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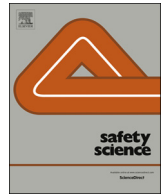
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Development of a global framework for OHS professional practice

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ABSTRACT

There have long been discussions on the professionality of occupational health and safety (OHS) and concerns about standards of practice, with the recognition of OHS as a profession further inhibited by lack of clarity on role and variations in terminology and principles underpinning practice. In 2013, the International Network of Safety and Health Practitioner Organisations (INSHPO) recognized the need for a global approach to reconceptualise OHS professionals as influential leaders who can work to integrate OHS within business processes. The *Occupational Health and Safety Professional Capability Framework: A Global Framework for Practice* was subsequently developed by this international body representing OHS professional associations across 10 countries with the outcome endorsed by 53 organisations at a ceremonial signing of the Singapore Accord. This paper reviews the development of the framework and the emergence of two clear roles; the OHS Professional and OHS Practitioner. It explores the process for clarifying the roles and required knowledge and skills together with the challenges experienced along the way. The paper recognises that the framework should not be a static document and so concludes by considering the work still to be done.

1. Introduction

The development of professional structures and frameworks has been an ongoing objective for Occupational Health and Safety (OHS) professional bodies and OHS professionals. A number of papers in this special edition attest to such activities at a national level with the rationale based on the importance of such structures in professional recognition and in driving quality of professional practice. The International Social Security Association (ISSA) and later the European Network of Safety and Health Professional Organisations (ENSHPO) took the focus from that of individual countries to encompass the European Union (EU) with one outcome being the EUSAFE project (see Hale, 2019). In 2010, the International Network of Safety and Health Practitioner Organizations (INSHPO) took up the challenge of defining a framework for OHS professional practice which would be acceptable and useful at the global level. This paper describes the evolution of this framework from its origins in 2010 culminating in the signing of the Singapore Accord in 2017. The paper begins by sketching the process used to develop the framework. It then describes the final form of the framework and reflects on the challenges encountered in its

development. It provides a status report of the contribution to the profession to date and finally considers future directions and development for the framework.

1.1. INSHPO - the organization

Building on the concept of ENSHPO as a regional, European collective of OHS professional associations, INSHPO was set up as a global forum for international collaboration among OHS professional associations. The aim in forming INSHPO was to improve health and safety at work by enhancing the recognition and influence of those providing OHS specialist advice and to advance and enhance the quality of OHS practice globally. From its creation in 2001, INSHPO has grown to include 13 member organisations across 10 countries with ENSHPO representation extending the influence across 29 European countries.[1]

1.2. The starting point

From the time of its establishment INSHPO set a priority on comparing and harmonising the roles and education of OHS Professionals

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[1] Member countries of INSHPO are currently: Australia (Safety Institute of Australia); Canada (Canadian Society of Safety Engineering, Board of Canadian Registered Safety Professionals); Italy (Associazione professionale Italiana Ambiente e Sicurezza); Mauritius (Institution of Occupational Safety & Health Management); New Zealand (New Zealand Institute of Safety Management); Singapore (Singapore Institution of Safety Officers); South Korea (Korea Occupational Safety and Health Agency); Russia (National Association of the Centres for Occupational Safety and Health); United Kingdom (Institute of Occupational Safety and Health, National Examination Board in Occupational Safety and Health); United States (American Society of Safety Professionals, Board of Certified Safety Professionals). https://www.inshpo.org/members.

across countries globally, starting with its member countries. This was motivated by a concern to facilitate the employment of OHS Professionals beyond the countries in which they received their qualifications. Initially a 'passport to practice' was conceived where certain agreed education and experience requirements would give an approval to practice across participating countries (Lovelock, 2011). However, the variations in education systems and the prevailing country-specific professional recognition schemes made this an unworkable concept.

The seeds for an alternative approach were planted in 2011 when the INSHPO Board invited representatives of the EUSAFE project (Hale, 2019) and the Australian Body of Knowledge project (Pryor, 2019) to address the INSHPO Board as part of a workshop on international standards of practice held in association with the 20th World Congress on Health and Safety at Work in Istanbul. Other workshop presenters included representatives of the US Board of Certified Safety Professionals (BCSP), the Board of Canadian Registered Safety Professionals (BCRSP), the UK National Examination Board in Occupational Safety and Health (NEBOSH) and the UK Institution of Occupational Safety and Health (IOSH). Originally planned for one day, this workshop ended up extending to two and one half days with the additional time being used to validate the comparative analysis of international standards for certification of OHS generalists conducted as part of the Australian OHS Body of Knowledge project (Pryor, 2019). The resultant comparison was seen by participants as a major milestone in developing a baseline for international standards of practice.

Choosing to build on work already existing, the board of INSHPO commissioned two pieces of work:

(1) Further analysis of the original data collected through the ISSA/ENSHPO questionnaire to answer the questions: "What do OHS Professionals do?" and "Does the level of education impact on what an OHS Professional does?" (Turner, 2014; Hale, 2019).
(2) Analysis of documents provided by INSHPO member organisation to identify common themes to inform a framework (Hale, 2013). (See Appendix A for a list of documents analysed.)

While the outcomes of these two pieces of work were informative, the analyses undertaken, particularly that by Hale (2013, and as reported in Hale, 2019) revealed that the variations (and gaps) in approach across different countries made detailed comparison difficult. Two of the nine documents explicitly described two levels of professional while the others were limited to one level. While the structure and style of the documentation varied, the diversity in documentation was most evident in the dimensions of OHS practice addressed within each document and the varying emphases. For example:

- The Russian Order explicitly lists tasks related to the development and monitoring of a safety and health budget for the company
- The Australian OHS Body of Knowledge has more emphasis on the topic of leadership and is more explicit about the role in influencing the design phase of the system. It is also explicit in the value of a systems approach to structuring the knowledge and practice of the Professional and there is an emphasis on the OHS Professional as a gatherer and consumer of knowledge and as a problem solver with an explicit model of practice
- The Dutch document echoes this last aspect and goes further, placing an emphasis on the advisory skills of the Professional, on entrepreneurship (particularly for consultants) and on a client- and results-oriented approach
- The Canadian documents also place explicit emphasis on influencing the design phase with environmental management and sustainability a separate domain of knowledge
- The Canadian, US and Australian documents have a detailed and extensive treatment of the legal context and how it works, and of the assessment of legal compliance as a central part of the safety professional role

- The Canadian and Australian documents have very extensive lists of the hazard types which form an important dimension of the professional area of expertise which are omitted from the other documents (Hale, 2013, p. 7–8).

Given this diversity across countries, the INSHPO Board determined that a new approach was required which would take account of the key features of the requirements for practice in each member country while setting an international view of the OHS Professional as a strategic advisor.

A small working party, reporting to the INSHPO Board, was formed to progress the development of the framework. This consisted of the authors of this paper assisted by contributions from Dr David Borys.

