RSiS S. RAJARATNAM SCHOOL OF INTERNATIONAL STUDIES
Nanyang Technological University, Singapore

NTS INSIGHT

NTS Insight, no. IN20-04, June 2020

This insight is part of the centre's COVID-19 series, looking at current developments in the global pandemic and its future implications for the social, political and economic spheres in the region.

Building a Culture of Prevention for Occupational Safety and Health in the Face of a Pandemic: Lessons from the Nuclear Safety Culture

By **Julius Cesar Trajano**

As Southeast Asian countries are gradually reopening their economies in the face of a pandemic, there is a need to ensure safety and health at the workplace. While there is the medical approach to prevention, containment and mitigation of pandemics, there is also the non-medical approach, which encompasses a number of safety measures, practices, and behaviours intended to minimise contagion risk at workplaces. A culture of prevention at the workplace needs to be institutionalised. This NTS Insight argues that adopting key principles and best practices in building a strong nuclear safety culture may help prevent the further spread of COVID-19 and other infectious diseases at workplaces. It examines how best practices and policies in promoting a nuclear safety culture can be applied in integrating a culture of prevention with occupational health and safety management in Southeast Asia, so that workplaces can be kept safe amidst a pandemic.

Photo credit: Flickr/ILO Asia-Pacific

Contents

Recommended citation: Julius Cesar Trajano, 'Building a Culture of Prevention for Occupational Safety and Health in the Face of a Pandemic: Lessons from the Nuclear Safety Culture', NTS Insight, No. IN 20-04 (Singapore: RSIS Centre for Non-Traditional Security Studies (NTS Centre), Nanyang Technological University Singapore 2020).

Introduction

As some countries around the world, including Southeast Asian countries, have been steadily easing lockdown restrictions and reopening their economies, the World Health Organization (WHO) asserted that the dreaded COVID-19 may never be eliminated completely. Hence, populations around the world would need to adapt and alter their lifestyles.[1] Ensuring that workplaces are safe and healthy is crucial in order to contain virus transmission, thereby protecting the health of workers and the larger population. In the face of the COVID-19 pandemic, effective occupational preventive safety measures can contribute significantly to business continuity and employment, as they can prevent outbreaks at workplaces, which could lead to additional economic and social disruption. Health and safety have become more paramount than before. A culture of prevention at the workplace needs to be institutionalised.

While infections are continuing to rise in many countries, some are making efforts to sustain falling number of infections and gradually reactivating their economies. Governments, employers and workers as well as their respective organisations have a key role to play in reinforcing the progress made in stemming infection rates by faithfully observing enhanced safety measures.[2] The COVID-19 pandemic has shown that robust safety mindsets need to be adopted by governments, companies, organisations, and even individuals in order to mitigate the spread of COVID-19 and prevent the emergence of future pandemics. In this regard, advancing high levels of safety and health at work is the responsibility of society as a whole. Everyone must contribute to achieving this goal mainly through building and maintaining a national preventative safety and health culture.

This NTS Insight will attempt to answer the questions: (i) How do we build a culture of prevention in Southeast Asia in the context of containing COVID-19 at workplaces? and (ii) given that nuclear safety culture is comprised of a range of actors, institutions, attitudes, habits and practices that aim to ensure safety of nuclear power plants and facilities with radioactive materials, how can these nuclear safety culture elements be applied in building a culture of prevention to keep workplaces safe from COVID-19 and other future pandemics? Globally, the civilian nuclear sector has comprehensively promoted a strong nuclear safety culture, integrating lessons learnt from past nuclear incidents. The reforms of the nuclear industry to institutionalise a bedrock nuclear safety culture have resulted in the very positive benefit of an overarching safe environment and avoidance of disasters[3] since the Fukushima nuclear disaster that hit Japan in 2011.[4]

[1] "Coronavirus may never go away, "World Health Organization warns," *BBC News*, 14 May 2020, https://www.bbc.com/news/world-52643682 (accessed 14 May 2020)

[2] International Labour Organization, "A safe and healthy return to work during the COVID-19 pandemic," *Policy Brief*, Geneva: ILO, 2020.

[3] Lance Wright, "Managing Crisis and Disaster," Chap 9 in *People, Risk and Society*, Washington DC: Palgrave Macmillan, 2017.

[4] It was the worst nuclear disaster in recent history. The Fukushima Daiichi nuclear plant, a part of the network of the Tokyo Electric Power Company (TEPCO), suffered nuclear meltdown following an earthquake and the resulting tsunami that flooded the plant.

