

Communicable disease outbreaks

The bigger picture

Jeanette E Ward

The role of the general practitioner (GP) as the medical expert at the centre of Australia's multidisciplinary primary healthcare system is never more acute than when populations are threatened by a communicable disease epidemic. This series is a refresher covering key concepts. This fourth article introduces the larger legislative, executive and social framework within which health protection takes place.

On the ground, public health action is most visible in epidemics when cases are diagnosed and managed urgently, or when large-scale efforts are underway to identify and follow up contacts. Similarly, mass vaccination – where indicated for outbreak management – is a quasi-military exercise. Also very apparent on the frontline are situations where public health investigates and solves an environmental factor contributing to a preventable disease transmission pathway. Public health should also deliver practical support for a residential aged care facility with an influenza cluster. Behind this activity on the ground lies a substantial but largely unsung public infrastructure including laws, workforce, information management and research to safeguard the public's health.¹

First among these is the legal basis for public health action. Every jurisdiction in Australia has public health laws passed by parliament, operationally articulated through accompanying regulations and statutes. Public health and biosecurity laws enable actions such as the rare

declaration of a 'state of emergency'. These enable activation of structures, authorities and prescribed composition of these, sometimes with exceptional powers of coercion, capacity to commandeer and ration stocks and resources, and overall control for the public's good. These laws and associated plans also prescribe membership of control structures, such as emergency response coordinators. These laws to ensure public health responses are lawful, proportionate and scrutinised are not uniform across jurisdictions, in part due to constitutional assignment of powers. Each state has legislative power to declare a 'state of emergency', although these do not necessarily have the same name from one jurisdiction to the next. Under state laws, a number of 'directives' can be legally issued for implementation within the jurisdiction, such as including mandatory restrictions to the size of public gatherings and temporary closure of non-essential businesses such as beauty salons. State laws and endorsed plans will designate positions such as a state emergency coordinator for the COVID-19 pandemic to senior bureaucratic roles. Very specific public health matters include disease notification obligations, fines for breaking public health regulations, banning specific pathology tests when these have potential to mislead the public, and restrictions to commercial activity including shutdowns. The Commonwealth also has various legislative powers including those specified in the Biosecurity Act. This is the legal mechanism by which the Commonwealth can ban international flights or impose quarantine requirements for international arrivals.

Travel restrictions to remote Aboriginal communities in the first wave of the COVID-19 pandemic in 2020 required complex coordination between Commonwealth and state laws. Because of the urgency of national pandemics, most of these actions can be invoked under existing regulations through the power vested in state emergency coordinators and do not require any contemporary parliamentary scrutiny.

Legal mandates and endorsed public health plans also clarify who is authorised in each state or territory to formally advise a person they are a 'case' or a 'contact' and therefore must comply with specific public health requirements. These are usually designated as 'authorised' or 'delegated' public health officers to undertake public health actions, and they generally hold official identification such as a badge to indicate this designation. These legal protocols are essential. For example, if a person with human immunodeficiency virus (HIV) is exposing sexual partners or others to transmission risk in a manner contrary to public health advice, a public health order can be considered if the health of others is threatened. In turn, it is critical that the person with HIV cannot credibly claim ignorance of their diagnosis or deny receipt of due advice of recommended behaviour. If an accredited official did not execute and document these functions at the time of case identification, such a claim of ignorance can hold legal weight and compromise public health orders. A similar process is required to enforce quarantine of close contacts of COVID-19.

For these reasons, operational units such as public health teams have standard operating procedures (SOPs). Deviation is discouraged, although some flexibility might be permitted. Epidemic management requires clear, effective and efficient 'command and control' structures where there is explicit role delineation, authority and interdependent accountabilities. These teams can be convened at local, regional, statewide and/or national levels. Individual non-compliance with public health requirements would not likely be tolerated by public health authorities in Australia in an outbreak of Ebola, yet there might be more leniency for behavioural non-compliance during a shigellosis outbreak because of the differences in virulence, transmission routes and the risks of fatality of each pathogenic agent. For all declared notifiable diseases (which can differ by jurisdiction), the highest office holder – such as the Chief Health Officer or Chief Medical Officer – is empowered through standard laws to oversee mandatory notification systems, implementation of routine public health responses in adherence to public health practice guidelines (eg the Series of National Guidelines [SoNGs]), policy formulation and reporting. In turn, the Australian Health Protection Principal Committee (AHPPC) comprises the Chief Health Officers of each state and territory.

For any major communicable disease epidemic that can be anticipated, there are usually pre-set plans to underpin urgent action that will be required under pressure. These plans typically emerge from the knowledge gained from previous epidemics or planning exercises. For example, the global severe acute respiratory syndrome (SARS) pandemic in 2004 triggered senior public health bureaucrats to develop methods to identify resources for requisitioning negative pressure isolation rooms, specific intensive care unit capacities and redirection of admissions. Similarly, Australia's later experience of the influenza A (H1N1) pandemic enhanced planning in state health departments for setting up respiratory clinics and criteria for strategies such as school closures and banning of large events or

management of outbreaks in residential aged care facilities.² All such plans are predicated on specific epidemiological knowledge of disease transmission risks, natural history of disease infection and known effectiveness of interventions. Complementary interagency exercises can identify the most troubling weaknesses in pandemic emergency preparedness.³

As part of this public health infrastructure, policies are developed to manage all relevant aspects of infectious disease responses. For example, infectious materials need careful, prescribed handling in their procurement (eg swabbing in a respiratory clinic where the risk of aerosolisation threatens healthcare workers taking the swab), transporting and processing tests. Setting risk tolerance for these aspects is not always a matter of arithmetic and does require expert judgment based on risk tolerance in the public health system. The Queensland government insisted on biological cabinets to protect healthcare workers processing SARS-CoV-2 polymerase chain reaction (PCR) testing, impeding introduction of point-of-care testing in Aboriginal primary healthcare clinics in that state.⁴ In Australia, the Therapeutic Goods Administration has a critical responsibility to license new technologies such as PCR tests or serological screening tests.⁵ Senior staff in these departments maintain a proactive view on emerging global and national epidemics.

This bigger picture can be incorporated in very practical ways in the emergency response plan every general practice requires for accreditation. These practice plans should include an aide memoire or checklist that can be followed to ensure the practice obtains the best information, patient resources and emerging advice from trustworthy sources. Mechanisms to do so include subscribing to Chief Health Officer alerts, contacting the local public health unit and checking regularly with respected professional organisations including The Royal Australian College of General Practitioners or The Australian College of Rural and Remote Medicine for context-specific guidance.

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