1.3. The need for change

In most countries, OHS was and is still not a regulated profession. In more than the half of countries surveyed in the INSHPO report (Hale, 2013) and in the EUSafe study (EUSafe, 2013) there are no legislated educational or experience requirements for employment as an OHS advisor/coordinator/manager/consultant. There is, however, a plethora of OHS courses offered in the market in almost all countries surveyed in those two studies. These typically range from short courses, through technician level training to university level courses at bachelor and/or master level.

However, OHS is still often seen and actioned as a compliance function (Olsen, 2012; Hale and Guldenmund, 2006) while the relationship between compliance and OHS performance has still to be reliably proven (Hill, 2006; Shannon et al., 1999). Furthermore, there is no broad agreement as to what constitutes an OHS Professional. The terminology for referring to both OHS as an activity, and to those who practice OHS, varies across countries and within countries, as do the positioning of the boundaries that divide up the area. There is, however, a clear indication at both national and international levels that the professional OHS associations are very active in seeking clarification of the current roles of OHS personnel and have a clear objective to develop those roles into a higher professional level of functioning. This aspiration is reflected in the work of first the International Social Security Association (ISSA), followed by ENSHPO and then INSHPO in developing frameworks and voluntary standards for the emerging profession over the last 35 years (see Hale, 2019).

The status of the profession at the time as reported in the literature is well summarized by Provan et al. (2017):

The job design, title and 'mission statement of safety professionals varies widely across industries and within organizations. Brun and Loiselle (2002) found more than 100 different titles. Hill (2006) identified no common definition of practice or common terminology to explain what safety professionals do. Even line managers may not understand, nor does the general population (Lawrence, 2008a, 2008b; Ferguson and Ramsay, 2010). … Given these disparate objectives of safety professional roles within organisations, having a common understanding and evaluation of safety professional effectiveness remains elusive for both organisations and individuals themselves (Provan et al., 2017, p. 99).

A series of articles published by the then American Society of Safety Engineers (ASSE) (Lawrence, 2008a, 2008b, 2009) reflect the concerns of the time regarding the performance and status of the OHS Professional. In reporting the results of a survey of OHS Professionals and corporate managers it was noted that:

… in several areas, the perceived performance of the safety professional fell below management's stated expectations (Lawrence, 2008a, p. 24)

Acting on the findings of this survey and other engagement with the OHS Professional and business community, ASSE identified the need to:

Demystify the role of SH&E and move them out of the shadows by shedding light on their capabilities and competence (Lawrence, 2009, p. 25).

During the same period, in 2007, concerns regarding the consistency of the quality of OHS advice by OHS Professionals were identified by a state OHS regulator in Australia. As part of their strategic planning process, WorkSafe Victoria identified a gap in the quality of advice being given to some workplaces and subsequently initiated the OHS Body of Knowledge Project (Pryor, 2019).

In the European Union, the Framework Directive of 1989 (EU, 1989), required that employers have access to competent advice about prevention from either inside or outside their organisations. This requirement led to a significant increase in the employment of OHS specialists and aspiring professionals. In some countries, this support was focussed on technical workplace risks and their prevention, but other countries, notably those in north-west Europe (UK, Netherlands, Scandinavia), placed considerable emphasis on advice and support about organisational and OHS management aspects of prevention.

Discussion and deliberations by the INSHPO members identified that for OHS to be valued as a profession there had to be a change in the perception of the OHS professional from that of a technical compliance manager to one of influence and leadership; for the OHS professional to move into roles and activities not traditionally considered those of the technically-focused OHS role. This change was essential to both raise the professional profile of OHS and enhance OHS professional practice. As recently as 2017, it was argued that:

Despite some evidence and argument to the contrary …, the professionalization of the safety role is widely considered necessary for advancing the quality of safety professional practice and improving the regard for safety professionals (Provan et al., 2017, p. 100).

As part of professionalising the role, it was also realised that there was a need to conceptualise the role at two levels: the Professional and the Practitioner.

However, variations across countries in standards of practice, approaches to managing OHS, terminology and professional recognition schemes meant that a different strategy was required to engage the various countries in a collaborative approach that could be applied in different cultures, legislative frameworks and OHS paradigms, and could embrace both the technical and the organisational requirements for prevention.

2. Methodology

The Global Framework was developed through an iterative process over a five-year period (2013–2017). The methodology is summarised in the framework document as:

"The working party collected and reviewed the documentation from national professional associations and certification bodies, including that already analyzed by ENSHPO in the EUSafe project [www.eu-safe.org], to define the role, functions and competencies of OHS practitioners and professionals. Given the great diversity of approaches across countries, the working party developed a new overarching structure designed to encompass all approaches.
The draft framework document was subject to critical review, both through INSHPO's own channels and at international conferences and presentations, including the XX World Congress on Safety and Health at Work 2014 in Frankfurt and the 7th International Conference of the Working on Safety Network (wosnet 2014) in Scotland. The framework has been further enhanced through a collaborative project with the International Council on Mining and Metals (ICMM) on OHS capability in the mining and metals industry." (INSHPO, 2017, p.3)

However, this summary captures neither the organic nature of the development of the framework, nor the evolution of the transformational objective of reconceptualising the OHS professional role from that of

problem solvers …... provid[ing] advice on combating increasing or plateauing rates of work-related fatality, injury and illness, investigating near misses and accidents and devising programs to provide a framework for OHS decision making and action (INSHPO, 2017, p.10).

To one of

a continuous improvement expert, or "value engineer" … who truly understands work processes as a system and offers solutions to improve the system of work before anything goes wrong or an actual injury or damage is identified. … break[ing] down barriers (silos) between safety and operations. … integrat[ing] safety into business operations where OHS specialists work alongside workers, supervisors and managers with the shared purpose of continually improving work processes (INSHPO, 2017, p.10).

Neither an explicit methodology, nor an agreed vision of the final product, was determined at the beginning of the project. However, on reflection and with hindsight, the authors consider that the framework has been developed through an iterative review process orchestrated by the working group, with input and oversight provided by a constant core (the INSHPO Board members) enhanced by other groups including the membership of OHS professional bodies, OHS educators, conference participants, and OHS Professionals and managers from the mining industry, who all provided critical comments and suggestions as feedback to the working group. The summary timeline in Appendix B gives a brief review of the development trajectory which was managed throughout by the working group.

