

Why Australia needs a National Centre for Disease Prevention and Control (NCDPC).

[OzSAGE](#) has convened an independent expert panel to produce a report on an Australian Centre for Disease Prevention and Control by July 1 2022. The panel has expertise in public and occupational health and prevention, and includes past chief health officers and others with substantial depth of knowledge on the history of public health in Australia and recurrent deliberations about establishing a Centre for Disease Prevention and Control. This report is made by the panel as independent experts. Panel members were selected on the basis of being independent (not being potential recipients of funding for a new Centre for Disease Prevention and Control). In addition to producing a report, the panel is available to government and opposition as an independent expert resource.

The development of an Australian Centre for Disease Prevention and Control (CDPC) has been debated intermittently for over 30 years without resolution [1-4]. Australia has a number of mechanisms to respond to pandemics and epidemics of communicable diseases, including [The Communicable Diseases Network of Australia \(CDNA\)](#), [The Australian Health Protection Principal Committee \(AHPPC\)](#), both of which have representatives of states and territories. Pandemic response committees which existed at the time of the 2009 influenza pandemic no longer exist, and [The Australian Technical Advisory Group on Immunisation](#) provides advice on vaccine programs. However, there is no national operational response capacity for global or cross-border epidemics of either communicable or non-communicable, including occupational, diseases.

Australia's response to COVID-19 has revealed significant gaps in the way we manage public health problems. We did not succeed in having a harmonized approach to COVID and this led to a less than optimal degree of control, with outbreaks crossing state and territory borders [5]. The pandemic was worse in communities already disadvantaged by social and economic drivers of poor health [6, 7]. Our immunization programme was not well organized, resulting in important gaps in protection [5]. There was a considerable amount of reinventing the wheel.

Effective responses to public health problems require leadership informed by a sound, scientifically based, understanding of the issues [8]. Our view is that current processes and structures do not provide the best basis for achieving this at a national level and that this is true both for emergent public health threats and for ongoing threats to health. We consider that a national resource, in the form of a National Centre for Disease Prevention and Control, will strengthen Australia's ability to respond to public health problems.

Public health is defined as an organised response to protecting the health and wellbeing of populations [9] and comprises three pillars:

- Health protection (for example, legislation such as for seatbelt use, smoking or mask mandates)
- Prevention (such as immunization programmes, masks, testing, tracing and surveillance)
- Health promotion (enabling people and communities to increase control over, and to improve, their health)

Public health in Australia is primarily a state and territory responsibility. In the past, this has often led to fragmentation of responses, when coordinated action would have been more effective.

However, there are examples of national collaboration, which have been highly successful. Unfortunately, most of these examples have been short-lived.

Our health care system needs to focus on prevention as well as on the treatment of established diseases. A national resource is needed to enhance the focus on a long-term view of public health, by engaging in the science, understanding and practice of health protection, prevention and promotion. A national Centre would support governments; state, territory and Commonwealth, by providing high quality analysis and advice, by providing staff and services as needed and by providing operational response capacity. These services would be provided for both emergent and ongoing public health issues. It would also coordinate multidisciplinary workforce training and capacity building in public health and public health preparedness.

A national Centre needs to serve both national and state and territory interests. Although public health is primarily a state and territory responsibility, a national approach can bring effectiveness and efficiencies, especially when faced with threats that cross domestic and international borders. It would need to be responsive to these different interests, but be able to resolve divergent approaches if this is necessary to achieve public health objectives. The governance of a national centre will bring many challenges. There are several possible models, but in principle it should support governments; state, territory and Commonwealth, and this requires a management system in which state, territory and Commonwealth governments have confidence.

A centre also could be a focal point for international response and collaboration.

A national Centre for Disease Prevention and Control

On average, the Australian population enjoys very good, and generally improving, health [10-12]. By several measures we are among the healthiest people in the world, with long life expectancy [10, 12]. However, the death toll of COVID-19 has reduced life expectancy in countries like the US [13, 14], and effects in Australia may be seen in the next few years, with a lag corresponding to the period of closure of international borders and low COVID-19 incidence. Australians generally state they have excellent or very good health. However, there is still room for improvement, and almost 50% of Australians live with chronic disease [12, 15]. While average health is very good, some subpopulations have much worse health; Aboriginal and Torres Strait Islander people have markedly worse health than the rest of the population [12, 16]. Similarly, people living with a disability have a shorter life expectancy compared to other Australians [12, 17, 18]. This is both unjust and economically inefficient.

