ENVIRONMENTAL HEALTH ACROSS THE GLOBE

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How an Australian Centre for Disease Control Can Reinforce Environmental Health Systems and Services

Editor's Note: We are familiar with the phrase, "Environmental health is extremely local." While environmental health affects most of us on the local level, we also understand that environmental health is universal and does not know borders. The location, geography, people, and conditions can differ but the science and principles of environmental health do not. In this new column, the National Environmental Health Association (NEHA) will present environmental health issues and topics from a global perspective. Understanding environmental health on a global scale can help us recognize how that influences our local spheres and provides learning opportunities to broaden our perspectives.

The conclusions of this column are those of the author(s) and do not necessarily represent the views or official position of NEHA.

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The Australian government is working to establish a Centre for Disease Control (CDC). The goal is to ensure pandemic preparedness, lead the federal response to future disease outbreaks, and prevent noncommunicable and communicable diseases (Australian Government, 2022a). This news is welcomed as Australia is the only country in the Organisation for Economic Co-operation and Development (OECD) without a CDC or similar national organization (Australian Government, 2022b). The nation is uniquely placed to build on lessons from other countries to create a "world-class" Australian CDC by reinforcing environmental health systems and becoming the champion for evidence-based policy.

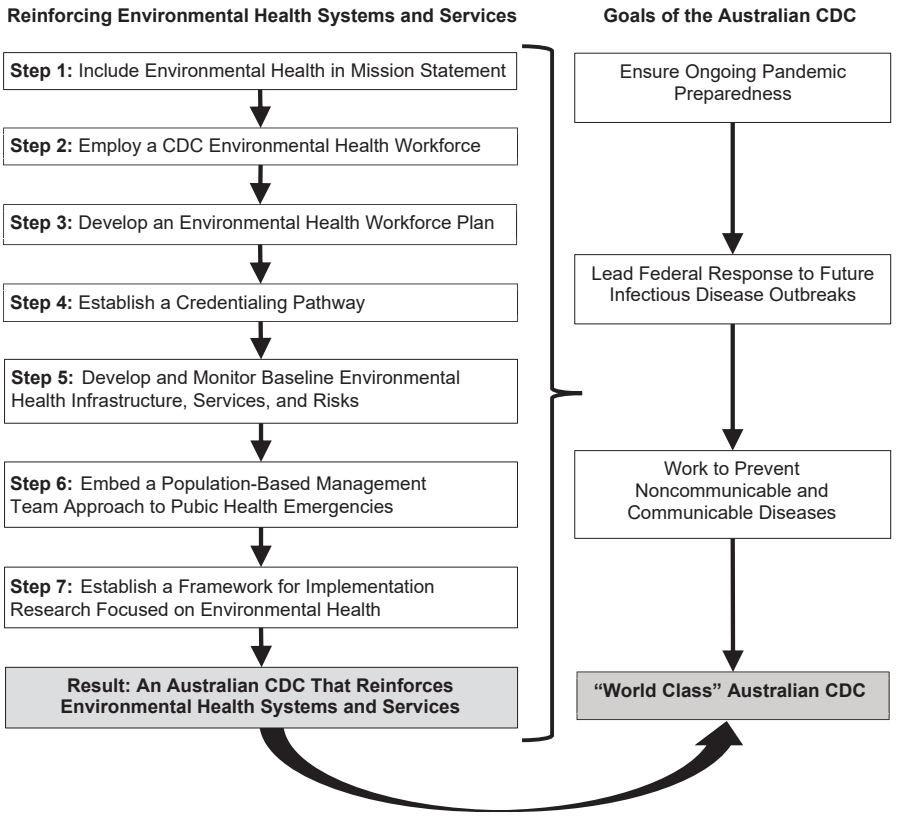
In Australia, local authorities along with state and territory governments manage and address environmental health risks (Australian Government, 2022c). These risks include air pollution, food safety, water quality, waste management, sanitation, infection control, animal and pest management, occupational health, hazardous materials (e.g., asbestos, lead), risk assessment, and education (Environmental Health Australia, n.d.). The majority of environmental health professionals in Australia are employed in local governments (Whiley et al., 2019). More broadly, the profession works across disciplines to ensure the safety of essential public health services.

The management of environmental health risks in Australia over recent decades has been distributed across government and many nonhealth agencies (Dwyer, 2022). This distribution has included shifting the management of risks to town planning, water management, and occupational health, and public health issues becoming dominated by clinical perspectives (Dwyer, 2022; Whiley et al., 2019). For example, strongyloidiasis, an issue primarily in Indigenous Australian communities, is largely due to failing wastewater systems, inadequate waste collection and disposal, overcrowding in houses, and inadequate veterinary care; however, these risks are often overlooked in favor of clinical treatment with ivermectin (Hays et al., 2017; Whiley et al., 2019). The success of this treatment has reduced environmental health advocacy without preventing reinfection, which demonstrates that clinical intervention alone cannot solve public health challenges (Ross et al., 2017; Taylor et al., 2014; Whiley et al., 2019).

