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▶ INTERNATIONAL PERSPECTIVES

International Environmental Health Skills, Knowledge, and Qualifications: Enhancing Professional Practice Through Agreements Between Countries

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Abstract Environmental health is practiced primarily at the local level; however, many of the skills held by environmental health practitioners (EHPs) are transferable globally. There is currently a shortage of EHPs in many parts of the world and formally recognizing the transferability of skills and knowledge within the profession might encourage people to consider environmental health as a profession, helping to address the shortage. To facilitate this transferability, our global community of practice has mapped the environmental health practice requirements of the U.S., UK, and Australia to enable comparison of each one to the others and demonstrate the level of similarity in practice requirements. Our ultimate goal is to facilitate memoranda of understanding (MOUs) between the various professional bodies that oversee environmental health practice, which would allow qualified EHPs to practice in any of these countries. This flexibility would benefit the profession, professional practice, and individuals. MOUs are a way to recognize the similarities and differences between practices in these countries and provide pathways to address differences when they exist, such as via short courses and work experience. We present data to illustrate our argument that there is much overlap in the practice of EHPs. We see our research as a first step to engage with professional bodies in other countries and to facilitate MOUs between many countries, both to raise the profile of environmental health globally and to provide an attractive pathway for people to consider environmental health as a profession.

Keywords: cross-country recognition, environmental health practice, United Kingdom, United States, Australia

Introduction

Environmental health is a multifaceted discipline, and practitioner skill sets include assessment of risk, interpretation of legislation, implementation of policy, and application of regulatory tools (Friis, 2018;

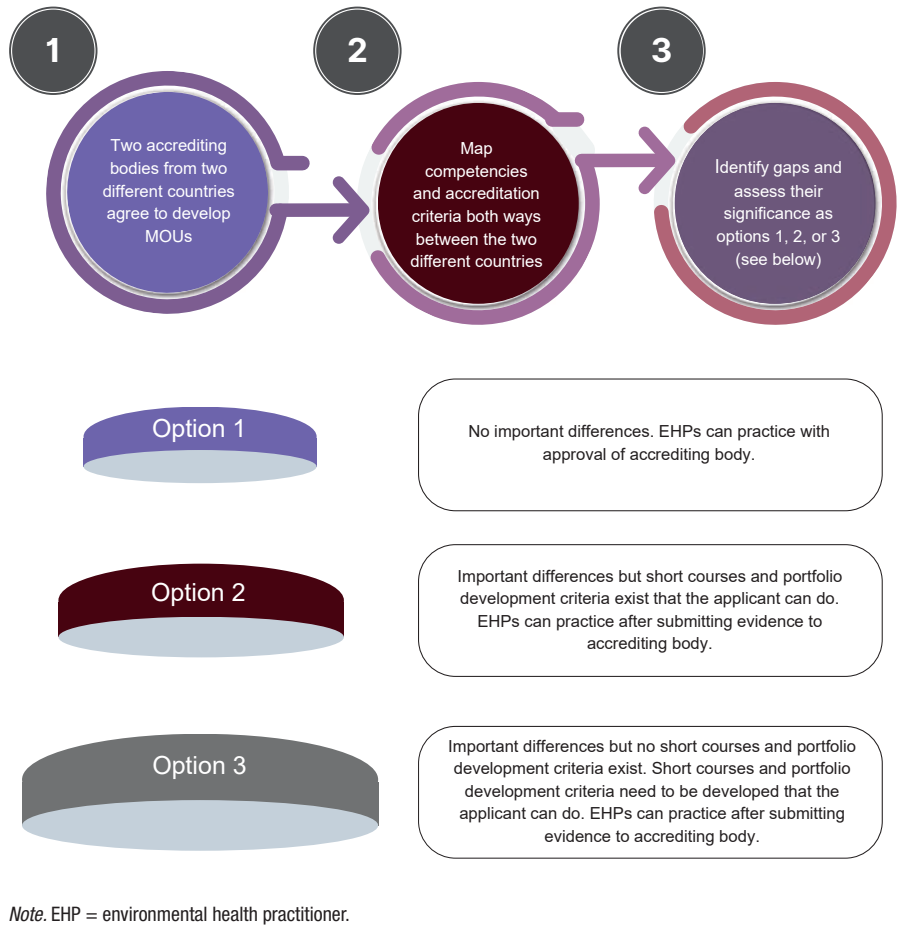
Frumkin, 2016). Environmental health practitioners (EHPs) are also skilled negotiators and communicators and are well-versed in working with personnel in other disciplines (Bartram & Setty, 2021; Eldridge & Tenkate, 2006). Environmental health is practiced

primarily at the local level (Dyjack, 2015; Rodrigues et al., 2021; Whiley et al., 2019), but many of the skills held by EHPs are transferable globally, which was made clear during the COVID-19 pandemic (Dyjack et al., 2021; Rodrigues et al., 2021).