Principles of operation

In order to make further gains we believe that a national Centre for Disease Prevention and Control should be established. It should operate under the following principles

- It should take prevention of ill health and promotion of good health and wellbeing as its primary goals, and public health control of disease where this is not possible.
- It should have 24/7 operational functions and have responsibility for responses on the ground, actions that enhance and support state and territory functions. These should include support for and enhancement of continuing programmes, such as immunization, screening, disease surveillance and anti-tobacco measures, as well as short term responses to emerging threats including response to cross-border or international emergencies. It should also have advisory functions and help to build a well-trained public health workforce.

- It should be evidence based, using the best available scientific knowledge to inform its actions, and assist states and territories in evidence-based public health responses. In the absence of evidence it may need to create knowledge through sponsorship of appropriate applied research. The Centre should be scientifically independent to enable it to work from the best available scientific knowledge. Legislation should be considered to ensure independence.
- It should be socially and politically responsive, taking account of social values, and should be subject to political oversight. A major issue is the question of public trust. The Centre should be established and operated in a way that builds public trust. Trust is essential for effective public health outcomes [19-21].
- It should cover a broad range of public health functions, ranging from interventions against specific problems, such as communicable diseases outbreaks, through determinants of health such as tobacco smoking and diet, to the broader upstream social determinants of health. The COVID experience has shown that there is a strong interrelationship between chronic and communicable diseases; people with pre-existing chronic diseases had poorer outcomes after contracting COVID [22-25]. For several populations, particularly Indigenous peoples, progress in improving health will not happen unless there are real changes to the social conditions borne by these people. A national Centre should address a broad range of public health issues.
- It should be national and bring together efforts made by the Commonwealth and the states and territories, and the private and health research sectors. It should have the capacity to provide support to states and territories, which may be quite considerable in the event of a major pandemic.

Functions of a Centre for Disease Prevention and Control

Essential functions of a CDPC are

- In conjunction with the Australian Institute of Health and Welfare, and the states and territories, monitoring and evaluating the health status of the population.
- Detecting, investigating, and responding to emergent threats to health.
- Contributing to the creation of the conditions that prevent ill health and promote good health, including addressing behavioural risk factors such as smoking, high blood pressure, diet, and broader risks such as social determinants, environmental risks, occupational risks and consequences of climate change.
- Developing a national strategic plan to improve and promote equity in health of the population. It is particularly important that it has a major focus on improving the health of Aboriginal and Torres Strait Islander populations.
- Developing template regulatory instruments to improve health, enforcing and monitoring the application of regulations to improve health, and evaluating the effectiveness of regulatory instruments.
- Evaluating and promoting equity of access to preventive health services.
- Assessing health risks arising from climate change
- Contributing to public health workforce training, at all levels including surge workforce capacity.
- Contributing to pandemic, emergency and disaster responses.

- Sponsoring, where needed, applied public health research.
- Contributing to quality and safety in clinical health care, for example in the control of health care associated infections, and preventing the emergence of and spread of antimicrobial resistance.

These functions should be exercised either through, or with the cooperation of, states and territories.

Attributes of a Centre for Disease Prevention and Control

Attributes of a CDPC include

- National recognition. This requires high levels of expertise and high levels of confidence and trust by society, including the public, experts, and political leaders. The Centre should have the ability to instigate responses to threats to health on its own motion, except for disasters or major health emergencies, where the Centre should be the main source of expertise and advice and contribute to responding staff to assist political leaders and other agencies in responding to crises.
- National scope. This requires governance arrangements that allow for Commonwealth, state and territory and non-government sectors to work effectively together.
- Independence and scientific credibility. The Centre's operations should be driven by evidence, supported adequate resourcing and infrastructure. The Centre should have adequate staffing, facilities and funding to achieve its objectives
- A high level of collaboration with other health sectors, including clinicians, researchers, non-government organizations and the private health sector.
- National accountability, through a respected governance process.

Governance

Governance arrangements for a CDPC will need to be carefully crafted. A CDPC will need to respond to the social and political concerns of the day, yet it needs also to be scientifically independent, focus on long-term health, and be able to pursue agendas on their scientific merits. In the Australian context, it will need to recognize the constitutional reality that public health is primarily a state and territory matter, and some form of delegation and/or control by states and territories will be required. It needs to recognize and promote the benefits of a national, consistent, and cost-effective response to issues. It needs to recognize the role of the Commonwealth and national agencies. These considerations also mean that the CDPC will need to be some form of public sector agency.