There is an urgent need to reinforce environmental health at a national policy level

FIGURE **1**

Steps to Reinforce Environmental Health Systems and Services and Goals of the Australian Centre for Disease Control (CDC)



in Australia. For example, environmental health has a secondary role in the Australian CDC consultation paper and is not included in the *Senate Select Committee on COVID-19: Final Report*; *Fault Lines: An Independent Review Into Australia's Response to COVID-19*; *Australian Government Crisis Management Framework*; or *Australian COVID-19 Response Management Arrangements: A Quick Guide*. Funding has also struggled to cover needs in workforce development, practitioner training, and research. Additionally, there is no job code for environmental health listed by the Australian Taxation Office, but there are over 20 types of inspectors and more than 55 different types of nurses (Australian Taxation Office, 2022; Whiley et al., 2019).

Many nations have environmental health (i.e., science and workforce) integrated within their national public health agency model (Dwyer, 2022). The OECD (2020) recognizes how enhancing environmental health systems can reduce the vulnerability of communities to disease outbreaks, epidemics, and pandemics while improving overall societal well-being and resilience. Also, following an environmental health approach supported by optimal practitioner performance significantly reduces the impact of diseases on both communities and health systems (Kelley & Anderson, 2012). In the U.S., the Centers for Disease Control and Prevention, National Environmental Health Association, and Baylor University developed an initiative to support the environmental health workforce—Understanding the Needs, Challenges, Opportunities, Vision, and Emerging Roles in Environmental Health (UNCOVER EH)—and the profession is listed in the Pandemic and All-Hazards Preparedness and Advancing Innovation Act of 2019. To build on these lessons, we recommended that the steps outlined in Figure 1 be implemented.

The first step is to include environmental health in the mission statement. This inclusion would recognize that environmental health is a backbone of the public health system, which is beyond the scope of most doctors, nurses, and allied health professionals (Brooks & Ryan, 2021; Whiley et al., 2019). For example, communicable disease control specialists tend to take a narrower approach to managing risks as their expertise lies in the disease control itself, not the systems that generate risk (Dwyer, 2022). This step would also reflect that environmental health risks will continue to emerge, especially as Australia is now one of the more urbanized countries in the world (The World Bank, 2021). For example, per- and polyfluoroalkyl substances (PFAS) emerged as an issue in the early 2000s and are found in disposable food packaging, cookware, furniture, carpet, and manufacturing plants (Sunderland et al., 2019). The role of environmental health science is to understand the human health risks from PFAS and then, if necessary, implement interventions.

Steps two, three, and four would require employment of credentialed environmental health professionals coupled with a workforce development plan. Credentialed professionals would ensure that interdisciplinary thinking from a whole-of-society perspective is ingrained into the Australian CDC. Also, the Australian CDC would need to work with Environmental Health Australia to establish a credentialing framework to ensure alignment with other professions and colleagues in the UK and U.S. An environmental health workforce plan would bring all these components together. A template could be the Environmental Health Workforce Act (2021), which was introduced to the U.S. Congress to prioritize the needs of new and existing environmental health professionals.

The fifth step would be for the Australian CDC to work with local, state, and territorial governments to track and monitor environmental health infrastructure, services, and risks. This work could be in the form of an index or registrar, which would allow the Australian CDC to create a baseline, understand areas of need, and guide invest-

ment into public health system architecture. Once a baseline is established it would become a routine process to monitor progress. Also, this approach would reflect historical trends that public health interventions with the greatest impact on populations have addressed environmental factors (Whiley et al., 2019). In a pandemic situation, this approach would rapidly shorten the time needed to build public health capacity to drive a whole-of-society response.

Finally, the Australian CDC should embed a population-based management team (PBMT) approach along with a framework for implementation research focused on environmental health science (Burkle et al., 2021). A useful research template would be the Consolidated Framework for Implementation Research (Damschroder et al., 2022). This framework combined with PBMTs would ensure a range of disciplines with no profession taking priority over another, as well as fully explore and understand intervention measures and their impact on all aspects of society (Burkle et al., 2021). The benefit of this approach was demonstrated during the COVID-19 pandemic when Baylor University identified the need to safely reopen in person to support the Waco community and students, staff, and faculty (Ryan et al., 2022). By combining environmental health with a PBMT approach to mitigate risk, Baylor University was one of a few universities in the U.S. to open in fall 2020 and sustain operations throughout the pandemic.

As the backbone of the public health system, the Australian CDC should work to reinforce environmental health systems and services. Professionals in this field are based in communities, their training is interdisciplinary, and they focus on mitigating risk across all aspects of society. Further, the profession demonstrates its integral role through the balance of tension that can arise between community viability and protecting lives. The steps outlined provide a foundation to unleash the capabilities of environmental health in Australia. Ultimately, the steps provide a clear pathway toward a "world-class" Australian CDC that drives better health outcomes for all Australians.

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