A major impediment to practicing environmental health in a country that an EHP did not graduate from is that environmental health practice is often conducted under specific pieces of national or state legislation, including various public health and food acts. Authorization to use these legal tools generally is conferred by holding accredited qualifications acquired through university study, con-

FIGURE 1

Theoretical Process for the Development of Memoranda of Understanding (MOUs) Between Countries



ferral of authorization by a professional body, or a combination of both. The ability to readily acquire authorization to practice in another country creates a barrier to the movement of EHPs internationally. Notably, even when an individual EHP role might include few or no regulatory responsibilities, the barrier to across-country practice remains significant.

The possible implications of this lack of movement include impacts on professionals learning from one another, the visibility of the profession, and the capacity to recognize the global nature of environmental health. Additionally, the ability to practice in a different country is likely to enhance the desirability of the environmental health profession, especially among young people seeking adventure and people interested in making a difference

beyond their home country, which would begin to address the global shortage of EHPs.

The current significant shortage of EHPs in many parts of the world has been described in the scientific literature (Day, 2021; Huong et al., 2020; Ryan & Hall, 2022; Whiley et al., 2019) and gray literature. The extent of the problem of the EHP shortage has become clear through discussions within our international community of practice (CoP), which consists of a group of environmental health academics and professionals who meet regularly to discuss environmental health (Dyjack et al., 2021; Rodrigues et al., 2021). This shortage is possibly a result of the lack of recognition of environmental health as a profession, which has been described in the literature by authors from many countries (Brooks

et al., 2019; Kong, 2022; Mbazima et al., 2021; Whiley et al., 2019). Environmental health frequently is confused with environmental science or other professions, and its invisibility results in low numbers of people entering the profession. Efforts, in various formats and across numerous platforms, have been made to address this invisibility (e.g., an advertisement produced by the National Environmental Health Association [NEHA; Strahle, 2021]). Yet the profile of EHPs remains consistently low despite the extensive work undertaken during the pandemic (Dyjack et al., 2021; Rodrigues et al., 2021).

Skills and Knowledge of Environmental Health Practitioners

Environmental health is defined as those aspects of human health (including quality of life) that are determined by physical, chemical, biological, social, and psychosocial factors in the environment. The term environment broadly includes everything external to ourselves, including a person's physical, natural, social, and behavioral environments (Environmental Health Intelligence New Zealand, n.d.). EHPs regulate these components to protect public health by using regulatory tools that allow them to oversee the safety of sites such as food premises, wastewater treatment centers, cooling towers, public swimming pools and spas, and body piercing businesses. They conduct risk assessments, health impact assessments, and public health planning; manage public health in disaster events such as flooding and wildfires; and take responsibility for public health protection in many other areas. We seek to demonstrate that the skills and knowledge underlying these responsibilities—mainly conducted with authorization under public health legislation or regulations—are transferable between countries. Demonstrating this transferability is the first step to facilitating recognition to practice environmental health in countries beyond an EHP's home country. We started this project by examining the skills and knowledge required to practice as an EHP in the U.S., UK, and Australia.

Methods

The method we used to collate information was based on methods described in earlier papers (Dyjack et al., 2021; Rodrigues et

al., 2021). To summarize, a CoP was formed using exponential nondiscriminative snowball sampling of our existing contacts (Etikan et al., 2016; Goodman, 1961). This CoP was composed of EHPs and academics who assessed the activities, skills, and knowledge held by EHPs in the U.S., UK, and Australia that allow EHPs to practice under their respective public health legislative and regulatory guidelines. We used the following skills and knowledge bases for our comparison:

- The U.S. skills and knowledge base were taken from accreditation guidelines from the National Environmental Health Science and Protection Accreditation Council (www.nehspac.org) and the NEHA Registered Environmental Health Specialist/Registered Sanitarian (REHS/RS) credential exam (www.neha.org/rehs-rs-exam).
- The UK skills and knowledge base were taken from the Chartered Institute of Environmental Health (CIEH) Professional Standards Framework v1.4 (www.cieh.org/professional-development/our-professional-standards).
- The Australian skills and knowledge base were taken from the enHealth Environmental Health Officer Skills and Knowledge Matrix. These criteria are used by Environmental Health Australia to determine the content of university awards, which then allows graduates to practice as EHPs (www.eh.org.au/documents/item/868).