This paper argues that adopting key principles and best practices in building a strong safety culture may help prevent the further spread of COVID-19 and other infectious diseases at workplaces. Furthermore, it can reduce the risk of a catastrophic event such as a pandemic, the public health version of Chernobyl and Fukushima accidents. While there is the medical approach to the prevention, containment and mitigation of pandemics, there is also the non-medical aspect of prevention, which encompasses a number of safety measures, practices, and behaviours intended to minimise contagion risk at workplaces. This paper explores how safety culture can deepen the culture of prevention at workplaces in ASEAN. It examines how best practices and policies in promoting a nuclear safety culture can be applied in integrating a culture of prevention with occupational health and safety management in Southeast Asia. These best practices and policies are discussed in three areas: (i) a management system promoting a sustainable safety culture; (ii) a comprehensive state policy framework; and (iii) proactive and competent regulatory bodies.

Conceptualising Safety Culture and Culture of Prevention

Relevance of Prevention Culture at Workplaces

The International Labour Organization (ILO) and WHO said that COVID-19 and other diseases, if contracted through occupational exposure, could be considered as occupational diseases.[5] While several elements of culture of prevention embedded in occupational health and safety managements systems have already existed long before COVID-19, such systems need to be updated. Enhanced preventative measures and new mindsets introduced during COVID-19 pandemic likewise need to be integrated. Related lessons from outbreaks such as the severe acute respiratory syndrome (SARS), influenza A(H1N1), and the Ebola virus have highlighted the importance of focusing on workplaces not only to protect vulnerable populations, but also to understand mechanisms of virus contagion. Hence, companies and organisations can implement successful occupational safety and health prevention measures.

The ILO and WHO have strongly recommended a number of heightened preventative safety and health measures to minimise the spread of COVID-19 at workplaces. Such preventative measures can definitely comprise a culture of prevention aimed at mitigating the risk of COVID-19 contagion. These preventative components, which might not be strictly observed at workplaces prior to COVID-19, include physical/safe distancing; personal and respiratory hygiene; regular environmental cleaning and disinfection; risk communication, training, and education to increase awareness of COVID-19 among workers and promote safe individual practices at the workplace; overseas travel advisories; screening of symptoms; management of staff with COVID-19 or their contacts; and more importantly having a comprehensive emergency preparedness plan in the workplace crafted to address health crises and pandemics.[6]

The ASEAN Culture of Prevention

In 2017, ASEAN leaders issued the *ASEAN Declaration on Culture of Prevention for a Peaceful, Inclusive, Resilient, Healthy and Harmonious Society*. It encapsulates six key thrusts, namely, promoting a culture of peace and intercultural understanding; promoting a culture of respect for all; promoting a culture of good governance at all levels; promoting a culture of resilience and care for the environment; promoting a culture of healthy lifestyle; and promoting a culture

[5] World Health Organization, *Considerations for public health and social measures in the workplace in the context of COVID-19: Annex to considerations in adjusting public health and social measures in the context of COVID-19*, Geneva: WHO, 10 May 2020, p. 4; International Labour Organization, *ILO Standards and COVID-19 (coronavirus)*, Geneva: ILO, 29 May 2020, p. 17.
[6] WHO, *Considerations for public health*; ILO, *ILO Standards and COVID-19*.

supporting the values of moderation.[7] The promotion of a culture of healthy lifestyle, one of the six thrusts, is indeed relevant in strengthening disease surveillance and prevention in the region. Guided by the *ASEAN Declaration on Culture of Prevention* (CoP), ASEAN engages communities to build a culture of healthy lifestyle, in particular the advancement of occupational safety and health as an integral part of a country's development in which every worker has the right to a safe and healthy working environment. The *ASEAN Occupational Safety and Health Network* (ASEAN-OSHNET), for instance, has been consolidating regional efforts towards enhanced occupational safety and health standards and strengthened labour inspection across ASEAN member-states.[8]

Comparing nuclear safety culture at nuclear facilities and culture of prevention at workplaces

Although a nuclear safety culture has been promoted to prevent accidents at nuclear facilities, its key practices, as recommended by various safety culture guidelines from the International Atomic Energy Agency (IAEA), can be applied too in developing a culture of prevention at workplaces against the spread of infectious diseases. However, there is currently no comprehensive handbook or guideline for developing a culture of prevention. Yangho Kim, Jungsun Park and Mijin Park made a short but clear comparison, indicating interrelatedness of a safety culture and a culture of prevention.[9] According to them, the concept of a prevention culture is implicitly based on the concept of a safety culture. Both employ a cultural approach. A safety culture targets to reduce work-related risks, whereas a prevention culture aims to reduce both work-related and nonwork-related risks. A safety culture addresses mainly the workplace level, while a prevention culture covers the societal or national level as well. The goal of a safety culture is mainly to avoid industrial accidents and work-related diseases, while a prevention culture aims to prevent non-communicable diseases, industrial accidents, and work-related diseases, including occupational diseases. In a safety culture, the emphasis is on the protection of health, whereas a prevention culture accentuates both the protection and promotion of health. In a safety culture, the covered population consists mainly of employees in high-risk industries, such as the nuclear and petrochemical industries, whereas a prevention culture includes all workers, particularly those who are self-employed and precarious workers at all workplaces.