3. The framework

The coincidence of the 21st World Congress on Safety and Health at Work and the launch of the INSHPO Framework provided an opportunity to formalise a collective call to action by OHS professional bodies, businesses, policy makers and educational institutions to join with INSHPO and its members to sign the Singapore Accord.[2] In signing the Singapore Accord 53 signatories made four key commitments:

1. We are committed to improving OHS professional and practitioner capabilities so they may more effectively guide and lead the creation of healthier and safer workplaces.
2. We are committed to promoting the use and acceptance of the **Framework** as a common platform to develop capable, knowledgeable, and skilled OHS professionals and practitioners across industry sectors and geographic borders.
3. We are committed to striving to use the **Framework** to inform our work in relation to improving the competence and capability of the profession and thereby occupational health and safety standards across the world:
   a. **As OHS professionals and practitioners** – as a reference and basis for gap analysis in relation to our professional practice and career development, to aid the development of continuing professional development plans to ensure that we are capable and competent;
   b. **As OHS member associations** – in the development of professional educational programs and as a benchmark to ensure that our members possess relevant and up-to-date skills which allow them to undertake their role competently and effectively;
   c. **As OHS certification bodies and credentialing organisations**

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[2] See http://singaporeaccord.org/web/the-singapore-accord/accord-signatories for a full list of signatories.

– as a resource in the development of our certification standards and designations, and other assessment processes;

   d. **As employers and human resource professionals** – in developing position descriptions for OHS roles, in recruiting OHS personnel and in performance evaluation as a basis for professional development;

   e. **As OHS educators** – in developing and reviewing OHS education programs;

   f. **As policy-makers in governments and public authorities** – in the development of legislation and regulations that govern competent and reliable OHS advice and the role and development of OHS practitioners and professionals at workplaces.

4. We are committed to continued cooperation and collaboration in developing global standards of practice for the purpose of improving the skills and capability of OHS professionals and practitioners and adapting the **Framework** to meet the needs (INSHPO, 2017, p.7).

The Global OHS capability framework has three features that position it to achieve the required change in roles and functions, the need for which was set out in Section 1.3 of this paper. It:

1. Uses the language of capability to clearly position the OHS roles as Professional and/or Practitioner.
2. Enunciates defined professional roles at these two levels for those with generalist functions and the broad skill base required for these roles.
3. Recognises that while there may be a range of OHS specialist roles in the workplace, there are two clear categories recognisable, but needing further clarification: OHS Professional and OHS Practitioner.

The objectives of the framework are directed to enhancing the professionality of the OHS profession and role clarity for the OHS Professional and OHS Practitioner. The objectives as stated by INSHPO are to:

- Facilitate a shared understanding of the difference in roles of the OHS Professional and the OHS Practitioner.
- Position the OHS Professional as a key advisor, strategist and leader in fully integrating the management of OHS risk into sustainable business practice.
- Position the OHS Practitioner as a skilled implementer of OHS activities and an effective OHS supporter and communicator at the site level (INSHPO, 2017, p. 9).

The inherent differences between the OHS Practitioner and OHS Professional roles as determined by INSHPO are shown in Table 1.

The full text of the framework, as finally mandated by the INSHPO Board, can be downloaded for free from the INSHPO website (https://www.inshpo.org/work). The following sections briefly discuss the core components of the framework and give examples of each section of the framework to illustrate how the different aspects were handled during development.

The Introduction to the framework defines the use of the term 'capability' and provides an overview of the target audiences and how the target groups might use the framework. Section 2 of the framework introduces the two roles of OHS Professional and OHS Practitioner providing an extensive comparison of the two, discussing the scope of practice in the context of discipline specific OHS professionals, such as occupational hygienists, ergonomists and occupational physicians. An important contribution to the contextual perspective is the discussion on the impact of organisational maturity on the OHS role. Sections 3 (Position profiles), 4 (Activities), 5 (Knowledge) and 6 (Skills) form the core of the framework with 7 reviewing the range of hazard types which the OHS Professional and OHS Practitioner may be called upon to manage.

3.1. Position profiles

The position profiles were developed after the other core sections in response to an identified need to clarify the continuum within the two roles prior to considering the activities, knowledge and skills. The position profiles do not address OHS content but describe:

- Key purpose of the role
- Typical lines of reporting
- Professional parameters such as autonomy, complexity and required business and organisational skills
- Ability to apply knowledge and skills
- Recommended level of qualification.

Recognising the gradations within the OHS Professional and Practitioner roles, three profiles are given for each role. The descriptors are derived from the learning outcomes described in the various levels of the Australian and European Qualification Frameworks expressed in an OHS context. Appendix C showing the key purpose section of the profile demonstrates this gradation for both the OHS Professional and OHS Practitioner. It should be noted that the role descriptions are cumulative with the attributes listed for Level 2 building on those for Level 1 and similarly, Level 3 builds on Level 2.

Table 1
Comparison of OHS Professional and OHS Practitioner role (INSHPO, 2017, p.11).

OHS Practitioner	OHS Professional
Implementer/executor of strategy and the framework for OHS critical control management	Designer of OHS management strategy and framework for OHS critical risk control management
Communicates predominantly with middle management, supervisor and shop floor, building relationships as a basis for influence, mentoring and providing technical advice	Influences senior managers, building relationships as a basis for influence, mentoring and providing integrated technical and strategic advice
Oversees and drives monitoring and compliance, acting as local change agent when required	Develops monitoring systems. Involved in organizational review and change management
Supports safe working environment by maintaining administrative processes, conducting training and using state-of-the-art tools, processes and standard practice solutions	Considers wider context of business processes and external regulatory, market and societal influences
Advice/action based on technical knowledge, experience and input by OHS professionals and other technical advisors	Advice/action based on conceptual and technical knowledge mediated by analysis of evidence, experience and critical thought
Focuses on organization's primary processes operating in known contexts within established parameters	Able to extend his or her understanding and control to novel, unknown and complex risks and their control
Accesses, evaluates and uses a broad range of workplace and industry sources of information	Understands how to use, critically evaluate and develop the evidence base
Usually works under direct or indirect supervision or mentorship with substantial responsibility for planning own work	Works autonomously within own initiative and responsibility but values professional collaboration
May work with SMEs on well-known hazards or under OHS Professional supervision in larger organizations	Usually works in large, complex and/or high-hazard organizations or as a consultant to medium-sized organizations
Usually educated through vocational or technical streams	Usually educated through university or higher education sector

The position profiles provide a basis for developing position descriptions and performance appraisals as well as clarifying expectations of those operating in the position. The utility and value of these profiles was demonstrated in the ICMM/INSHPO OHS capability in mining project where position descriptions were mapped to the profiles as part of the analysis to develop a profile of the role and characteristics of people being recruited into OHS roles in mining (INSHPO, 2016, Pryor et al., 2017).

3.2. Activities

The activities component of the framework was the first section developed and generated much discussion among the working party and the INSHPO Board members. It was during this work that country-specific differences emerged in approaches to managing OHS. Such differences included concepts of causation and the focus for control strategies which were further complicated by a range of terminology and varying interpretations of the same words. However, the discussions that occurred in clarifying and resolving these differences led to a shared understanding of the various views and an acceptance that the INSHPO framework would be a guideline which could be modified to suit country-specific circumstances.

The resultant list of activities is presented in the framework at two levels of detail:

- Dimensions – providing the scope of the distinguishing boundaries of the roles
- Domains – describing fields of activity within the dimensions.