Some possible arrangements include

- A Commonwealth line agency, responsible to a Commonwealth minister. This is not our preferred option as it is unlikely to ensure the ongoing support of states and territories.
- A Commonwealth statutory authority, with a board and ultimate responsibility to a Commonwealth minister. The board should include state and territory appointed representatives under an arrangement with National Cabinet.
- A Commonwealth business enterprise, with a board, including state and territory representation, and looser responsibility to a Commonwealth minister.

- There could be an arrangement that the CDPC operates under a “national law” enacted by each state and territory, which delegates some functions to the national agency. Such a model currently exists for health professional registration [26].

There are agencies overseas which operate in federated nations, or groupings of nations, which have addressed complex issues of governance, and it would be worth examining their governance structures (see the appendix on international examples below). The final model should be developed in consultation with all governments and relevant stakeholders.

Most public health functions will remain the responsibility of states and territories. The CPDC should be a resource that all states and territories (and the Commonwealth) can draw on to assist in the exercise of their functions. The CPDC should be required to be transparent in the advice it offers, and public health actions it undertakes, including being clear about the evidence base.

Appendix: Overseas models of national public health agencies [27]

Many countries have a national centre for disease prevention and control, and nearly all OECD countries have one. Even relatively small countries have found it valuable to invest quite considerable resources in some form of national public health agency. In some countries there is a distinction between centres working to prevent and control communicable diseases and those working on chronic non-communicable diseases. According to the International Association of National Public Health Institutes, 95 countries have a national public health agency. These organizations vary in terms of their responsibilities, structure and governance, reflecting the different government systems and histories of these countries. Generally, their functions include surveillance and monitoring of disease; outbreak detection, investigation and response; health information analysis to inform public health policy development; research; workforce development; health promotion and health education; and laboratory services.

It is possible to classify public health agencies internationally along the dimensions of their scope of operations and governance model. Generally, the scope of these agencies is either narrow, usually focusing on communicable disease control, or broad, encompassing non-communicable diseases and sometimes upstream social determinants of health. Some agencies have a strong operational mandate, and others are more focused on research and advice. Governance arrangements often focus on the degree of independence exercised by these agencies. Some are contained within line departments of health, and some are independent, though all have ultimate accountability to ministers of health. Most promote the idea of scientific integrity and independence. Also relevant to the degree of independence is each country's history and political culture. Federal structures of government have a large bearing on governance systems of public health agencies, as coordination of different levels of government often becomes a political issue.

Examples of national public health agencies

The following examples are a selection intended to illustrate the different ways different countries have addressed the issues of scope and governance.

United States Centers for Disease Control and Prevention (CDC) [27, 28]

The CDC describes itself as working 24/7 as “the nation’s leading science-based, data-driven, service organization that protects the public’s health”. The functions of the Centers for Disease Control and Prevention are

- Detection and response to emerging threats to health
- Tackling the largest causes of death and disability
- Using science and technology to prevent disease
- Promoting healthy behaviours, communities and environments
- Developing public health leaders and workforce
- Surveillance of health and disease.

The CDC is a component of the federal Department of Health and Human Services. It was formed in 1946 as the Communicable Disease Center. The CDC is a very large organization that is engaged in nearly all aspects of public health in the USA. Importantly, the CDC operates many public health programmes of its own. The CDC is the main funder of many state and territory programmes, for example immunization, sexual health, child health and many chronic disease prevention programmes. The CDC plays a leading role in occupational health, health statistics, and Native

American health. The CDC has several workforce development programmes. Graduates of these programmes have been influential on both a national and a global basis.

The USA has a complex public health system with public health agencies at national, state and territory, and county levels. The CDC provides a means of support and coordination of this very large and complex system.

The CDC has a staff of around 11,000 people and a budget of USD 11.1 billion (2018) [29].

Public Health Agency of Canada (PHAC) [27, 30]

The Public Health Agency of Canada was established in 2004, after commissions of inquiry found weaknesses in the Canadian public health system during the SARS pandemic. These inquiries found many inadequacies in the Canadian public health system, and recommended major changes. Similar to the USA, Canada has a complex public health system, with national, provincial and territorial, and local public health organizations. The PHAC is a specialized federal agency reporting to the Minister for Health, but outside the federal Department of Health. Provinces and territories provide public health functions either as part of departments of health or as specialized, more autonomous, agencies. Most provinces and territories have regional public health organizations, either as autonomous health authorities (which often provide the full range of health care and public health services), or regional provincial or territorial health department public health units, or as municipal public health units.