A culture of safety at work can be considered as a means of prevention. Instilling this mindset to the staff and management can help minimise unsafe practices and potential health and safety hazards. As indicated in various literature, a safety culture is the set of values, habits and customs in an organisation that contributes to the prevention of accidents and diseases of occupational origin. The ILO also emphasised that a crucial component of occupational safety and health management is building a culture of prevention within the enterprise.[10] Furthermore, the introduction of a positive safety culture can achieve further reductions in occupational injuries and diseases.[11] According to the ILO, *"a national preventative safety and health culture is one in which the right to a safe and healthy working environment is respected at all levels, where governments, employers and workers actively participate in securing a safe and healthy working environment through a system of defined rights, responsibilities and duties, and where the principle of prevention is accorded the highest priority*."[12]

[7] "ASEAN prepares action plan on Culture of Prevention," *ASEAN Secretariat News*, 13 May 2019, https://asean.org/asean-prepares-action-plan-culture-prevention/?fbclid=IwAR2Q2tyqby9FMKd_OjVPz5Q1RN-X-PAGmzvdzbbWqJYYfUjiVeGO7uGcSVs (accessed on 1 June 2020).
[8] List of ASEAN-OSHNET Initiatives to Implement the ASEAN Labour Ministers' Statement on Improving Occupational Safety and Health for Sustainable Economic Growth, 2017, https://asean.org/storage/2012/05/List-of-ASEAN-OSHNET-Initiatives-to-Implement-the-ALM-Statement-on-Impro.._.pdf (accessed on 1 June 2020).
[9] Yangho Kim, Jungsun Park and Mijin Park, "Creating a Culture of Prevention in Occupational Safety and Health Practice," *Safety and Health at Work*, Vol. 7, No. 2, 2016, pages 89-96.
[10] ILO, *Information on decent work and a health and safety culture*, Geneva: ILO, 2009.
[11] Yangho Kim, Jungsun Park and Mijin Park, "Creating a Culture of Prevention."
[12] *ILO, Building a Preventative Safety and Health Culture. Geneva: ILO, 2013.*

Hence, to promote a prevention culture, interventions are needed at both the workplace and national levels. At the national level, there must be a national agenda promoting occupational health and safety through a policy framework and enforced by regulatory agencies. At the workplace level, it is not just about technological interventions but also strong regulation compliance, and more importantly, a safety and health management system.[13] An occupational safety and health management system would not work, however, without a positive safety culture in the workplace.[14] Many organisations, such as high-risk industries including the nuclear sector (e.g., Fukushima NPP), that have introduced new occupational health and safety management strategies have failed to show improved effectiveness because these strategies did not incorporate a safety culture.[15]

Prevention is more important than ever. Public health has dramatically improved largely due to prevention strategies such as vaccination, control of infectious diseases, clinical and lifestyle measures to reduce heart disease, and tobacco control, among others. However, current challenges, with new infectious disease threats and antibiotic resistance, require an even greater turn toward a culture of prevention. There is no medical argument against prevention as the best approach to significantly cut a country's medical expenditures and protect its people.[16]

What is Nuclear Safety Culture?

The term "safety culture" was coined in the aftermath of the Chernobyl nuclear disaster in 1986, when the IAEA introduced the term in its Chernobyl Accident Summary Report to describe how the mindsets and behaviours of people in the organisation tasked for safety in the Chernobyl plant contributed to the accident[17]. The underlying cause was a group of organisational and management factors which they called as safety culture.[18] Safety culture has been defined by the IAEA as *"that assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance"*. [19] This was the first definition of safety culture and one of the most influential in the field.