The activities are organised in seven dimensions:

1. Systems management approach
2. Organizational culture and its impact on OHS
3. OHS risk management processes
4. Measurement and evaluation of OHS performance
5. Knowledge management
6. Communication, engagement and influence
7. Professional and ethical practice

Each dimension has separate domain descriptors for OHS Professional and Practitioner with the scope of application of the activities of an OHS Professional compared to that of the Practitioner. The OHS Professionals' scope of activity may be across the organization, including site, divisional/regional and corporate and may include local, national or global roles. The OHS Practitioners' role is usually at a site (workplace) level of a small or medium business or a section or plant of a large organization (INSHPO, 2017; p.22).

A third level of detail in the form of explanatory comments for the domain was initially incorporated but later transferred to the online tool to make the core framework less cluttered and easier to read and assimilate.

As an extract from the framework, Appendix D details the dimension of *Organisation culture and its impact on OHS*, with the descriptors for the dimensions and the domains varying for the Practitioner and the Professional.

The activity statements may be used in many contexts including:

- As a mapping tool to confirm key OHS activities are addressed by one or more OHS specialists in the organization
- As a detailed OHS duty statement as part of a position description
- To create a shared understanding of the role by incumbents, line and senior managers and others
- As a basis for performance appraisals
- To identify areas for role expansion and further development of an incumbent.

3.3. Knowledge

A conceptual knowledge framework is a key criterion in defining a profession and essential for innovation, flexibility and openness to new and advanced thinking about OHS. The knowledge section of the framework was developed by listing the required knowledge for each activity domain. This resulted in a complex many-to-many mapping which was subsequently simplified into knowledge categories with illustrative general topics. The resultant knowledge matrix was then mapped to the Australian OHS Body of Knowledge to identify any gaps (INSHPO/SIA, 2017).

A four-level coding system was developed based on the general concept of Bloom's hierarchy of educational objectives (see for example Bloom et al., 1956).

Level	Knowledge
1	**Awareness:** Understands the need for and general principles of application of the knowledge.
2	**Routine application:** Applies the knowledge to routine, well-known situations, with depth in some areas.
3	**Comprehensive application:** Integrates, adapts and applies the knowledge to all relevant areas and situations.
4	**Creative mastery:** Applies the theoretical concepts and applied knowledge critically and creatively to new situations.

This coding was applied to indicate the expected level of application of the knowledge by the Professional and the Practitioner (Table 2) While initially discussed, a beginner-mastery scale was specifically <u>not</u> used as such a scale implied that beginners should always aspire to mastery across the board, whereas the multi-disciplinary nature of OHS means that the OHS Professional (or Practitioner) should be at 'comprehensive application' or 'creative mastery' for some topics while for other topics 'awareness' or 'routine application' may be appropriate. It is assumed that the scope of application of knowledge by the OHS Professional will be across a site, division or organisation and may be in national or global roles, while the Practitioner will apply their knowledge at a site

Table 2
Extract from knowledge matrix for OHS Practitioners and OHS Professions (INSHPO, 2017, p. 32).

Code	Knowledge category	Illustrative generic topics	Knowledge level	
			OHS Practitioner	OHS Professional
13.	Organizational culture	• Organizations as complex sociotechnical systems	1-2	3-4
		• Concepts of national, organizational and safety culture	1-2	4
		• Relationship between employee (manager and workforce) behavior, organizational culture, safety culture and safety climate	1-3	3-4
		• Organizational maturity	2-3	3-4
		• Role of leadership	2-3	4
		• Healthy work	2	3
		• Limitations of the role and use of safety and health incentives, awards and competitions in relation to culture	2-3	3-4

level or section of a larger organisation and concentrate more on the state of the art and received wisdom rather than innovation and the development of knowledge and practice.

3.4. Skills

A key driver underpinning the development of the skills matrix was the need to transform the OHS Professional from a technical compliance manager to a leader with influence. Such a leader would be able to apply professional skills of teamwork, influence, mentoring and leadership within an OHS context of evidence-based ethical practice. Review of position descriptions, performance appraisals and discussion with senior OHS managers revealed a lack of clarity about and variations in interpretation of what communication, leadership and levels of influencing skills look like in practice and how these skills might be recognised. To address this deficiency a set of performance criteria were developed for each skill. These criteria use a Bloom-style taxonomy of increasing complexity (Bloom et al., op cit.) to describe observable behaviours demonstrating each skill. As with the knowledge matrix, a four-level skill matrix indicates the expected level to which the skills will be demonstrated by a Professional or Practitioner. The skill matrix has some subtle differences to that applied to the knowledge.

Level	Skill
1	**Awareness:** Understands the need for and general principles of skill application.
2	**Routine application:** Applies the skill independently to well-known, routine tasks and to nonroutine tasks under supervision.
3	**Skilled application:** Adapts and applies the skill independently and effectively, also to nonroutine tasks.
4	**Creative mastery:** Applies the theoretical concepts and the practiced skill critically and creatively to new situations.

The skill matrix with the accompanying performance criteria provide a guide to the OHS Professional and Practitioner as to what behaviours are expected in demonstrating the skill, they also provide a basis for discussion between managers and supervisors and their OHS personnel and subsequent mentoring and counselling (Table 3).

4. Challenges

All change processes face challenges relating to the background, experiences and preconceptions people bring to the discussions. INSHPO has 13 member organisations ranging across North America, Europe, Russia, Asia, Australia and New Zealand, with each country and region drawing from different legislative structures, educational systems, approaches to OHS as well as language and cultural background. Some significant challenges encountered in developing the framework and their resolution are discussed below.

4.1. Range of OHS legislative and cultural contexts

Across the INSHPO member countries there are a range of legislative paradigms from prescriptive to performance-based with the legislative structure influencing the approach to OHS and the OHS management culture. The legislative paradigm, in some cases together with the ethnic culture, also influences the approach to understanding and investigating accidents which may range from adversarial through to collaborative or consensus approaches. The role of worker consultation in managing OHS is also influenced by legislation and culturally determined, with some countries having a more confrontational and some a more consensual relationship between employers and labour. The framework is phrased as far as possible in generic terms, leaving a national level of interpretation of those terms to be worked out in each jurisdiction. Such action and debate is beyond the scope of this paper, but there are informal indications that several countries have already started, or are intending in the near future, to benchmark their national systems against the INSHPO framework. While the role and knowledge and skill requirements of OHS Practitioners will largely be circumscribed by the culture and legislative context of their own countries, we would expect that OHS Professionals would also require knowledge of how and why those cultural and national differences exist and the skills of working effectively with those differences, particularly in multinational organisations.

One key difference encountered that required extensive discussions and a preparedness by the various parties to understand and accept other perspectives was the difference in approaches to assessment for professional recognition. In North America (USA and Canada), examination is the norm while in many other countries assessment is based on accredited qualifications supported by peer and reflective modalities such as practice reports, interviews and referees.

