> <li>• testing and notification</li> <li>• handling and disposal of infectious materials</li> </ul>	<p>Write protocols or find examples which can be adapted to fit your practice's needs</p> <p>Prioritise key tasks (eg. appointments, phone advice, home visit, accounts):</p> <ul style="list-style-type: none"> <li>• routine appointments</li> <li>• patient with a fever (note: those with prodromal illness may NOT have a fever)</li> <li>• likely case</li> <li>• definite case</li> </ul>	<p>Essential to facilitate practice staff understanding and routines</p> <p>Most state health departments are working on a number of triaging tools and arrangements. These will also be included in the Primary Care Annex of the Australian Health Management Plan for Pandemic Influenza (AHMPPI)</p> <p>Local divisions of general practice may also provide assistance with this task</p> <p>Data collection will also be helpful in facilitating adequate contact tracing for advice and possible antivirals</p>
GP/staff education and training	Provide training on identifying and managing potential and actual cases of influenza, infection control procedures and practice protocols	<p>Training should cover:</p> <ul style="list-style-type: none"> <li>• case definition</li> <li>• identification and notification processes</li> <li>• case management including referral options</li> <li>• personal protection including use of PPE</li> <li>• respiratory etiquette** (practice staff, patients)</li> <li>• hand hygiene†</li> <li>• waste handling</li> </ul>	<p>Division immunisation coordinator could provide on site education and training</p> <p>A useful resource for training has been developed to demonstrate how to use PPEs*</p> <p>Staff who clean the practice should also follow appropriate infection control guidelines</p>



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Issue	Strategy	Task	Comments
Equipment	<p>Ensure adequate supplies of equipment and disposables** including:</p> <ul style="list-style-type: none"> <li>• masks (surgical and N2 P95)</li> <li>• no touch waste receptacles</li> <li>• gowns and gloves</li> <li>• disinfectant, alcohol wipes, tissues and hand towels</li> </ul>	<p>Acquire enough for 2–3 weeks N2P95 masks need to be ‘fit’ tested</p> <p>Identify recommended disinfectants<sup>††</sup> Provide information about when different types of PPEs should be used<sup>††</sup></p>	<p>People with beards will need to shave them off for the P2N95 masks to fit properly</p> <p>Many public health units will arrange ‘fit’ testing</p> <p>Sodium hypochlorite (1 in 50 dilution of a 5% bleach solution) can be used to clean contaminated surfaces</p>
Surveillance	Adopt protocols for identifying early pandemic cases	<p>Early in the pandemic, heightened vigilance for possible pandemic influenza cases coupled with rapid reporting may help to contain the possible spread of a pandemic</p> <p>Use influenza-like illness (ILI) clinical case definition and appropriate laboratory investigations (eg. nose and throat swab for rapid PCR and viral culture)</p> <p>Consider using a symptom check list for patients and practice staff to identify potential cases of influenza</p> <p>Consider acting as a surveillance practice for ASPREN</p>	<p>ILI definitions and laboratory procedures are provided in the AHMPPI and related annexes (Infection Control Annex and Clinical Annex)</p> <p>Not all practices will be doing surveillance, especially once a pandemic is established: contact your local PHU for more information and providing information about accessing PPEs</p> <p>Most state health departments are developing guidelines for surveillance strategies</p>
Antivirals	Appropriate supply and storage of antivirals	Be aware of local and state distribution plans for availability (eg. where and how to order supplies; security issues for their storage)	<p>Review relative contraindications (eg. pregnant women, young children, significant renal impairment)</p> <p>Local public health units will have information about the availability and accessing antivirals</p> <p>It is government responsibility to ensure supply to areas of clinical need</p>
Influenza vaccine and pneumococcal vaccine (PPV)	<p>Maximise regular season flu vaccine coverage and PPV coverage of at risk groups</p> <p>Maximise ability to rapidly provide coverage for pandemic influenza strain</p>	<p>Ensure sufficient supply of free regular season influenza vaccine</p> <p>Ensure recall systems in place for seasonal influenza vaccination and PPV</p> <p>Ensure all staff and GPs are immunised with the regular season influenza vaccine</p> <p>Document availability and where and how to order supplies; security issues (eg. transport, storage, and administration)</p>	<p>Pneumococcal pneumonia is likely to be a significant complication of pandemic influenza</p> <p>Unlikely to be available for 3–6 months after start of a pandemic</p>