Meanwhile, one important lesson from the 2011 Fukushima nuclear disaster is the need to have broader perspectives on seemingly unthinkable events and unforeseen circumstances. It is necessary for nuclear staff, managers and emergency responders to be prepared for such contingencies and sudden developments. Human errors such as complacency and lack of critical thinking have been identified as key contributors to the Fukushima nuclear disaster.[20] Nuclear power and utilisation of radioactive materials for non-power applications (especially in industrial facilities, health and medicine, soil and water management, pollution monitoring, and agricultural production) do not merely involve

[13] Yangho Kim, Jungsun Park and Mijin Park, "Creating a Culture of Prevention."
[14] A.R. Hale, J. Hovden, "Management and culture: the third age of safety", in A. M. Feyer, A. Williamson (Eds.), *Occupational injury: risk, prevention and intervention,* London: *Taylor & Francis,* 1998, pp. 129-16.
[15] Yangho Kim, Jungsun Park and Mijin Park, "Creating a Culture of Prevention."
[16] Stephanie Zaza, Wendy E. Braund, Robert W. Carr, "Preventive Medicine: A hidden asset for building a dominant culture of prevention," Preventive Medicine, Vol. 111, 2018, pages 463-465.
[17] For full report, see International Nuclear Safety Advisory Group, *The Chernobyl Accident: Updating of INSAG*-1, Vienna: IAEA, 1992, https://www-pub.iaea.org/MTCD/publications/PDF/Pub913e_web.pdf (accessed on 2 June 2020); Yangho Kim, Jungsun Park and Mijin Park, "Creating a Culture of Prevention in Occupational Safety and Health Practice," *Safety and Health at Work*, Vol. 7, No. 2, 2016, pages 89-96.
[18] International Nuclear Safety Advisory Group, "Summary report on the post-accident review meeting on the Chernobyl accident," *Safety Series No. 75-INSAG-1,* Vienna: IAEA, 1986.
[19] IAEA, *Safety Culture: An International Nuclear Safety Advisory Group Report,* Vienna: IAEA, 1991.
[20] Toyoshi Fuketa, "Fukushima documentation: Lessons Learned from the Fukushima Dai-ichi Accident regarding Safety Culture of Regulatory Body," Presentation at the 6th International Symposium and Seminar on Global Nuclear Human Resource Development for Safety, Security and Safeguards, Tokyo Institute of Technology, Tokyo, Japan, 20 February 2017, https://www.nsr.go.jp/data/000179643.pdf (accessed on 25 June 2020).

technological aspects. Human aspects of nuclear safety should be as important as technological aspects.[21]

A Management System Fostering a Sustainable Safety Culture

The role of organisations and individuals, facilitated by a conducive management system, remains the crucial element in a positive safety culture and a culture of prevention in the context of preventing the spread of diseases at workplaces. Safety culture has to be inherent in the thoughts and actions of everyone at every level in an organisation. This must be the same if an organisation is to foster a culture of prevention, in view of the COVID-19 pandemic. To clearly illustrate the importance of organisations and individuals to both safety and prevention of disease contagion at workplaces, Table 1 identifies themes or dimensions of a nuclear safety culture at a nuclear facility and how these can be applied in building a culture of prevention at workplaces.

Table 1: Thematic Comparisons of Nuclear Safety Culture and Culture of Prevention at Workplaces

Themes	Key Lessons from Nuclear Safety Culture	Culture of Prevention at Workplaces
Goal	To prevent nuclear accidents and radioactive leaks at nuclear facilities	To prevent the spread of infectious diseases at workplaces
Commitment	There is absolute clarity about the organisation's nuclear safety philosophy. Beyond written procedures, commitment means not only providing leadership but also developing, in partnership with staff and their representatives, the means of translating the safety goals of the organisation into day to day reality.	The policy statement must be clear and concise, must set management's commitment to protect the safety and health of staff/employees from COVID-19 and other infectious diseases as main risks.
Use of Procedures	The rules and procedures, reinforced by regular training, need to bring out clearly to the workforce the reasons for particular requirements, since only then will the procedures be followed religiously by all members. E.g, Reducing the risk of nuclear accidents will protect their safety and health.	Culture of prevention rules must include clear procedures on emergency preparedness and planning responses for different scenarios, including a moderate outbreak or a severe pandemic at workplaces.
Critical decision-making	This refers to having a questioning attitude/critical thinking and a rigorous and prudent approach to decision-making. Most nuclear accidents have occurred because someone has failed to take the	In the context of developing a culture of prevention, complacency among staff is discouraged while critical/questioning mindset is cultivated which means they must always ask whether the

[21] US NRC (Nuclear Regulatory Commission), *Human Factors Consideration with Respect to Emerging Technology in Nuclear Power Plants,* Washington DC: US NRC, 2008.

