Singapore embarked on the journey towards Workplace Safety and Health (WSH) excellence more than a decade ago. Guided by the National WSH Strategies developed in 2005 (WSH 2015) and 2008 (WSH 2018), we have strengthened the WSH regulatory framework, built up WSH capability and heightened WSH awareness. We have made significant progress. Our workplace fatal injury rate declined from 4.9 per 100,000 employed persons in 2004 to 1.9 per 100,000 employed persons in 2015.
KEY MILESTONES

WSH 2015: EFFECTING A PARADIGM SHIFT IN MINDSET TO FOCUS ON REDUCING RISK AT SOURCE

A new WSH framework was launched in 2005 following the occurrence of several high-profile workplace accidents in 2004. A 10-year National Strategy, the WSH 2015, was developed to create safe and healthy workplaces for everyone, and for Singapore to become a country renowned for WSH best practices. We sought to halve the workplace fatal injury rate from 4.9 per 100,000 employed persons in 2004 to 2.5 per 100,000 employed persons by 2015.

WSH 2015 has four key thrusts: (1) Build strong capabilities to better manage workplace safety and health, (2) Implement an effective regulatory framework, (3) Promote the benefits of workplace safety and health and recognise best practices and (4) Develop strong partnerships locally and internationally.

Key milestones under WSH 2015 include:

Enactment of WSH Act

The Workplace Safety and Health Act was enacted on 1 March 2006 with three key principles: (1) emphasis on eliminating and reducing risks at source instead of compliance with prescriptive rules; (2) placing duties on persons who create and have control over the WSH risks to instil greater ownership; and (3) raising penalties to deter risk-taking behaviour and reflecting the real cost of poor WSH management.

The WSH (Risk Management) Regulations was introduced to require employers, self-employed persons and principals to put in place proper risk assessments and control measures at their workplaces. These regulatory changes led to widespread implementation of basic risk management practices at workplaces.

Formation of WSH Council

The WSH Council was established in 2008 as an industry platform to raise awareness and build WSH capability. It rolled out extensive promotional and educational initiatives, including the annual National Workplace Safety & Health Campaign. WSH Council also developed sector-specific codes of practice, standards and guidelines on key WSH topics. A comprehensive WSH competency framework and industry support programmes were introduced to raise industry’s WSH standards. In 2007, the bizSAFE programme was launched to help Small and Medium Enterprises (SMEs) develop robust risk management capabilities. More than 25,000 companies had since taken up the programme.

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1 In its first phase, the WSH Act covered approximately 40% of all workplaces. These include high-risk workplaces such as construction sites, shipyards, manufacturing and general factories.

2 In early 2005, the WSH Advisory Committee (WSHAC) was set up to drive industry ownership of WSH outcomes. In November 2006, the International Advisory Panel on WSH recommended an expanded scope for the WSHAC to become a full-fledged Council. MOM accepted the recommendation and the full-fledged WSH Council was formed in 2008.
WSH 2018: ENGENDERING A PROGRESSIVE AND PERVERSIVE CULTURE TO IMPROVE WSH OUTCOMES

WSH 2015 brought about significant improvements. Workplace fatal injury rate reduced from 4.9 in 2004 to 2.8 per 100,000 employed persons in 2008. In 2009, the industry was challenged to achieve a lower workplace fatal injury rate of less than 1.8 per 100,000 employed persons by 2018. A revised National WSH Strategy, the WSH 2018, was devised to attain this new target.

Building on WSH 2015, the WSH 2018 Strategy introduced a new thrust on building a progressive and pervasive WSH culture. It encouraged stakeholders to view WSH as a personal responsibility and proactively take preventive actions to reduce risks.