The PHAC is an independent authority that is responsible to the federal Minister of Health. Under the *Public Health Agency of Canada Act*, the Chief Public Health Officer “is the lead health professional of the Government of Canada in relation to public health ... [and] shall provide the Minister and the President [of the PHAC] with public health advice that is developed on a scientific basis”.

The functions of PHAC include:

- Promotion of health;
- Prevention and control of chronic diseases and injuries;
- Prevention and control infectious diseases;
- Preparedness for and response to public health emergencies;
- International collaboration;
- Strengthening intergovernmental collaboration in public health.

The Agency has about 5,000 FTE staff, and a budget of CAD 8.75 billion.

Public Health Agency of Sweden [31]

The Public Health Agency of Sweden has responsibility for

- Surveillance and control of communicable diseases, including outbreak response. This includes emergency preparedness and some regulatory powers.
- Providing scientific and methodological support for health promotion and disease prevention, including support of suicide, alcohol, tobacco, narcotics, and gambling control programmes.
- Detecting, preventing and removing environmental health hazards.
- Reference and high-security microbiology services.
- International collaboration.

The Public Health Agency of Sweden is under the responsibility of the Ministry of Health and Social Affairs. It was formed in 2014 by the merger of the Swedish National Institute of Public Health and the Swedish Institute for Communicable Disease. The National Board of Health, the precursor of these institutes was founded in 1878.

Public health in Sweden has a very broad remit; targets in the national public health policy include increasing equality in income and economic resources, and increasing social participation and influence; in addition to more traditional targets such as improving health knowledge, health behaviours, and work and working conditions. Health equity is a key objective of Swedish public health policy.

The Agency has a staff of some 450 people, and a budget of SEK 354 million (2014).

Netherlands Institute of Public Health and the Environment (RIVM) [32]

The Dutch Institute of Public Health and the Environment is an agency under the Ministry of Health, Welfare and Sport. It is responsible to the Minister, but has legislated independence in the conduct of its work. The Institute has a Scientific Advisory Board and a Board of Directors to assure independence. It was founded as the Central Laboratory for Public Health in 1910.

It has legislated responsibility for

- Monitoring, surveillance and research to support policy development and implementation for public health and the environment.
- Reporting on public health and the environment.
- Managing or supervising prevention programmes at the direction of the Minister.
- Monitoring and researching environmental health hazards and advising on appropriate control programmes.
- Participating in international public health collaboration.
- Other activities as directed by the Minister.

The Institute supports local and national government in the control of communicable diseases by conducting national surveillance and response. It operates the national immunization programme. It operates the neonatal and cancer screening programmes and several chronic disease prevention and environmental programmes.

The Institute has 1700 employees and a budget of EUR 353 million (2018).

UK Health Security Agency (UKHSA) [33]

The UK Health Security Agency is an “executive agency” of the Department of Health and Social Care. It is an “arm’s length body” of the Department, with governance arrangements intended to ensure both independence and accountability and set out in *the Framework Agreement between the Department of Health and the UK Health Security Agency*. The Agency has statutory functions, rights and responsibilities. Guidance and direction is provided by the Secretary of State for Health and Social Care through an annual “remit letter” which sets out the government’s objectives for the Agency. Management of the Agency is the responsibility of the Chief Executive, advised by an Advisory Board, and is under the sponsorship of the Department of Health and Social Care. The Chief Executive has an unfettered right of access to the Secretary of State. The Agency was formed from Public Health England in 2021, essentially by removing responsibility for chronic disease prevention and health promotion.

The functions of the Agency are in the area of health protection, including:

- Surveillance and control of communicable diseases, including immunization and outbreak and pandemic preparedness and response.
- Control of chemical and radiological hazards.
- Scientific advice to inform policy on communicable diseases and environmental threats to health.

The Agency exists alongside the Chief Medical Officer of the Department of Health and Social Care, who also has important public health responsibilities.

In 2021 the Agency's budget was GBP 15 billion, a large portion of which was short term funding for COVID control.