	relevant precautions or has failed to consider 'unexpected' risks because of complacency and overconfidence.	implementation or their observance of protocols are strong enough to prevent the spread of COVID-19 at the workplace.
A Learning Organisation	There is a commitment to continual improvement. Regular training of staff and managers is recognised as vital to strengthen their safety culture. Nuclear facilities must conduct regular reviews, including safety self-assessment methods, external reviews and benchmarking, of their safety practices and systems. All discrepancies found should be comprehensively analysed and corrected.	There must be training programmes for staff and managers on the adopted measures to prevent risk of exposure to the virus and on how to act in case of COVID-19 infection at the workplace. The adopted preventive measures must be periodically evaluated and reviewed through external auditing, self-assessment exercises and feedback mechanisms (e.g., surveys, interviews).
A Reporting Culture	Failures and 'near misses' are considered by organisations with good safety cultures as lessons which can be used to avoid more serious events. To achieve this, all employees need to be encouraged to report even minor concerns. This raises the important question of 'blame free' reporting.	Workers should report to their immediate supervisor any situation which they believe presents a health hazard, including possible breach of pandemic-related preventive protocols.
Clear Communication, Responsibilities and Priorities	There must be clarity in the organisation about responsibilities and accountabilities of everyone. Nuclear safety is the overriding priority over competing factors.	Everyone must be cognizant of their rights, roles and responsibilities, if there is a COVID-19 outbreak and other pandemics. The principle of prevention is accorded the highest priority, over all other factors, to mitigate the risk of contagious diseases at the workplace.

Sources: International Nuclear Safety Advisory Group, *Key Practical Issues in Strengthening Safety Culture*, Vienna: IAEA, 2002; IAEA, *Safety Culture Practices for the Regulatory*, Vienna: IAEA, 2020 *;* ILO, "A safe and healthy return to work" ; ILO, *In the face of a pandemic: Ensuring Safety and Health at Work*, Geneva: ILO, 2020.

A Comprehensive State Policy Framework

Another important best practice in the promotion of a positive nuclear safety culture is that at the state level, there must be a comprehensive policy framework. The State, through a policy statement, has to define (i) the duties, responsibilities, and rights of various actors in the nuclear field; (ii) an implementing guide for licensing nuclear facilities and radiation staff to follow; and (iii) the means of regulatory control: rule making, safety evaluations, and inspections..[22]

[22] Julius Trajano, "A policy analysis of nuclear safety culture and security culture in East Asia: Examining best practices and challenges," *Nuclear Engineering and Technology*, Vol. 51, No. 6, 2019.

The South Korean model exemplifies this best practice. In 2001, the South Korean government issued the *Nuclear Safety Charter*, which codified top-level philosophy and principles, including the promotion of a nuclear safety culture in all nuclear-related organisations and facilities. The regulatory body Nuclear Safety and Security Commission (NSSC) issued the *Nuclear Security Culture Implementing Guide* in 2013. It explained the importance of human factors and leadership in nuclear security and interactions between safety culture and security culture. The implementing guide was intended for regulatory bodies, organisations, institutions and individuals involved in activities utilising nuclear energy or other radioactive materials. Consequently, all nuclear-related organisations, facilities, and agencies in South Korea established their respective safety/security action plans and organisational policies based on the government's implementing guide.[23]

In order to institutionalise the lessons of the Fukushima disaster, Japan's Nuclear Regulation Agency (NRA) issued the *Policy Statement on Nuclear Safety Culture* in 2015.[24] It contains the code of conduct for fostering nuclear safety culture and requires (i) priority to safety, (ii) decision-making taking into account the risks, (iii) developing a questioning attitude, (iv) harmonisation with nuclear security, (v) fostering, sustaining and strengthening a safety culture, (vi) maintaining high level of expertise and organisational learning, (vii) effective communication, and (viii) rigorous and prudent decisions and agile actions. Operators and facilities have developed their own internal guidelines based on NRA's codes and rules.

How can this key lesson on promoting a positive safety culture be replicated in the context of culture of prevention at workplaces in Southeast Asia? Any national policy framework must incorporate the COVID-19 pandemic setting and therefore be aimed at facilitating a safe and healthy return to work. The formulation of a policy guidance needs to be informed by a human-centred approach to the future of work with utmost considerations of life and health and the anticipation and mitigation of risks, including infectious diseases.

Similar to the safety culture policy framework, governments should prepare COVID-19-related occupational safety and health guidance that inculcates the culture of prevention at the workplace level. It can be done through a comprehensive regulatory/policy framework, which can be in the form of laws, ministerial decrees, resolutions, guidelines and technical notes. But first of all, a national law or policy must determine whether COVID-19 can be considered as an occupational disease. As mentioned earlier, the WHO and ILO state that COVID-19 can be regarded as an occupational disease when contracted as a result of work. [25] A policy framework must include procedures, goals, standards, rights, roles and responsibilities concerning the culture of prevention to minimise the risk of spread of COVID-19 and other pandemics.