Key milestones under WSH 2018 include:

- **Extension of WSH Act to all Workplaces and Development of WSH Sectoral Plans**
  - The WSH Act was extended to cover all workplaces in 2011. This underscored our belief that every worker has a right to a safe and healthy workplace. Extensive industry engagement generated greater WSH awareness and encouraged companies, beyond those in high-risk sectors, to address WSH hazards at their workplaces.
  - WSH Sectoral Plans were developed for key sectors such as Marine and Construction. These plans drive collective actions in the sectors to achieve set targets.

- **Formation of WSH Institute**
  - The WSH Institute was established in 2011 to provide evidence-based research to address WSH industry challenges. It partners internationally renowned WSH Research Institutes and established 5 Memoranda of Understanding to foster information exchange and research collaborations. As of end March 2016, the WSH Institute has commissioned and conducted over 50 research projects.

- **Engendering a Progressive and Pervasive WSH Culture**
  - WSH 2018 recognised that sustained improvement in workplace safety and health can only be achieved through a culture change where management and workers embrace the belief that all injuries are preventable. The CultureSAFE programme was launched in 2012 with a WSH Culture Fund to help companies implement the CultureSAFE programme at their workplaces. More than 560 companies have benefitted from the programme, of which more than half were SMEs.

- **Vision Zero Movement**
  - Taking the culture of prevention further, the Vision Zero movement was launched at the annual National WSH Campaign 2015 to drive the Vision Zero mindset that all workplace injuries and ill-health are preventable. The National WSH Campaign 2016 built on this by inspiring stakeholders and industry leaders to take personal responsibility to prevent injuries and ill-health at all times. A six-step approach\(^3\) was introduced to help companies embark on their Vision Zero journey.
  - The Vision Zero movement was embraced at the ‘Construction WSH Leadership Summit 2015’ themed “Towards Vision Zero – Together, Delivering Excellence in WSH for the Built Environment”. 10 Construction industry association leaders reaffirmed their commitment to reduce the workplace fatal injury rate for construction industry to less than 1.8 per 100,000 workers by 2018. A set of WSH industry action plans was put together to achieve the target.

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\(^3\) The six steps are: Step 1 - Make a commitment; Step 2 - Set a goal; Step 3 - Communicate the goal; Step 4 - Identify WSH challenges; Step 5 - Find solutions; and Step 6 - Review and monitor progress
INCREASED WORKPLACE FATALITIES

We have made steady improvements in our WSH performance over the past decade. While year-on-year fluctuations in workplace fatal injury rate are expected, our WSH performance seemed to have plateaued at around 2.0 per 100,000 employed persons over the last few years. Although we achieved the 1.8 per 100,000 fatality rate in 2014, it could not be sustained. We are particularly concerned with the situation in the 1st half of 2016. We had 42 workplace fatalities, compared to 30 over the same period in 2015. The projected annualised fatal injury rate for 2016 is 2.5 per 100,000 employed persons, highest since 2009 (see Chart 1). We need to ensure this does not indicate a structural uptrend.

The situation in the construction sector is of concern. Construction remained the main contributor to workplace fatalities with 18 deaths (43% of total fatalities) in 1st half of 2016. The projected annualised fatal injury rate for 2016 stands at 7.2 per 100,000 employed persons (see Chart 2). This would set us back to the high point in 2013. Workplace safety records in the other sectors have stayed relatively stable, but we need to ensure that they can be sustained and improved over the long term.
We have further observed a rising incidence of workplace health as a contributory factor to work-related fatalities. In the last 3 years, almost 30% of work-related fatality claims under the Work Injury Compensation (WIC) Act had health as a contributory factor (see Chart 3).

**Increased Incidence of Work-Related Injuries among Older Workers**

Workplace injury rate has improved over the past decade, declining from about 460 per 100,000 employed persons in 2007 to about 364 per 100,000 employed persons in 2015. The projected annualised workplace injury rate for 2016 is 361 per 100,000 employed persons (see Chart 4).