Korea Disease Control and Prevention Agency (KDCA) [34]

The Korea Disease Control and Prevention Agency was founded in 1949 as the Central Health Centre. The status of the Korea Centre for Disease Control was elevated in 2020 from "Centre" to "Agency" meaning that the Commissioner (chief executive) has vice-ministerial status and the independence of the organization was increased. There has been an additional increase in staff.

The agency has the following functions:

- Public health emergency response
- Public health surveillance, response, planning and coordination
- Infectious disease policy, response and emergency preparedness, including quarantine, healthcare response and medical stockpile management
- High level microbiology services
- Healthcare associated infection control and immunization
- Chronic disease prevention and control

The KDCA has a staff of 1500 people.

Finnish Institute for Health and Welfare (THL) [35]

The Finnish Institute for Health and Welfare grew out of the National Board of Health (established in 1811) and the National Serum Institute (established in 1911). It was established in 2009 from the merger of the Finnish National Public Health Institute and Finnish National Research and Development Centre Welfare and Health. The Institute is largely a statistical and research centre, in some ways similar to the AIHW, but also has operational public health responsibilities.

The Institute's functions include:

- Promoting public health and welfare, including social equality, health and wellbeing, welfare state research and reform
- Assuring health security, including environmental health, infectious disease control and Immunization, and providing high-level microbiology services
- Providing some government services, such as forensic chemistry and medicine
- Special services

The Institute has an annual budget of EUR 85.9 million.

European Centre for Disease Prevention and Control (ECDC) [36]

The ECDC is an agency of the European Union, established in 2005 to improve communicable disease control across the EU. It works with national public health agencies of the EU as a central coordination point for Europe-wide communicable disease surveillance and control. Its main functions are to

- Conduct surveillance of communicable disease and assist in responses to outbreaks
- Provide scientific advice to the EU and member countries on disease prevention and control
- Conduct a public health training programme
- It provides scientific evidence and advice to governments and national agencies and conducts training of a public health workforce.

It has a governing Management Board, with national representation, and an Advisory Committee. It was established by regulation of the European Union which defines its powers and modus operandi. The founding regulation emphasizes the independence and scientific basis of the ECDC's work, but also requires the ECDC to work with national public health institutes and respond to the European Parliament and European Commission.

The ECDC has a budget of EUR 58 million, and a staff of 200, plus staff seconded from national member agencies.

Panel members

Prof Bill Bowtell (Adjunct professor at UNSW and a strategic health policy consultant. Involved in Australia's response to HIV/Aids and global response to HIV and other infectious diseases. OzSAGE member)

Ms Kate Cole (occupational hygienist, OzSAGE member).

Prof Stephen Duckett (health economist, Honorary Enterprise Professor, University of Melbourne. OzSAGE member)

Dr Kalinda Griffith (UNSW Scientia Lecturer, Centre for Big Data in Health, expert in measurement of health disparities, with a particular focus on cancer and Indigenous Data Governance)

Dr Robert Hall, Chair (former Chief Health Officer, Victoria, a founder of the Communicable Disease Network of Australia).

Prof Lisa Jackson Pulver (deputy vice chancellor, University of Sydney)

A/Prof Marion Kainer (infectious diseases physician and medical epidemiologist, Western Health, past US CDC employee and trainee).

A/Prof Kamalini Lokuge (ANU, public health physician who has worked for Médecins Sans Frontières, WHO and the International Committee of the Red Cross in a range of humanitarian emergencies. OzSAGE member)

Dr Cathy Mead (former Chief Health Officer, ACT, a founder of the Communicable Disease Network of Australia).

Prof Michael Moore (Past CEO of the Public Health Association of Australia and former ACT Minister of Health).

Dr Karina Powers (Occupational Physician, MPH, OzSAGE member).

Prof George Rubin (former Chief Health Officer, NSW, past US CDC employee and trainee).

A/Prof Linda Selvey, (A/Prof public health UQ and former Executive Director, Population Health Queensland).

Prof Tony Stewart (Director of the ANU Master of Applied Epidemiology, Australia's field epidemiology training program, and previously, WHO's Health Emergencies Program and the Global Outbreak Alert and Response Network).