Governments should examine the practical implementation of the culture of prevention policy at the ground level. Specifically, the policy should consider and address the specific needs of smaller businesses or organisations and the most vulnerable workers (e.g., migrants, elderly, women, persons with disabilities) who are operating in the informal economy.[26] In crafting a policy framework, governments in the region need not start from scratch. Indonesia, Malaysia, Thailand, the Philippines, Singapore and Vietnam have already ratified the *ILO Promotional Framework for Occupational Safety and Health Convention* and enacted legislations based on it (see Table 2).[27] The goal of the Convention is to advance a

[23] H. Yoo, "Nuclear Security Culture : in Case of ROK," Presentation at the International Cooperation to Enhance a Worldwide Nuclear Security Culture, Amsterdam, The Netherlands, 20 March 2014.
[24] Toyoshi Fuketa, "Fukushima documentation."
[25] ILO, *ILO Standards and COVID-19 (coronavirus),* p. 17. WHO, *Considerations for Public Health*, p. 4.
[26] ILO, "A safe and healthy return to work."
[27] ILO, Ratifications of C187 - Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187), https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:11300:0::NO:11300:P11300_INSTRUMENT_ID:312332:NO (accessed on 12 June 2020

preventative safety and health culture through the application of an occupational safety and health management system approach at a national level. It prescribes how national policies and programmes can promote continuous occupational safety and health improvements through a culture of prevention. Even ASEAN, prior to COVID-19, has already developed a very comprehensive *Guidance Note on Occupational Safety Health Management Systems in Small and Medium-sized Enterprises (SMEs) (2013)* which contains strategies to build a culture of prevention against hazards, accidents and diseases, specifically for SMEs and small organisations.[28] This ASEAN guidance is crucial given that SMEs account for more than 95-99 percent of all business establishments in the region.[29]

In this regard, the Convention, the ASEAN Guidance, and corresponding ILO guidelines may offer a reference point from which countries can develop policies and programmes on a pandemic-oriented culture of prevention, adapted to their own circumstances/national cultures. At the national level, most of the Southeast Asian countries have already enacted occupational safety and health laws long before COVID-19, as well as instituted policy guidelines and measures on safe return to workplaces to minimise COVID-19 contagion. Such existing laws and guidelines can help deepen a culture of prevention against the spread of COVID-19 and other pandemics. From these policy guidelines and frameworks, there are common elements that can be institutionalised through developing a culture of prevention: e.g., physical distancing; personal and respiratory hygiene; regular environmental cleaning and disinfection; risk communication, training, and education for staff and employers; overseas travel advisories; screening of symptoms; management of staff with COVID-19 or their contacts; and emergency preparedness and response protocols, among others.

Table 2: Occupational Safety and Health Laws and Policies for Safe and Healthy Return to Workplaces in Southeast Asia

Country	Policy and Legal Frameworks
Thailand	The obligations of private sector employers to provide safe and hygienic working conditions for their employees are stipulated under Thailand's Occupational Safety, Health and Environment Act. Employers are required to arrange and maintain their premises to support safe and healthy workforce operations and prevent any harm to the life, body, or mental or physical health of their employees.
Singapore	The Workplace Safety and Health Act is the key legislation on occupational safety and health. As the country has embarked its phased approach to re-opening businesses, the Ministry of Manpower has regularly issued comprehensive requirements for safe management measures at the workplace, including sector specific-guidelines and infographics on safe management.

[28] ASEAN, *ASEAN Guidelines for Occupational Safety and Health: Guidance Note on Occupational Safety & Health Management Systems for Small and Medium Enterprises*, Jakarta: ASEAN Secretariat, 2013.
[29] ASEAN SME Service Center, About us, n.d. http://aseansme.org/aboutus (accessed on 12 June 2020).