However, the number of workplace accidents involving workers aged 55 or more is rising. Over the past three years, there is an average of 2% annual increase in minor injuries involving these workers. In the 1st half of 2016, 18% of workplace minor injuries involved this group of workers (see Chart 5). This is of concern given our ageing workforce.

\[4\text{ Based on 2012 - 2014 statistics of work injury compensation claims.}\]
A root cause analysis (RCA) of the recent construction workplace fatalities highlighted the need to address systemic lapses, improve workers’ competency and greater industry ownership as key drivers to arrest the deteriorating situation in the construction sector.

**SYSTEMIC LAPSES**
While most companies involved in workplace fatalities conducted risk assessment, there was evidence that inadequate risk management was carried out. 87% of the companies did not carry out thorough risk assessment or implement adequate risk control measures. 73% of the fatalities were attributed to lapses in planning and execution of work activities, including poor supervision, communication and coordination of work. In 93% of the fatality cases, workers adopted the wrong or unsafe behaviour, reflecting both a lack of competency and safety awareness.

**EXPERIENCE AND COMPETENCY MATTERS**
Our analysis suggested that construction workplace fatalities are more likely to involve workers with less than one year experience with their companies or less than three years working experience in Singapore. It also indicated that lower-skilled workers have a higher propensity of encountering workplace fatalities in the construction sector compared with their higher-skilled counterparts.

**NEED FOR GREATER INDUSTRY OWNERSHIP**
Industry feedback suggest that some construction companies have accepted WSH infringements as a normal course of business activities. They set aside “safety budgets” to cover the fines incurred from enforcement actions. We have also received reports of a small number of construction companies exerting influence on medical doctors to reduce the number of medical leave for their injured employees. Accredited Training Providers (ATPs) were caught with fraudulent practices in conducting WSH training. In some cases, certificates were issued without conducting any training. In others, trainees were guaranteed a pass through provision of answers, open-book assessments and cheating. Some employers were also found to be complicit in recognising these fraudulently obtained certificates.

**HEALTH RISK FACTORS NOT Addressed**
Separately, investigations of workplace injuries and ill-health revealed that many companies have yet to adopt an integrated approach in managing the safety, health and well-being of the workers at the workplaces. This is despite the enhancement of the Code of Practice on WSH Risk Management in 2015 which requires employers to consider individual health risk factors. Many jobs involving matured workers were not re-designed to ensure they were age-appropriate.

On ground engagements revealed that senior management generally has low awareness of the inter-relationship between workers’ personal health and its impact on work safety and health of workers. WSH professionals also lacked sufficient competency to identify and advise management on the need to manage work environment, organisational and personal health factors in an integrated manner to prevent accidents and ill-health from work.

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1 As of July 2016, we have revoked the licenses of 20 ATPs due to fraudulent practices in their training. Affected trained workers from these organisations were required to retake their course within a stipulated time.
While the vision, strategic outcomes and strategies under the WSH 2018 remain relevant, more efforts are needed. WSH 2018 Plus sets out the plan to bring us back on track to achieve the 2018 target while laying the foundation to address emerging WSH challenges and sustain continuous improvement beyond 2018.

The WSH 2018 Plus plan has three key priorities:

1. Improving WSH Performance in Construction Industry
2. Strengthening WSH Competency
3. Building Collective WSH Ownership

Figure 1: WSH 2018 Plus
At the Construction WSH Leadership Summit 2015, 10 construction industry association leaders reaffirmed their commitment to reduce the construction sector’s fatal injury rate to 1.8 per 100,000 employed persons by 2018. A series of action plans covering leadership, procurement and reducing safety and health risks through good design was formulated and is in progress.

We need to encourage such commitment and positive attitude towards WSH. This will motivate companies to work towards preventing work injuries and ill-health upstream. We recognise that companies have different capabilities and attitude towards WSH. As such, we will adopt a differentiated enforcement approach that will instil greater ownership and motivation for companies to improve their performance.

We will do the following:

**ENACT PROGRESSIVE WSH LEGISLATION**

Legislative levers are effective in bringing about the desired changes towards WSH in the industry. We will continue to adopt an outcome-based approach grounded on principles of risk management in reviewing/enacting WSH legislation.