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Issue	Strategy	Task	Comments
Infection control	<p>Identify an infection control coordinator (this may be the same person as the pandemic coordinator)</p> <p>Minimise transmission risks in waiting areas</p> <p>Ensure adequate arrangements for disposal of infectious waste materials</p>	<p>Implement infection control policies and procedures</p> <p>Inform practice staff and patients of the key elements of infection control including hand washing,<sup>†</sup> cough etiquette<sup>**</sup></p> <p>Develop protocols to handle suspected cases of pandemic influenza<sup>††</sup></p> <p>Identify separate waiting area for potentially infectious patients plus:</p> <ul style="list-style-type: none"> <li>• plan for removing toys and other fomites and strip the rooms of all needless clutter and noncleanable surfaces</li> <li>• consider a single entry point to the practice for patients</li> <li>• use no touch waste receptacles</li> </ul>	<p>Review the Infection Control Annex, AHMPPI</p> <p>The RACGP and a number of websites also provide standards and guidelines on infection control<sup>†</sup></p> <p>Consider providing surgical masks to potential cases of seasonal influenza attending the practice</p> <p>Assume ALL patients are potentially infectious</p> <p>Practices without a separate waiting area should consider a range of options for potentially infectious patients during a pandemic (eg. initial phone consultation, seeing patients in their cars, referral to a fever clinic)</p> <p>The volume of soiled PPE will be enormous. Arrangements will need to be made to remove waste materials and disposal of infectious materials</p>
Ethical issues	<p>Discuss a range of ethical issues that will influence the business continuity strategy including who is prepared to continue working and who will not be working</p>	<p>Identify who is prepared to continue working and who will not be working (parents, those with chronic health problems, older GPs and practice staff)</p> <p>Discuss issue of paying staff who opt not to work during a pandemic</p>	<p>Recognition of ambivalent views, conflicting values and possible stigmatisation; GP and staff views on limited access to PPE, antivirals, pandemic vaccine strain</p> <p>Each staff member should have an opportunity to discuss these issues and develop their own contingency plan</p>
Workforce and workload review	<p>Maximise use of GP, nurse and other practice staff workforce</p> <p>Review routine tasks to identify what can be delegated or re-organised</p>	<p>Consider GPs (current, retired, regular locums), practice nurses (PNs), receptionists, medical students</p> <p>Estimate current clinical workload and number of extra sessions that could be offered. Identify any additional workforce capacity that could assist during a pandemic.</p> <p>Practices may need to consider pooling or combining with other practices during the pandemic.</p> <p>Adjusting workloads will be essential. Prioritise key tasks for all staff (eg. appointments, phone advice, home visit, accounts, protocols for dealing with routine appointments)</p> <p>Estimate how much clinical consultations could be freed up by delegating, delaying and improved triaging</p>	<p>As the practice is likely to be overwhelmed by additional consultations, phone calls, and home visits, consider employing more PNs as they will provide additional workforce capacity during a pandemic</p> <p>Practice staff may also be away with illness. Think about the possible alternative arrangements for covering absent staff (eg. retired GPs, casual employees, volunteers)</p> <p>Demand for services does not mean that services should be provided. The length of consultations should decrease</p> <p>Develop a business continuity plan to ensure that you have identified supply and other key areas essential to keep the practice running during a pandemic</p> <p>Review plans for patients requiring home visits together with developing a strategy to manage home quarantine cases</p>