Vietnam	The Ministry of Health promulgated guidelines on prevention and control of COVID-19, for workers, employers and health professionals at workplaces and dormitories. The Law on Occupational Safety and Health outlines the responsibilities and rights of organisations and individuals in respect of occupational safety and health management.
The Philippines	The main legal framework is The Act Strengthening Compliance with Occupational Safety and Health Standards. The Labour Department issued policy guidelines on the prevention and control of COVID-19 at workplaces which mandate workers and employers in the private sector to observe strict health protocols.
Indonesia	The main policy framework is the Government Regulation No 50 of 2012 Concerning the Implementation of the Occupational Safety and Health Management Systems. The Ministry of Manpower issued a circular on workers' protection and business sustenance, mandating preventive measures that need to be taken to reduce contagion risk at workplaces. The Ministry also offers online occupational safety and health services to provide information and consultation related to COVID-19 prevention at workplaces.
Myanmar	Its most recent legal framework is the Occupational Safety and Health Law, 2019. The Ministry of Health and Sports circulated a policy guideline on new working arrangements at workplaces to prevent and control COVID-19 contagion.
Cambodia	The Ministry of Labour and Vocational Training released a guide on COVID-19 prevention measures for factories and enterprises. Various labour laws and regulations, in the context of specific industries, contain occupational safety and health provisions and are supplemented by the national masterplan on occupational safety and health.
Laos	The Law on Hygiene, Disease Prevention and Health Promotion stipulates principles and measures on hygiene, disease prevention, and health promotion at workplaces. With the COVID-19 pandemic, the Ministry of Labour and Social Welfare issued the Ministerial Notification No. 0709, instructing all enterprises, employers and workers to follow the preventive measures against the outbreak.
Malaysia	The main legal framework is the Occupational Safety and Health Act. The government published the Management Guidelines for Workplaces relating to the COVID-19 situation.
Brunei	There are government regulations mandating safety and health measures to minimise contracting diseases and prevent accidents at workplaces.

Sources: ILO, "COVID-19 and the world of work: Country policy responses", 2020, https://www.ilo.org/global/topics/coronavirus/country-responses/lang--en/index.htm (accessed on 25 June 2020); ILO, "Occupational safety and health in Asia and the Pacific: Country Profiles," 2020, https://www.ilo.org/safework/countries/asia/lang--en/index.htm (accessed on 24 June 2020).

Competent and Proactive Regulatory Agencies

While national policy frameworks and internal rules and procedures of organisations are important in strengthening a safety culture at nuclear facilities as well as a culture of prevention at workplaces, there must be an enforcement monitoring mechanism to ensure compliance and detect potential gaps. This is the role of the regulatory body.

In the field of nuclear safety culture, being proactive, competent and independent entails having the regulatory power to fully monitor, assess and demand strict compliance of policy frameworks and nuclear safety regulations by nuclear power plants without any pressure from stakeholders with conflict of interest. Learning from previous nuclear accidents is a critical factor for having a regulator that can institutionalise a safety culture. For instance, based on the lessons of the Fukushima accident, Japan established an independent nuclear regulatory body, an achievement recognised by a team of IAEA experts in 2016.[30] Moreover, the NRA has also included safety culture assessments in its regular inspections of facilities to identify symptoms of weakening safety culture.

In South Korea, the NSSC, learning from past incidents, has become more proactive in ensuring that a safety culture is observed in all nuclear facilities. The NSSC conducts periodic safety reviews, which cover safety culture assessment, every 10 years for all nuclear installations as mandated by the current legal framework. Safety culture assessment is held every two years for each power stations on a voluntary basis. To effectively promote safety culture, the regulatory body should have innovative and proactive engagements with relevant stakeholders. For example, the NRA Japan and South Korea's NSSC regularly conduct briefings for senior management, operators, and safety culture officers of nuclear facilities to ensure that they can encourage their employees to always uphold nuclear safety.[31]

Learning from this best practice on nuclear safety culture, compliance mechanisms, including strong regulatory oversight and inspection systems are essential in strengthening the culture of prevention. In this context, labour inspectorates play a key role by monitoring whether preventive COVID-19 protocols are effectively implemented and respected organisationally and individually, including by enforcing the applicable law. Having a regulatory oversight on the culture of prevention does not mean ASEAN member-states have to create a new regulatory agency. ASEAN member-states already have occupational safety and health divisions primarily within their respective manpower/labour ministries, health ministries or related agencies. They have been promoting a preventative occupational health and safety culture through various regulatory oversight activities such as inspections, capacity building, information dissemination and practical training programmes. Most of them have also issued interim guidelines and policy interventions on COVID-19 prevention and control at the workplace (see Table 2).[32] The next step, therefore, would be to build on their past and recent measures to come up with a strong regulatory oversight mechanism specifically for building culture of prevention, with lessons learnt from the COVID-19 pandemic. Unlike a nuclear regulatory body which focuses only on specific types of facilities, culture of prevention regulatory mechanisms may be exercised not just by occupational safety and health agencies of labour ministries but also by other relevant agencies and even local governments that can oversee local SMEs and facilities.