The difficulty in people understanding the different perspectives, being open to different points of view and managing concerns regarding possible disruption of well-established and accepted methodologies for professional standards and certification cannot be over-estimated. In the development of the Global Framework the group development processes of "forming, storming, norming, performing" (as per Tuckman, 1965) were demonstrated with different people and the organisations they represented progressing through this process at different rates.

Table 3
Extract of skill matrix for OHS Practitioners and OHS Professionals (INSHPO, 2017, p. 40).

	Skill	Performance criteria	Skill level	
			Practitioner	Professional
B.3	**Leadership**			
B3.3	**Personal Leadership**	**Shows self-awareness** by identifying own leadership style and the need for both further development and situational adaptation to enhance leadership capabilities.	2-3	3-4
		Demonstrates up-to-date knowledge on OHS and current issues and an ability to explain complex/technical topics in a way that others can understand.	2-4	3-4
		Creates an imperative for change and a clear vision to bring people along.	1-3	3-4
		Engages people in the process, comprehends and accepts emotions, feelings and others' perspective and is able to build rapport with and empathy for others.	2-3	3-4
		Demonstrates assertiveness where needed in subtle, constructive ways.	2-3	3-4
		Leads by setting an example and by demonstrating confidence, optimism and interest in others, which, in turn, generates confidence in others.	3-4	3-4
		Generates the respect of others.	3-4	3-4
		Builds consensus and constructive problem solving.	2	3-4
		Provides support to people to make them comfortable, bases change on learning and **enables** people to have ownership of the outcome.	2-4	3-4
		Recognizes that change takes time and **perseveres**.	2-4	3-4

4.2. Geographical impact on meeting frequency

While online meeting technology was used by the working group and by the INSHPO executive, the nature of interaction required to make a step-change in the development of the framework occurred only at the annual INSHPO Board meetings where all members were face-to-face. This significantly extended the time line for development of the framework.

4.3. Issues requiring resolution

Throughout the development process, issues arose relating to terminology and, in some cases, deeper conceptual issues such as the definition of OHS specialists to work at one of two different levels, and the framework's decision to position them as generalists alongside deeper, but narrower specialists, such as occupational physicians or occupational hygienists. Resolution of these issues was often made more difficult by regional or country-specific history, terminology or interpretation.

While one of the intentions of the framework is to promote a shared view of the OHS role globally, it is recognised that "differences will exist in terminology and emphasis across different countries depending on history, legal and regulatory frameworks and industry mix" (INSHPO, 2017, p. 8). A discussion on identification and resolution of five of these issues encountered during the discussions and development is given below.

4.3.1. Description of the discipline area

Should the area that the OHS Professionals and Practitioners work in be called simply 'safety', 'health and safety (H&S)', or 'safety and health (S&H)'. Should it refer to 'occupational' or 'work', or find a broader term explicitly covering also health care, transport, process safety, environmental effects and even more? In other words, what should be its boundaries.

Legislation and common usage of terminology and abbreviation varies across countries and regions. For the purpose of the framework document, the working group and the INSHPO Board agreed to align the terminology with that agreed through the International Organization for Standardization (ISO) process and so 'occupational health and safety (OHS)' is the terminology consistently applied in the framework (IOS, 2018). This decision excluded for example the domain of patient safety, which is an important area of employment of safety professionals in some countries. Some country's professional OHS bodies recognise this, such as the Netherlands (Swuste et al., 2019) and have established specialist groups covering patient safety and road safety within their structure, although they have yet to develop specialised certification in these domains.

4.3.2. 'Generalist' role

It was recognised that the OHS role in most countries is a broad-based, generalist one, as distinct from the narrower, more deeply specialised roles such as occupational hygienist, ergonomist, risk analyst or occupational physician. These other roles perform support functions to the generalists on request, relating to the more complex problems in their area of expertise. The model of the general medical practitioner, or family doctor, was considered a useful analogy, acting as a first point of contact referring more complex cases to OHS specialists. One country (Australia) has addressed this issue by incorporating the term 'generalist' in their professional certification scheme. The outcome of discussions was that the medical analogy should be mentioned in the framework document but the titles would not include 'generalist' as it was not common usage at the time.

4.3.3. Two roles: professional and practitioner

The OHS role originated in many organizations as a technical compliance officer, educated via a vocational track and mainly engaged at workplace levels in the organisation, providing technical advice to supervisors and line managers, focused on compliance, personal protective equipment and a reactive response to prevention in the workplace. However, as OHS management has matured over the last century, it has taken two paths, one being vocationally-trained, preserving the role given above and its level, the other a more managerial/professional role that influences, engages and coaches all levels of the organisation, including senior management. While, initially the intention was to focus on the 'professional' role, as the project progressed it became apparent that to achieve the objective of enhancing professional recognition it was important to clearly differentiate the two roles. The working party first developed two parallel frameworks, one for the OHS Professional and one for the OHS Practitioner. On the advice of the reviewers, the two roles were compared and presented in a single document. As far as the authors have been able to discover, this is the first attempt to set out the differentiation of tasks at the two levels in a comprehensive way. In this respect, the INSHPO framework builds on the work of the EUSafe project (Harvey et al., 2012).

4.3.4. Role titles

Position titles for OHS Professional and OHS Practitioner used within organisations vary across countries and also organisations. Titles for the role of OHS Professional may include: OHS Vice President; OHS Director; OHS Manager; OHS Practitioner; while titles for the vocationally trained role may include OHS Practitioner, OHS Technician, OHS Officer; OHS Coordinator. This leads to a lack of clarity and potential confusion which detracts from the professionalisation of OHS.

As one of the stated objectives of the framework is to promote the recognition of OHS as a profession, it was decided to avoid titles such as 'OHS or Safety Manager' that imply that the OHS Professional has taken over, rather than is just supporting the role of line management and might have different interpretations across countries and organisations. The framework therefore refers to the two roles as 'OHS Practitioner' (the implementation role) and 'OHS Professional' (the strategic role). Although 'practitioner' is used in some countries to refer to the professional role it was considered that such a title did not support the vision of OHS as a profession. Also, the OHS Practitioner role as conceived in the framework document is broader than a 'technician'. This broader role is demonstrated in the practitioner activities related to supporting the implementation of a systems approach and supporting managers and supervisors in fostering a positive safety culture.

4.3.5. Capability v competence

When work began on the Global Framework in 2013, it was originally referred to by INSHPO as a 'Competency Framework'. However, during its development the language used by educational and professional bodies moved from 'competency' to 'capability'. Professions, industries and organisations were found to be moving to develop capability rather than competency frameworks. [See for example for education leaders Lewis (2009) and for offshore oil and gas industry Griffin et al., (2014).] While to some people it may only be a matter of words, to others the differentiation between competence and capability is important conceptually.