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Issue	Strategy	Task	Comments
Communication	Ensure rapid reliable communication with relevant organisations (eg. health departments, divisions of general practice)	Connect to broadband to ensure rapid, reliable and accurate information access Gather information on a range of topics including: <ul style="list-style-type: none"> <li>• how to identify pandemic influenza</li> <li>• accessing services from the practice</li> <li>• what home quarantine involves and how patients will be supported during this process</li> <li>• other pandemic facilities (eg. fever and vaccination clinics/centres)</li> </ul>	Efficient communication will require broadband connection to access commonwealth and state government updates (many states are currently working on these websites)
	Plan for communication with patients	Consider: automated phone information messages for patients; development of or enhancing current practice website Inform patients how they should contact the practice during a pandemic Provide information about self care and when to seek help Encourage patients (especially those at high risk) to develop their own personal plan	Divisions of general practice and state health departments are developing tools and information There is a strong likelihood of increased demands on GP time on the telephone
Patient education	Place patient education materials in the waiting room  Be aware of key public health messages and advice  Inform patients about how the practice will operate during a pandemic	Use a range of posters and patient information leaflets on cough etiquette, minimising risk, what to do if they develop a fever or come in contact with a potential or actual case of pandemic flu Use automated phone messages that can be triggered when a patient rings the practice that provides information on a range of issues including: <ul style="list-style-type: none"> <li>• identifying cases of pandemic influenza</li> <li>• location of fever and vaccination clinics</li> <li>• change in practice services that will occur during a pandemic (eg. nonessential appointments, home visits, repeat prescriptions)</li> </ul>	Encourage staff to police safe behaviour (materials are available from commonwealth and state health departments)
Indemnity and legal issues	Clarify issues related to: <ul style="list-style-type: none"> <li>• occupational health and safety and human resources</li> <li>• duty of care; choices regarding seeing/not seeing patients</li> <li>• indemnity coverage for alternative patient care strategies</li> </ul>	Develop policy with regard to staff reimbursement for absenteeism  Ensure adequate practice and personal insurances	Insurance policies may exclude payment for events that are considered to be natural disasters (these are being discussed by national and state groups including divisions of general practice, the RACGP, government)  Medicolegal issues will need to be addressed where staff take on new or unfamiliar roles



Table 2. Pandemic checklist for GPs and practices: key planning issues and strategies to consider during a pandemic

Issue	Task	Strategy	Comments
Practice protocols	Activate protocols	Coordinator to ensure all practice staff are aware of protocols and clarify any concerns or questions	Pandemic influenza cases will need: <ul style="list-style-type: none"> <li>• to be notified to the local public health unit</li> <li>• appropriate clinical information and investigations (eg. swabs) taken</li> <li>• consideration for antiviral drugs</li> </ul>
Workload adjustment	Delegation	Delegate and reorganise workload tasks (eg. routine care of patients with chronic illness or acute self limiting illness, home visits) and administrative tasks (eg. referral letters, reports, repeat prescriptions)	Consider having one doctor see all suspected or confirmed cases of pandemic influenza Practice nurses will likely take on a much bigger role in the routine management of chronic disease
	Activate triaging protocol including phone, routine appointments and the front desk	Review protocols with practice staff and ensure adequate back up and multitasking in the event that staff member becomes ill	Information to patients could be provided through an automated phone message, on the practice website and notice board, and patient information leaflets
	Make adjustments for GP and practice staff absenteeism	Contingency plans and rosters need to be developed to cope with likely significant absenteeism  Consider pooling of practices or separation of tasks (eg. some practice sites being dedicated to maintaining routine health care services)	Causes of absenteeism include: <b>Involuntary</b> <ul style="list-style-type: none"> <li>• ill, recovering or quarantined elsewhere</li> <li>• in a caring role for family or friends</li> <li>• needed at another practice where another part time role has become full time</li> <li>• transport difficulties</li> </ul> <b>Voluntary</b> <ul style="list-style-type: none"> <li>• fear of infecting family or friends</li> <li>• fear of being infected themselves</li> <li>• expectation of helplessness</li> </ul>
Surveillance	Monitor all staff for the emergence of influenza-like illness Maintain screening protocols for the identification of potential cases	Keep records of health care workers who have attended patients with suspected or confirmed pandemic influenza Initiate screening protocols for potential ILI including appropriate laboratory investigations	Staff symptomatic with suspected or confirmed pandemic influenza should be sent home or remain at home
Equipment	Ensure continuing supplies of necessary equipment and disposables	Review storage capacity, check stock and maintain supply Fluid repellent surgical mask should be used for coughing patients. N2/P95 masks should be worn when there is close contact (<1 m) with a potential or actual pandemic influenza case or during any procedure where there is a likelihood of generating aerosolised viral particles	Strong likelihood of running out of some of the PPE Contingency strategies should be considered