[30] IAEA, "Report of the Integrated Regulatory Review Service (IRRS) Mission to Japan. Tokyo, Japan," January 2016, http://www.nsr.go.jp/data/000148261.pdf (accessed on 2 June 2020).
[31] IAEA, *Safety Culture Practices for the Regulatory Body*, Vienna: IAEA, 2020.
[32] To see the policy interventions on occupational safety and health culture in each ASEAN member-state, see this ILO database: https://www.ilo.org/asia/countries/lang--en/index.htm

At the regional level, the work of developing regional occupational safety and health standards and practices has been carried out through the ASEAN-Occupational Safety and Health Network (OSHNET) since its establishment in 2000. The ASEAN-OSHNET's Plan of Action has a direct influence on the ASEAN member states' occupational safety and health developments and can ultimately lead to the development of stringent national legislations within the region.[33] One of the thematic areas of the current ASEAN-OSHNET Plan of Action (2016-2020) is on HIV/AIDS prevention and control at the workplace; no other infectious diseases mentioned.[34] Certainly, the next ASEAN-OSHNET Plan of Action (2021-2025) must include the prevention of COVID-19 contagion and other future pandemics at workplaces with corresponding regional projects, workshops, and database of best practices on the culture of prevention under the realm of occupational safety and health.

Conclusion

The COVID-19 pandemic has shown that ensuring that workplaces are safe and healthy is crucial to containing virus transmission, thereby protecting the health of workers and the larger population. Health and safety have become more paramount than ever. Hence, a culture of prevention at the workplace needs to be deepened. Nuclear safety culture, which has been developed and promoted since the 1986 Chernobyl accident, offers practical lessons on how a culture of prevention can be institutionalised at the national and workplace levels. In the context of COVID-19, building a culture of prevention in ASEAN has never been more significant and timely than today. A culture of prevention should be a paradigm shift in national and even regional health security in Southeast Asia, a shift from a reactive framework to a more proactive, prevention-oriented mindset. As countries and ASEAN have yet to craft frameworks of action as well as strategies or action plans to operationalise the ASEAN Declaration on the Culture of Prevention (particularly the thrust on a culture of healthy lifestyle), it is crucial to examine how some of the best practices in the promotion of a nuclear safety culture can be applied in building a culture of prevention at workplaces.

[33] ASEAN-OSHNET, *Turning Visions into Actions: Celebrating 15 Years of Collaboration*, 2015, https://asean.org/storage/2012/05/Turning-Visions-into-Actions_ASEAN-OSHNET.pdf (accessed on 13 June 2020).
[34] ASEAN Occupational Safety and Health Network Action Plan 2016-2020, 2016, https://asean.org/storage/2012/05/ASEAN-OSHNET-Work-Plan-2016-2020_adopted-by-the-24th-ALMM_FINAL.pdf (accessed on 13 June 2020)

About the Author

Julius Cesar I. Trajano is Research Fellow with the Centre for Non-Traditional Security Studies (NTS Centre) at the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University (NTU), Singapore. He obtained his Master of Science degree in Asian Studies from RSIS (2011), and a Bachelor of Arts degree in Social Sciences-Area Studies (Magna Cum Laude) from the University of the Philippines (2006). Mr Trajano conducts policy research studies and has publications (book chapters, articles, op-ed commentaries, policy reports) on non-traditional security issues, particularly on marine environmental protection in Southeast Asia, nuclear security and safety governance in East Asia, internal conflicts, and human trafficking. He is also presently the coordinating chair for the Asia Working Group of the International Nuclear Security Education Network and is a member of the Council for Security Cooperation in the Asia-Pacific- Nuclear Energy Experts Group.

About the Centre for Non-Traditional Security Studies

The Centre for Non-Traditional Security Studies (NTS Centre) conducts research and produces policy-relevant analyses aimed at furthering awareness, and building the capacity to address NTS issues and challenges in the Asia Pacific region and beyond. The Centre addresses knowledge gaps, facilitates discussions and analyses, engages policymakers and contributes to building institutional capacity in the following areas: Humanitarian Assistance and Disaster Relief; Climate Security and Migration. The NTS Centre brings together myriad NTS stakeholders in regular workshops and roundtable discussions, as well as provides a networking platform for NTS research institutions in the Asia Pacific through the NTSAsia Consortium.

More information on NTS Centre and a complete list of available publications, policy briefs and reports can be found here: http://www.rsis.edu.sg/research/nts-centre/.

About the S. Rajaratnam School of International Studies

The **S. Rajaratnam School of International Studies (RSIS)** is a think tank and professional graduate school of international affairs at the Nanyang Technological University, Singapore. An autonomous school, RSIS' mission is to be a leading research and graduate teaching institution in strategic and international affairs in the Asia Pacific. With the core functions of research, graduate education, and networking, it produces cutting- edge research on Asia Pacific Security, Multilateralism and Regionalism, Conflict Studies, Non-Traditional Security, Cybersecurity, Maritime Security, and Terrorism Studies.

For more details, please visit www.rsis.edu.sg. Follow us on www.facebook.com/RSIS.NTU or connect with us at www.linkedin.com/school/rsis-ntu.