In some countries 'competency' is strongly associated with the vocational training sector and is seen as leading to a somewhat narrow educational outcome. In this context competency is defined as:

> The consistent application of knowledge and skills to the standard of performance required in the workplace. It embodies the ability to transfer and apply knowledge and skills to new situations and environments (Naidu et al., 2013, p. 36).

In comparison capability has been defined as:

> The <u>applied theoretical knowledge</u> that underpins practice in occupations and professions and also the industry specific knowledge and skills <u>that transcend</u> particular workplaces and the tacit

knowledge of the workplace ([Wheelahan and Moodie, 2011, p. 22](#)) (emphasis added).

The difference between competency and capability is further highlighted in the introduction to the capability framework for education leaders which describes *competency* as being about delivering the present based on the past, while *capability* is about imagining the future and bringing it about (Stephenson in [Lewis, 2009](#)). Competency is a necessary part of capability ([Hase and Davis, 1999](#); Stephenson in [Lewis, 2009](#)) but capability goes much further in that it is about confidence and adaptability; and the development and effective use of the knowledge and skills in complex and changing circumstances including those that may not have been previously experienced.

This view of capability takes on greater importance when considering the skills and knowledge required by effective OHS Professionals and Practitioners in the workplace, particularly the so called 'soft skills' such as leadership, mentoring, communication and professional presentation skills, required especially by the OHS Professionals ([Reiman and Pietkainen, 2014; Vassie and White, 2014; Wybo and Wassenhove, 2014](#)).

While competency is essential for OHS practice, the concept of capability provides a further dimension that expands our understanding of the required knowledge and skills. It was determined that by adopting the terminology of a 'capability framework' and promoting OHS professionals as both competent and capable the framework had the potential to increase the profile and acceptance of the 'professionality' of the OHS role.

4.4. Transformational nature of project

As noted in the [Section 1.2](#), the initial project objective was to develop an international standard based on current country and regional requirements. As the project progressed and the need for change in both the role of the OHS Professional and the perception of the OHS role and profession became evident, the objective evolved into a transformational one of reconceptualising the role.

Achieving transformational change required people to let go of 'what we do now' to envisage a more modern role. This was complex. Not only did it require a change in thinking by individuals but those individuals were also representatives of organisations who had constituencies who also needed to accept the change in thinking. Some of the people involved were able to move forward more easily than others who were constrained by country specific legislation, culture or organisational precepts. It will require time to achieve a change in thinking by the broader OHS professional comunity and by industry. In achieving transformational change, it is sometimes important that someone takes the first leap and then brings others along on the journey rather than aiming for consensus at every stage. This certainly happened during the development of the framework and required extented discussion which added to the richness of the outcome. However, as part of the sometimes pragmatic approach required to bring such disparate groups together, it is recognised that in reconceptualising the role the framework some compromises were made to achieve consensus.

5. Implementation of the framework by the OHS profession to date

The framework has six target audiences: OHS professional associations and related certification bodies; OHS Professionals and Practitioners; OHS educators; employers and recruiters; OHS regulators; and the community. This section gives a few examples of how some of those audiences have already engaged with the framework.

OHS professional associations and related certification bodies are the group most directly addressed by the framework and a number of them, especially the INSHPO members, have used the framework for benchmarking. For example, the American Society of Safety Professionals (ASSP)[3] has developed their *Learning Ecosystem* which includes core curricula and personal learning plans around the framework. The Safety Institute of Australia has structured their *OHS Capability Agenda* as a multi-layered pyramid with the framework being the third layer "providing clarity of role, knowledge and skill requirements" as well as informing the other four levels of: foundation knowledge (OHS Body of Knowledge); education assurance (accreditation of OHS professional education); capability assurance (certification of OHS Professionals and Practitioners; and continuing professional development ([SIA, 2017](#)).

The framework has informed the development and review of standards for practice and certification/recognition assessment for the Singapore Institution of Safety Officers (SISO), Board of Canadian Registered Safety Professionals (BCRSP), US Board of Certified Safety Professionals (BCSP), the Safety Institute of Australia (SIA) and the UK Institution of Occupational Safety and Health (IOSH).

One certification body (BCRSP) has introduced a new category of 'technician' based on the framework's OHS Practitioner level to accompany the professional certification category.

While the implementation of the framework is still in its early phases, there are indications that OHS Professionals and Practitioners are considering it when planning their professional development. At the moment, such activity is mainly driven by the professional bodies. However, it is anticipated that use of the framework by individual OHS Professionals and Practitioners will increase when the INSHPO online self-assessment tool is released.

The framework has informed the development and delivery of OHS professional education through both national schemes for accreditation of OHS education (e.g Australia) and by direct decision-making by universities. Twelve educational institutions[4] have formally stated their commitment to the framework by signing the Singapore Accord, whilst other institutions are progressively referring to the framework as they undertake routine reviews of their programs.

While not formally reported, anecdotal information indicates that a number of large and multi-national companies have used the framework to inform the development of OHS roles in organisational restructures and to assess personnel to fill new roles. Other anecdotal information is that organisations are using the framework to direct development programs for OHS Professionals and Practitioners. INSHPO is developing a position descriptor builder as an HR tool which will enhance such use of the framework by organisations.

In the later stages of development of the framework it was tested in collaboration with the International Council of Mining and Metals (ICMM) to examine OHS capability in mining and develop a capability framework to suit the mining industry ([INSHPO, 2016; Pryor et al., 2017](#)). This project also contributed to the refinement of the INSHPO framework.

6. Where to from here?

One of the objectives in developing the framework was to promote OHS as a profession. The work described here and the framework which it developed give clarity to the vision for OHS as a profession. The framework provides a basis for OHS professional bodies and OHS educators to plan the development of the profession in their country taking account of the current context and status of the profession in that country. The framework fulfils or contributes to two of three *individual* criteria listed in the Introduction to this special issue:

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[3] During the course of the project the American Society of Safety Engineers (ASSE) was re-named the American Society of Safety Professionals (ASSP).

[4] 2 Australian, 3 Canadian, 1 New Zealand, 3 Singaporean, 1 United Kingdom, 2 USA. For individual organisations see http://singaporeaccord.org/web/the-singapore-accord/accord-signatories.

- A defined role and career path (Section 3 of Framework, Position Profiles)
- A defined knowledge and skill base (Sections 4, Knowledge and 5, Skills)
- Defined boundaries (Section 2, Clarifying OHS roles)
- One or more levels of expertise linked to different levels of competence (Section 2, Clarifying OHS roles).

The other criteria for a profession identified in the Introduction to this special edition relate to collective and external factors and are beyond the direct influence of the framework.

Looking to a different definition of a profession, that of Professions Australia, which focuses on the *individual* requirements, assists in identifying some gaps and so potential future developments for the framework.