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Issue	Task	Strategy	Comments
Antivirals	Use available supplies as appropriate	Check antiviral protocols with local public health unit. Schedules will vary depending upon whether they are being used for pre-exposure prophylaxis, postexposure prophylaxis, or treatment	Current trials have only looked at prophylaxis for 6 weeks In the containment phase of a pandemic, antivirals will be given to pandemic influenza cases and contacts of these cases
Pandemic influenza vaccine	Maintain check on when available and order	Check regularly with local public health unit about pandemic vaccine availability and distribution and immunisation strategies	State health departments are making plans for mass immunisation centres for the pandemic vaccine (if and when it becomes available)
Communication	Maintain frequent links with local public health unit for updates and revision of protocols	Check public health bulletins for updated information	While regular updates will be provided via public media, especially radio and TV, the internet will give immediate and confidential access to classified information Two way communication will be essential Front line workers need to inform central command of their activities and the effect of their interventions
Minimising spread of infection	Review and revise infection control policies and procedures	Implement respiratory/cough etiquette for all patients with an influenza-like illness Provide a fluid repellent surgical mask to such patients and seat potentially or known infectious patients in a separate waiting room or, if not possible, at least 1 m from other patients	Suspected or confirmed pandemic influenza patients who contact the practice could be directed to a fever clinic (if available)
GP and staff education and training	Review and maintain practice protocols using continuous quality improvement principles	Use appropriate protocols to guide management Use of PPE in consultations Social distancing within the consulting room (eg. return of the big desk between the doctor and the patient and using a white coat) Infection control procedures following the visit of a potentially (or actually) infectious patient	Role for continuing professional development (CPD) reward facilitated by divisions of general practice
Ethical issues	Discussing risk scenarios with patients, especially those at high risk (eg. elderly, chronic disease, pregnant women)		Many patients will not be able to access critical care support if they develop severe pneumonia; use of advanced care directives; pregnant women are at increased risk of cardiorespiratory problems





\* [www.health.gov.au/internet/wcms/publishing.nsf/Content/phd-pandemic-prepared-protected.htm](http://www.health.gov.au/internet/wcms/publishing.nsf/Content/phd-pandemic-prepared-protected.htm)

\*\* Respiratory hygiene/cough etiquette<sup>14</sup>

To contain respiratory secretions, all persons with signs and symptoms of a respiratory infection, regardless of presumed cause, should be instructed to:

- cover the nose/mouth when coughing or sneezing
- use tissues to contain respiratory secretions
- dispose of tissues in the nearest waste receptacle after use
- perform hand hygiene after contact with respiratory secretions and contaminated objects/materials

† Hand hygiene<sup>14</sup>

- Hand hygiene is a crucial practice to reduce the transmission of infectious agents in health care settings and is an essential element of standard precautions. The term 'hand hygiene' includes both hand washing with either plain or antimicrobial soap and water and use of alcohol based products (gels, rinses, foams) containing an emollient that do not require the use of water
- If hands are visibly soiled or contaminated with respiratory secretions, wash hands with soap (either plain or antimicrobial) and water
- In the absence of visible soiling of hands, approved alcohol based products for hand disinfection may be preferred over antimicrobial or plain soap and water because of their reduced drying of the skin, and convenience
- Always perform hand hygiene between patient contacts and after removing PPE
- Ensure that resources to facilitate hand washing (ie. sinks with warm and cold running water, plain or antimicrobial soap, disposable paper towels) and hand disinfection (ie. alcohol based products) are readily accessible in areas in which patient care is provided

†† See Interim infection control guidelines for pandemic influenza in healthcare and community settings. Australian Government, Department of Health and Ageing, June 2006. [www.health.gov.au/internet/wcms/publishing.nsf/Content/D164719ADCC496F7CA25717D00080B37/\\$File/pandemic-infec-gl.pdf](http://www.health.gov.au/internet/wcms/publishing.nsf/Content/D164719ADCC496F7CA25717D00080B37/$File/pandemic-infec-gl.pdf)

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