These three sets of skills and knowledge bases were mapped for comparison (Supplemental Tables 1–4, www.neha.org/jeh-supplementals). Gaps in knowledge or skills that were identified were then considered in light of existing training offered by one or more of the countries to see if it would be possible for EHPs to obtain further study using existing short courses from one of the other countries. Where there are no readily identifiable formal educational pathways to acquire the required additional skills and knowledge, other pathways can be considered, including work experience and reflective practice reports (Figure 1).

Results

The results of the skills and knowledge mapping of UK/Australia and U.S./Australia clearly showed that most practice areas were duplicated by all three countries. Additionally, in all curricula for these three countries, we found a fundamental science foundation,

risk assessment skills, an understanding of policy and legislation implementation, and the capacity to communicate with both the public and other health professionals.

Moreover, we found only minor gaps in the knowledge and skills of EHPs who were qualified to practice in the other countries (Supplemental Table 5). Next, we detail how these minor gaps could be addressed.

The UK/Australia mapping showed that UK-trained EHPs hold all the skills and knowledge to practice in Australia. We identified one main area of difference: EHPs in the UK are responsible for housing, for which there is no comparable responsibility for EHPs in Australia. This gap can be addressed through an existing short course offered by CIEH, Understanding and Applying the HHSRS (Housing and Health Safety Rating System).

The U.S./Australia mapping identified that GIS knowledge and knowledge of injury and violence prevention were lacking from Australia's EHP curriculum. To address this gap, we propose that existing science and risk assessment knowledge held by qualified EHPs from Australia likely provides a transferable understanding of these areas. Alternatively, candidates could take the U.S. EHP exam (i.e., the NEHA REHS/RS credential exam).

Discussion and Conclusion

We have demonstrated that there are few differences in the skills and knowledge of practicing EHPs across the U.S., UK, and Australia, which indicates that although jurisdictional pieces of legislation will need to be understood by EHPs who practice in another country, the foundational knowledge and skills are consistent across these three countries.

Our work shows that these three countries approach environmental health practice in a similar way. It is also clear that the accreditation requirements and the level of academic rigor that underpins these requirements are comparable, which is interesting because environmental health practice has shifted over the past 30 years. For example, in Australia, a sub-university award (i.e., lower than university but post-secondary level education) was the qualification required to practice as an EHP in the 1990s, but this requirement has shifted to a university-level degree, or even postgraduate award (Environmental Health Australia, n.d.). The ongoing comparability of the environmental health practice across these countries

indicates the ongoing academic advancement of the profession. This comparability also supports the idea that environmental health encompasses a diverse set of practice requirements (enumerated in the Introduction) that are reflected internationally.

We have provided strong evidence that recognition for the practice of environmental health exists across the U.S., UK, and Australia and is possible because of the comparability of these countries' practice requirements. We have identified some minor gaps in skills and knowledge and identified pathways for these gaps to be filled in a practicable way. The next step for these three countries is to engage with the relevant professional bodies (i.e., Environmental Health Australia, CIEH, and NEHA) to develop MOUs that would be publicly available. This step would demonstrate clearly to interested parties the route that needs to be taken to engage in EHP practice across countries, which would require a commitment from the relevant professional bodies (Figure 1). It is well recognized that support from professional bodies is imperative for organizational change (DuFour, 2004; Greenwood et al., 2002).

Limitations of our overview include that the scope is restricted to the opinions and work undertaken by our group. Further, there are differences in practice, terminology, and legal tools used in different countries. Additionally, our mapping represents a point in time—the documents that were used will inevitably change as requirements in EHP practice change.

The next step for our CoP is to initiate the mapping exercise with other countries, starting with European Union countries, specifically Portugal and Estonia, as these countries are already represented in our CoP. We also invite any other academics or professional bodies who might be interested in engaging in this exercise to contact the corresponding author. This invitation is particularly for any parties in Asia, the Americas, or Africa, as we are interested in how we might involve these continents to advance global recognition of environmental health practice across different countries. ✨

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