"A profession is a disciplined group of individuals who adhere to ethical standards and who hold themselves out as, and are accepted by the public as possessing special knowledge and <u>skills</u> in a widely recognised body of learning derived from research, education and training at a high level and who are prepared to apply this knowledge and exercise these skills in the interest of others. …". (emphasis added) (Professions Australia, 1997).

While the framework provides a matrix of knowledge categories and illustrative knowledge topics, this matrix does not constitute a 'body of learning' as required in the Professions Australia definition. The INSHPO web site provides a link to the OHS Body of Knowledge (OHS BoK) (see Pryor, 2019) and the OHS Body of Knowledge has been mapped to the framework (INSHPO/SIA, 2017). Future work by INSHPO might include further engagement with the OHS Body of Knowledge to internationalise it and so define at an international level the "special knowledge" "in a widely recognized body of learning derived from research, education and training at a high level" that is part of the OHS profession.

Being five years in development, organisations involved in the development were able to incorporate aspects of the framework into their own learning and professional capability activities even prior to the formal launch and the Singapore Accord. As reviewed in the previous section, other organisations are taking up the framework to inform their OHS professional activities. However, Section 5 also shows that more work is required in promoting awareness and use of the framework.

Like all documents there is a need for validation of the framework. Do the descriptions of the roles and tasks of the two levels of OHS specialist match the reality of practice, at least in the most advanced organisations? Are the knowledge and skills needed for making a success of those roles suitably and comprehensively described in the framework? Are the descriptions of the boundaries of the profession (the domains in which it can competently operate) well-enough described; not too broad and not too narrow?

The framework intentionally does not specifically address learning objectives as instructional design and the outcomes of learning programs are the bailiwick of the educational institutions. Rather, the framework provides a description of the role for which the graduates are being educated noting that "It is not expected that an OHS Professional or OHS Practitioner would gain the knowledge through education alone." (INSHPO, 2017; p.28.) As a number of universities across several countries have signed onto the Singapore Accord and others are also using the framework to inform their curriculum development there is potential for INSHPO to support collaborative engagement by OHS educators.

The development period and the challenges discussed in Section 4 meant that the framework was not as forward looking as it might have been. Variations in OHS maturity across countries and approaches to managing occupational health, psychosocial hazards and the impact of the organisation of work meant that as at 2017, the framework does not give a priority to these areas. Nor are some of the emerging theories for managing OHS (and the underpinning knowledge to critically evaluate such theories) given due consideration (Hollnagel et al., 2006; Hollnagel, 2014). A need for cross-cultural awareness (across national, ethnic, organizational, generational cultures) by OHS Professionals is receiving increasing attention in the profession and is an area for future consideration.

The work by INSHPO in developing an online tool for building position descriptions and a self-assessment tool for OHS Professionals and Practitioners to support professional development will promote use of the framework within organisations and by OHS Professionals and Practitioners.

It is anticipated that engagement by OHS professional bodies with their members and with educational institutions in their jurisdiction will create a richer engagement by these groups with the framework. There is also a need for broader awareness and engagement with the framework by businesses and OHS regulators. INSHPO should consider strategies for such engagement. For example, there would be a strategic benefit in INSHPO forming a relationship with the International Association of Labour Inspection (IALI) which is the global professional association for OHS regulators. Similarly, engagement with global bodies for other health and safety disciplines such as occupational health and ergonomics could enhance the impact of the framework and facilitate hitherto under-developed opportunities for collaboration. For example, the International Occupational Medicine Society Collaborative (IOMSC) is seeking to create an educational collaborative across national and international associations. A collaboration between the INSHPO and IOMSC would create inter-disciplinary engagement not previously seen at a global level.

It is recognised that the framework provides generic guidance which may need to be adapted and developed in more detail by each country to account for differences in legal and regulatory frameworks. Australia has identified changes to more appropriately reflect the legal and cultural approaches to workplace consultation and representation operating in that country. It may be that other countries similarly identify modifications to ensure the framework reflects practices in that country while still providing the transformational vision and objectives of the framework.

The framework should not be considered an end-point or a static document but a milestone in the ongoing professionalization of OHS. The extended timeline for development reflects the evolutionary nature of the framework and the time required for the various parties to explore and be reflective about their approach and that of other groups. This evolution and reflection should not cease with the publication of the framework and the Singapore Accord.

Acknowledgements

Appendix A. Documents analysed in comparing requirements for safety professionals across INSHPO member countries

Documents analysed in Hale (2013), Comparing requirements for safety professionals in INSHPO countries included:
Australia

AOHSEAB (Australian OHS Education Accreditation Board). (2018). *OHS Professional Capabilities*. Tullamarine, VIC: Safety Institute of Australia. Retrieved from https://www.ohseducationaccreditation.org.au/wp-content/uploads/2013/06/OHS-Professional-CapabilityStatements-8-10-121.pdf.

SIA (Safety Institute of Australia). (2018a) *The Core Body of Knowledge for Generalist OHS Professionals: Learning outcomes*. Tullamarine, VIC. Safety Institute of Australia. Retrieved from https://www.ohsbok.org.au/resources/learning-outcomes/.

Britain

Pro Skills UK (2012). OHS National Occupational Standards. Retrieved from www.proskills.co.uk/hs/standards-qualifications

Canada

BCRSP (Board of Canadian Registered Safety professionals). (2010). Blueprint for the Canadian Registered Safety Professional Examination (CRSPEX) BCRSP. June 2010.

European Union

Harvey, H., Johnson, D., Hale, A.R., Granger, S. (2012). Defining the standards of practice for Safety Managers and Technicians. Report of Work Package 4 of the EUSafe (European Qualification for Occupational Safety of Innovation) Leonardo Da Vinci project, number 510362-2010-LLP-IT-LEONARDO-LMP. www.eusafe.org. 2012 May.
   Appendix 1 – Technician and Manager Performance Standards
   Appendix 2 – Occupational Standards Mapped by function
   Appendix 3 – Countries where performance competence is specified by regulation mapped against the occupational standards.

Netherlands

SKO-Hobeon. (2014). Competence profile for the higher safety professional. Foundation for the Management of Expert Certification. The Hague. Netherlands.

Russia

RFMHSD (Russian Federation Ministry of Health & Social Development) (2012). 'On approval of the one qualification handbook for managers, professionals and employees giving the qualification characteristics of professionals engaged in the field of occupational safety and health' (N24548) dated 22.06.2012

United States

ANSI (American National Standards Institute). (2003). Criteria for establishing the scope and functions of the safety professional position. American Society of Safety Engineers.