The WSH (Design for Safety) Regulations effected on 1 Aug 2016 is a good example. It places greater responsibilities on developers and designers to address foreseeable risks at the design and planning phases. We believe this regulation will drive upstream WSH prevention, but the benefits will be seen a few years down the road.

We will take the same approach in reviewing the WSH (Construction) Regulations to improve formwork safety and on-site traffic safety. Fatalities involving formwork and worksite traffic accidents accounted for 30% of construction fatalities in 2015. The review aims to drive better onsite co-ordination, planning and communication by mandating the formation of a Project Safety and Health Coordination Committee to plan and co-ordinate all hazardous works at the worksite.
Companies with high capability and good attitude towards WSH are role models for the industry. We will adopt a self-regulated approach. We will extend our pilot Developer and Designer Early Engagement (D2E2) programme to this group of companies by working with them to address safety and health risks upstream. Under D2E2, companies identify WSH risks and set WSH performance targets upfront during the planning or design stage. In return for adopting processes to reduce workers exposure to injury or ill-health, there will be fewer inspections.

Companies with low capability but good attitude towards WSH will require assistance to improve. We will adopt an engagement-centric approach. The enhanced Safety Compliance Assistance Visits Plus (SCAV+) will be extended to provide free on-site customized compliance assistance to identify WSH lapses and recommend relevant control measures. We will provide early notice to these companies before our inspections to encourage them to make use of available resources to improve. Our regulatory approach will also be more solution-oriented instead of fault-finding. We will look beyond immediate safety and health hazards and risks associated with the offences, to identify practical solutions on site together with the company to address specific site challenges instead of simply enforcing the regulations.

Companies with low/high capability but poor attitude towards WSH will bear the brunt of our full regulatory levers. Even as we offer assistance to uplift their capabilities or engage them to change their mindset, we will couple it with a tougher enforcement stance. We will seek custodial sentences on individuals of errant employers who blatantly disregard the law. We will also enhance the prosecution process for WSH cases to place the burden of proof on the party responsible for the breach.

INFLUENCE WSH STANDARDS THROUGH PROCUREMENT PRACTICES

Procurement is an important part of the construction value chain and is an upstream lever that drives industry behavior.

Public sector agencies already require main contractors and subcontractors to be minimally bizSAFE Level 3 to qualify for public construction projects. Public agencies, such as LTA, HDB and JTC have taken a step further by evaluating safety track records as a pre-tender requirement, placing greater weightage on safety in their tender evaluation process and requiring contractors to set aside a safety budget.

With public sector projects accounting for 60% of all construction projects, we will progressively introduce these good practices into all public construction tenders to lead the way in encouraging private developers to do the same.

LEVERAGE ON TECHNOLOGY

Technology can drive WSH improvements while improving productivity.

The construction industry’s move towards pre-fabricated pre-furnished volumetric construction (PPVC) is an example. It significantly reduces WSH risks on site with majority of the work done in factories under a more controlled environment.

The mandatory installation of data loggers in all mobile cranes is another example. It allows crane owners and occupiers to monitor the performance of crane operations, facilitate better planning of lifting operations and shape the behaviour of crane operators.

Companies such as Lend Lease Singapore have also used facial recognition and access pass control to ensure authorized entry into designated work areas.

We will organise a WSH Technology Symposium to expose the industry to technologies that can improve safety and health at workplaces and support greater adoption through co-funding where appropriate.