A/Prof Lisa Whop (Torres Strait Islander epidemiologist, Senior Fellow at ANU and NHMRC EL2 Fellow)

About OzSAGE

[OzSAGE](#) is a multi-disciplinary network of Australian experts from a broad range of sectors relevant to the well-being of the Australian population during and after the COVID-19 pandemic. OzSAGE formed in response to the COVID-19 pandemic, meeting for the first time on August 16, 2021. In the midst of many competing expert opinions, OzSAGE offers well-researched and robustly debated independent expert advice. Members of OzSAGE are not paid and provide their time without remuneration and without a political agenda.

Members have experience, expertise and frontline roles in public health, infectious diseases, virology, immunology, epidemiology, vaccinology, clinical disciplines (intensive care, emergency medicine, infectious diseases, paediatrics, paediatric intensive care, occupational medicine, mental health, allied health, and multiple other subspecialties), Aboriginal health, engineering, built environment, occupational hygiene, laboratory science, basic science, research and development, behavioural and social science, multicultural engagement, communications, law, computer and data science, public policy and economics.

Panel Terms of reference:

OzSAGE expert panel on an Australian Centre for Disease Prevention and Control

Background

The development of an Australian Centre for Disease Prevention and Control (CDPC) has been debated intermittently for over 30 years without resolution. Australia has a number of mechanisms to respond to pandemics and epidemics, including [The Communicable Diseases Network of Australia \(CDNA\)](#), [The Australian Health Protection Principal Committee \(AHPPC\)](#), both of which have representatives of states and territories. Pandemic response committees which existed at the time of the 2009 influenza pandemic no longer exist, and [The Australian Technical Advisory Group on Immunisation](#) provide advice on vaccine programs. However, there is no federal operational response capacity for global or cross-border epidemic, occupational, or public health response.

The [National Critical Care and Trauma Response Centre \(NCCTRC\)](#) which manages [The Australian Medical Assistance Team \(AUSMAT\)](#) deploys teams of volunteers to international medical emergencies. It was established in response to the 2002 Bali Bombings, and has strong capability in trauma and disasters, and has more recently developed public health response capability. In addition, Australia has a number of National Centres, including in Immunisation, Drug and Alcohol and HIV, with a fragmented current landscape and a lack of national operational field response capacity. Similar fragmentation exists within the area of occupational health leading to the inability of current governance structures to prevent work-related disease. This was highlighted most recently by the [National Dust Disease Taskforce](#) and [acknowledged by the Commonwealth Government](#) as needing improvement. The fragmented approach of the existing system with little opportunity for data linkage or information sharing across jurisdictions prevents the ability to understand and prevent emerging workplace diseases.

The last time a CDPC was considered by a Federal government was in 2012, when [a report on the need for a national CDC](#) was produced after consultation with stakeholders. The COVID-19 pandemic has resurrected the debate about a CDPC, but many countries with CDCs or similar structures such as the US, UK and Canada have fared poorly in pandemic control. Political and other influences have taken precedence over the health of populations in some cases, illustrating that having a CDPC in itself is not a guaranteed solution. Obstacles to forming a centralized CDPC include rivalries between large cities in Australia and the existing national capabilities across the country. The problem of forming a CDPC includes decisions about current fragmented capability. Would a new CDPC simply fund existing structures and networks to increase their capability, or would a new structure be created? If the latter, would there be an interim plan to phase out current structures and implement a new one? The panel will consider these questions and other relevant information, and develop a proposal for an Australian CDPC by July 1 2022. This will comprise:

1. Background of Australia's public health history, including the different current National Centres with public health, surveillance and response remit (Immunisation, HIV, Drug and Alcohol etc and AusMAT). Past efforts and consultations about a national CDC (including the 2012 consultation) will be reviewed.

2. The panel may interview key stakeholders, also considering the 2012 stakeholder input. Submissions can be requested from selected stakeholders (eg. PHAA, state and Federal agencies, CDNA, PHLN, National Centres).
3. Outline the obstacles to forming a CDC.
4. Gaps identified through management of the 2009 influenza pandemic and the COVID-19 pandemic.
5. Potential models for a national CDC – devolved/networked (current structures further enabled), centralised, integration of networked laboratory capacity or CDC lab in a separate location. Strengths and limitations of each.
6. Remit and function of a CDC – including operational field response. How broad should the public health remit be (NCD, communicable diseases, environmental and occupational health)?
7. Preferred model (structure and remit).
8. Governance, mechanisms for working nationally within a Federation and legislated independence,.
9. Interim plan for transitioning from fragmented current system to future CDC.
10. Other recommendations.

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