Appendix B. Timeline for development of the framework

Year	Event	City/country	Participants	Discussion/Achievement
2013	INSHPO commissioning of additional work, launching the project, and providing an ongoing budget		INSHPO Board members, Working Group, Hale (2013), Turner (2014)	Decision to develop new framework with reconceptualised role for OHS professionals.
2013	Working group meetings	Chicago and online	Working group	Development of initial draft list of activities informed by country documents previously analysed, together with working party knowledge of current practice of the profession across countries and a vison for the profession.
2013	INSHPO Board meeting at Canadian Society of Safety Engineers (CSSE) conference	Montreal, Canada	Workshop with INSHPO Board members and Board members of CSSE	Draft list of activities/roles workshopped for inclusion/exclusion/gaps and interpretation (Hale et al., 2013)
2013	CSSE Conference	Montreal, Canada	Canadian OHS professionals, practitioners & educators	Presentation by members of INSHPO Board addressing the need for a global framework, current status of professional recognition in various countries and initial development on roles and activities.
2014	INSHPO Board meeting	Frankfurt, Germany	INSHPO Board members	Presentation by Hale (2014) and Hudson and workshop on knowledge and skills requirements.
2014	XX World Congress	Frankfurt, Germany	OHS professionals, regulators & policy makers	Poster presentation by INSHPO Secretariat (Clements et al., 2014) with interactive workshop on framework, activities, knowledge and skills.
2014	WOS.net Conference	Glasgow, Scotland	OHS researchers & educators	Presentations by Hale (2014) supported by other members of the working party.
2014	International Council on Mining and Metals (ICMM) OHS Forum	London, England	OHS professionals at executive levels from international mining companies	Presentation by Pryor on the INSHPO framework with discussion on potential application in mining.
2015	Fluoro Conference	Perth, Australia	OHS professionals and practitioners	Launch of OHS Professional framework (Pryor et al., 2015)
2015	INSHPO meeting	Perth, Australia	INSHPO Board members	

				Framework for two separate levels of OHS specialists discussed and compared: professional and practitioner. Decision to merge into one framework to clarify differences between the levels
2015–16	ICMM project	International	Member companies of ICMM	Review of OHS capability in mining and development of a capability framework based on INSHPO Framework. Project resulted in refinement of 4 core sections of the Framework.
2016	ICMM	London, England	OHS professionals at executive levels from international mining companies	Presentation by Pryor and Hale on outcomes of OHS capability in mining project with feedback from senior OHS personnel in mining (INSHPO, 2016) Feedback informed refinements of Framework and provided initial concept of online tools.
2016	INSHPO Board meeting	Vancouver, Canada	INSHPO Board members	Workshop to refine the knowledge and skill components of the Framework including levels and preliminary scoping of online tools for building OHS position descriptions and a self-assessment tool for OHS professional and practitioners.
2016	CSSE Conference	Vancouver, Canada	OHS professionals and practitioners	Presentation by INSHPO Board members on framework and how it is being used by INSHPO member bodies.
2017	INSHPO Board	International	INSHPO Board members	Formal approval of the Global OHS Capability Framework.
2017	INSHPO Board meeting	Singapore	INSHPO Board members	Update on how INSHPO member bodies are using the framework. Development work on online tools.
2017	Signing of the Singapore Accord	Singapore	53 organisations	Promotion of the framework through commitment by signatories to Accord principles (INSHPO, 2017)[a]
2017	XXI World Congress	Singapore	OHS professionals, regulators & policy makers	Presentation on the framework and the development process by INSHPO Board members and Pryor (Seet et al., 2017) Announcements of the launch of the framework by INSHPO member bodies in their respective countries.

[a] See http://singaporeaccord.org/web/ for list of signatories.

Appendix C. Example comparison across position profiles

C.1. OHS Professional profiles – key purpose of role (INSHPO, 2017, p. 19–21)

	Professional Level 1	Professional Level 2	Professional Level 3
Position details			
Key purpose of role	To support development and maintenance of a safe and healthy work environment by: • ensuring identification of key risks and critical risk controls; • analyzing OHS training needs; • designing, delivering and evaluating OHS training; and • applying the OHS evidence base to develop, implement and monitor OHS strategy and programs, including for OHS critical control management. To ensure appropriate maintenance of OHS records.	To apply leadership, specialist skills and knowledge of the OHS evidence base to provide strategic direction and support to managers to: • operationalize and implement corporate OHS strategy; and • evaluate the outcomes with an emphasis on critical control management.	To set corporate direction and lead development of strategy for OHS by applying high-level strategic and/or specialist skills. To work with Boards, executives, senior managers and others to lead OHS strategy and to initiate, develop and maintain activities for a safe and healthy work environment. To ensure an emphasis on critical risk and identification and management of critical controls. To develop and implement a strategy for communicating the strategy throughout the business. To represent the company to external agencies.

C.2. OHS Practitioner profiles – key purpose of role (INSHPO, 2017, p. 16–18)

	Practitioner Level 1	Practitioner Level 2	Practitioner Level 3
Key purpose of role	To support a safe work environment by maintaining OHS administrative processes, conducting basic OHS training and effectively using a range of OHS tools and processes to implement OHS programs and drive compliance. To monitor the implementation of critical controls.	To contribute to maintenance of a safe and healthy work environment by implementing and monitoring OHS systems and processes in their local area. This includes managing OHS administrative processes, conducting training and effectively using a range of OHS tools and processes to implement OHS programs and drive compliance. To initiate, promote and implement site-level activities to improve OHS. To contribute to the implementation and monitoring of critical controls.	To contribute to development and maintenance of a safe and healthy work environment by implementing and monitoring OHS activities to continuously improve OHS. This includes managing OHS administrative processes, identifying training needs, designing and conducting training and effectively using a range of OHS tools and processes to implement OHS programs and drive compliance. To design, develop and implement innovative site-level activities to improve OHS. To drive site-level identification, implementation and monitoring of critical controls. May manage a small site OHS team.

Appendix D. Extract from activity matrix for OHS Practitioners and OHS Professionals (INSHPO, 2017, p. 23)

	OHS Practitioner			OHS Professional	
	Dimension	Domain		Dimension	Domain
2 Organizational culture and its impact on OHS	Support line managers, supervisors and workers on methods to foster and monitor a positive OHS culture.	2.1	Facilitate, monitor and support management practices and projects aimed at achieving an organizational culture focused on OHS. Recognize and support the increase in the maturity of the organization's culture and its effect on how to function effectively as an OHS Practitioner.	Lead and support key influencers, including managers, on strategies to foster an organizational culture that prioritizes OHS.	Advise managers on appropriate management practices to achieve an organizational culture that is focused on OHS. Recognize the maturity of the organization's culture and work with managers as a change agent to increase organizational OHS maturity.
		2.2	Support implementation of change processes to improve OHS, being aware of the cross-functional impacts of change.		Facilitate the identification and management of OHS implications of organizational change and influence the change process to minimize adverse effects and maximize positive effects of the change.
		2.3	Engage with supervisors and middle managers to develop responsibility and leadership in OHS.		Engage with managers at all levels in the organization to develop their responsibility and leadership in OHS.
		2.4			Engage with stakeholders and others to promote innovation in managing OHS.

Appendix E. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ssci.2019.04.033.

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