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Data Loggers are akin to a black box in aircrafts where key operating parameters are recorded and stored for purpose of planning and monitoring of lifting operations as well as accident investigations. Existing mobile cranes registered before 1 August 2015 will have to be retrofitted with data loggers by 1 August 2018.
A workforce competent and skilled in managing workplace safety and health is critical to deliver sustained improvement in Singapore’s WSH performance across all sectors. Today, all construction workers are already required to attend and pass the Safety Orientation Course for Construction Industry (CSOC) to ensure they are trained in work safety. Over 50 safety-related courses are in place to address sector-specific needs. Annually, 200,000 workers are trained by over 100 training providers. We have improved the quality of training in October 2014 by requiring WSH training providers to be certified under the ISO 29990:2010 Learning Service Provider Certification administered by the Singapore Accreditation Council (SAC).

We have also mandated the requirement for companies to have a registered workplace safety and health officer (WSHO) where the project sum is $10 million or more, and in factories where there are 100 or more workers. Today, there are over 4,000 WSHOs playing a vital role in keeping our workplaces safe and healthy and more than 12,000 WSH coordinators trained to serve the industry’s requirements.

We can build on this foundation. As the industry progresses, our employees need to possess more than basic safety knowledge. Specialised knowledge of safety need to commensurate the complexity of projects. Beyond technical knowledge, soft skills such as communication and relationship management are critical to convey safety messages effectively. These require training providers to deliver quality training and safety professionals to upgrade and enhance their value.

We will do the following:

**RAISING THE RECOGNITION OF WORKPLACE SAFETY AND HEALTH OFFICERS WITH CAREER PROGRESSION PATHWAY**

We will work with the Singapore Institution of Safety Officers (SISO) to develop a career progression pathway for WSHOs. With deeper mastery of skills, they will be more valued by employers, allowing them to drive WSH improvements more effectively on the ground. SISO is collaborating with local Institutes of Higher Learning (IHLs) such as National University of Singapore to develop training programmes to help WSHOs further develop themselves professionally over their career span, from contributing at the shopfloor to championing WSH in the boardroom.

**ENHANCE TRAINING DELIVERY FOR A RICHER LEARNING EXPERIENCE**

Instead of just classroom-based training, we will work with training providers to introduce blended learning via interactive and experiential modules. This will allow trainees to internalise the knowledge gained and provide them with greater flexibility on the pace of learning. For example, course information can be uploaded onto smart phones for ease of learning at workers’ own pace and time, and virtual simulators capturing actual worksite conditions can be used for realistic training.
**Move Towards a Competency-Based and Outcome-Oriented Training Curriculum**

We have started to introduce more hands-on components in the training curriculum of workers, supervisors and managers. Training for supervisors and project managers will include greater emphasis on soft skills such as communication and relationship management. We will encourage more in-house safety induction training, briefings and refresher training to complement basic mandatory training by external providers. Workers will be trained to carry out Last Minute Risk Assessment (LMRA) to engender personal ownership of WSH.

**Enhance Quality of Training Providers and Trainers**

We will expedite the migration of MOM’s ATPs to Workforce Development Agency (WDA)’s Workforce Skills Qualifications framework to further increase the quality and effectiveness of WSH trainings.

We have recently introduced the “Train the Trainers” Programme that require trainers for the WSH courses to undergo at least 10 training hours each year. We will work with the industry to provide quality Continuous Professional Development programmes and ensure its smooth implementation.

**Key Priority 3:**

**Building Collective WSH Ownership**

Sustained WSH improvement can only happen with collective ownership by all stakeholders to build a progressive and pervasive WSH culture. We need the following shifts in mindset:

1. From reducing workplace fatalities to preventing all work-related injuries and ill-health
2. From injury compensation to injury prevention and management
3. From focusing only on safety to equal emphasis on safety and health
4. From government-led to industry-driven

**From Reducing Workplace Fatalities to Preventing All Injuries and Ill-Health**

A pervasive Vision Zero mindset that all workplace injuries and ill-health are preventable is needed across all sectors and levels of society.

Vision Zero is not a tagline or an annual campaign. Sustained efforts across many years is needed to gain traction. Germany, for example, has committed over €6 million euros over the next 4 years to support a 10-year “Culture of Prevention” campaign to propagate Vision Zero across the country.

Our Vision Zero movement, launched in 2015 is in its infancy. We will work closely with industry leaders to champion the Vision Zero movement over the next few years by sharing the moral and business case for adopting the mindset. Beyond awards and recognition, we will explore incentives to grow the movement.

We will also imbue WSH values from young by integrating WSH knowledge into students’ learning and school activities across all levels, so that staying safe and healthy becomes second nature to our future workforce.
FROM INJURY COMPENSATION TO INJURY PREVENTION AND MANAGEMENT

Work Injury Compensation (WIC) insurance can be a lever to influence the right behaviour in companies if there is sufficient differentiation in premium at a firm level based on workplace safety performance. WSH Council has formed an Insurance Work Group comprising representatives from insurers, employers and unions to review the WIC framework for better WSH performance.

We can also do more to help injured workers Return to Work (RTW). Early return to work not only reduces cost for employers by shortening downtime but can help in the rehabilitation of the injured workers. Countries such as Australia and Germany have mandated RTW as a WIC outcome.

We have reviewed the WIC framework in 2015 to include RTW-related expenses for compensation. We will work with industry stakeholders to develop a National RTW framework to help injured workers return to work. Efforts will focus on raising awareness, building capabilities and infrastructure to facilitate and coordinate the RTW process.

FROM FOCUSING ONLY ON SAFETY TO EQUAL EMPHASIS ON SAFETY AND HEALTH

With an ageing population and a shrinking labour force, more matured workers will continue to stay in the workforce. The cost of work-related injuries and ill-health is also rising. An equal emphasis needs to be placed on preventing and addressing work-related ill-health alongside improving work safety.

We need to raise awareness on the importance and approach towards Total WSH. We will leverage on existing platforms e.g. WSH Campaign, WSH Conference, Industry talks, WSH websites and create new channels through Health Promotion Board, associations, unions, etc. to extend its outreach. We will explore including Total WSH as a criteria in the Singapore Health Award, Singapore Human Resource Awards and WSH Awards to give further recognition to exemplary employers.

We need to build strong competencies in workplace health among the industry practitioners. We will develop a robust training infrastructure for Total WSH. This includes accrediting training providers for Total WSH Courses and reviewing existing professional training frameworks to incorporate the Total WSH concept. We will work with SISO to incorporate workplace health elements into the WSHO’s competency framework and career progression pathway.

We need to be more aggressive in driving the adoption of Total WSH at a company level. We will develop an e-tool for companies to perform online assessment to measure their readiness for Total WSH and to identify their gaps. This will facilitate development of an implementation plan that can be supported through existing government grants. We will incorporate Total WSH concept into bizSAFE courses to get buy-in from top management at an early stage.

FROM GOVERNMENT-LED TO INDUSTRY-DRIVEN

The Government has partnered the industry over the years in our WSH journey. While government involvement continues to be important, we can do more to facilitate industry leadership and ownership.

We will therefore review the WSH Council’s current operating model to broaden and deepen our tripartite partnership, as well as to better address the fundamental interest of improving employees’ well-being at work.

We will also review the work injury compensation insurance framework and administration processes to better reflect the true cost of workplace accidents. This will provide an impetus for the industry to take greater ownership in WSH and prevent workplace accidents.
CONCLUSION

The WSH 2015 and WSH 2018 National Strategies have brought about significant WSH improvements over the years. While our WSH performance has deteriorated in the 1st half of 2016, we need to persevere on our journey towards WSH excellence. This is pertinent as Singapore transforms into a manpower-lean economy amidst an ageing workforce. Helping all our workers stay safe, healthy and productive is a national priority.

Building on our past efforts, WSH 2018 Plus sets out the plan to bring our performance back on track, and advance our WSH performance towards the 2018 target and beyond. It focuses on improving WSH performance in the construction industry while strengthening WSH competency and building collective ownership towards our vision of a safe and healthy workplace for everyone, and a country renowned for best practices in Workplace Safety and Health.