Accident Prevention - Vision Zero

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Abstract: As seen in recent years, there is a growing interest on the topic of Vision Zero to drive improvements in the workplace safety and health (WSH) outcomes. What exactly is meant by the term 'Vision Zero'? An international scan was conducted by the Singapore WSH Institute to determine the different interpretations of 'Vision Zero' and to determine how this concept of 'Vision Zero' has been translated into action such as programmes and national strategies. In the eight countries studied, there were varied interpretations of the term Vision Zero, including it being considered as an aspirational goal, a mindset shift to achieve zero harm or zero workplace fatalities and accidents, and also a performance target. Countries have incorporated 'Vision Zero' in many ways including it being as the national strategies, strategic plans and programmes. Key findings from the international scan also revealed that there were six focal areas which require attention and focus at the national level, which could provide insights and lend perspectives to both groups of stakeholders - policymakers and industry alike, to address current gaps in driving a paradigm shift towards excellence in WSH outcomes and performance.

INTRODUCTION

The term 'Vision Zero' which conjures the image of a future in which no one will be killed or seriously injured or fall ill because of work, gained prominence in the 1990s - when the Ministry of Transport, Sweden adopted the fundamentals of the zero-accident philosophy. The vision is seen as a kind of mindset shift in road safety, not interpreted as a target, but rather on the underlying belief that it is ethically unacceptable for people to be killed or seriously injured due to movements undertaken within the road transport system [1][2][3]. Fundamentally, the thinking underpinning Vision Zero is that 'no loss of life is acceptable' [1][2][3] and what is novel about this definition is that it does not allow the acceptance of 500, 100 or any number of lives to be lost prematurely through road traffic accidents [4].

If we are to go back in time, the concept of every accident is avoidable in fact has its roots, in a workplace setting in the chemical industry, as early as in the 18th century, introduced by the DuPont group of companies, and this was in response to the many workplace accidents happening during that period of time [5]. In establishing the first set of safety rules, DuPont made it very clear that the responsibility for safety within the company is placed on the management [5].

In a paper written by Dr Walter Eichendorf entitled Vision Zero: A Vision Evolves, he stated that while Vision Zero is at times referred to as a philosophy or a vision - it is in fact a strategy [5]. A strategy is commonly defined as a plan or set of plans intended to achieve a certain goal - usually over a period of time. Here, amongst the experts, we are already hearing different views on what Vision Zero is about. Sweden, as shared earlier, sees it as a mindset shift; while DuPont has it as a concept. Perhaps, all of us too might have our own definitions and a view of what Vision Zero is all about. A quantitative target, that is a performance target of zero fatalities and injuries - which even if we could achieve it in a particular year, we can never be certain that we would be able to do so for the subsequent years ahead; a desire; an aspirational goal or perhaps manifested at a programme-level format.

As we embark to investigate this phenomenon, there is a realisation that the term 'Vision' Zero connotes different meanings to different groups of audience. With this in mind, if we are formulating national WSH strategies, it would be prudent to be mindful of the different interpretations of this term 'Vision Zero' as the consequent resource to be allocated would categorically be shaped by the understanding and interpretation of Vision Zero.

Family of Zero Goals

There is also a need to be cognisant of the "family of zero" goals. Where should we be leveling Vision Zero

at? A workplace with zero accident or zero incident or towards a more holistic zero harm mindset? When we say zero harm, it does not mean zero risk. There are inherent risks and this is where we need to assess, eliminate or mitigate them [6]. Also, if we are to move up the scale from a workplace of zero incidents to zero harm, and in the process defining the vision for the whole of the nation, we also ought to ask - will the industry and the nation as a whole also accept this definition? And what are the areas that we will need to address to allow WSH to permeate throughout as a national agenda?

Vision Zero: A Self-fulfilling Prophecy

As an ideology, Vision Zero is a state of mind. It reflects our beliefs, our convictions, and our personal values. It is heavily premised on a self-fulfilling prophecy and by that we mean to say that if one is to accept injuries and fatalities as inevitable - and being part of the system – he/she will no doubt be proven right because his/her actions will reflect them [6]. When we ask if Vision Zero is possible, this question has the power to draw out answers that always surprises us. Fundamentally, to accept anything else is to say that it is okay for people to get injured at the workplace [7].

Vision Zero has been claimed by some critics as being naïve, overly ambitious and even unethical [4]. In the 'Power of Zero' by Stephen Minter, he put forth that having this vision of zero injuries has the "Power of Absolute" [7]. And by that, he means to say that, while the vision can motivate and inspire one to strive towards a certain goal, at the other end of the spectrum, it could also fan mistrust and disillusion. Some of the sceptics have mentioned that setting a zero-injury goal has a harmful effect to it if we are to watch it fail year after year - so why try? Why even bother because we are not going to achieve it [7]. Some have also said that it is the worst of all goals as it is unattainable considering the type of industries; the nature of work that we do, and the current status and state of WSH [7]. Also, it is not possible due to other factors such as contributions from off-the-job stress and injuries [7]. Indeed, the proponents of Vision Zero are confronted with this moral dilemma [8].

METHOD

In the selection of countries for the international scan of national strategies on Vision Zero, two key factors were taken into considerations. They are (i) countries which have excellent WSH performance and/or (i) at

the various continuum, countries which have alluded, at the national or strategic programme level, to the fundamentals of Vision Zero - that is, every incident of injury and ill-health is preventable.

The study primarily aimed to gain a better understanding on the approaches taken by these countries towards improved WSH outcomes and performance. Through the respective countries' national strategic documents [9-25], the WSH vision statements were analysed and recurring themes categorized. National programme-level initiatives alluding to the fundamentals of Vision Zero were also studied and included as part of the study protocol.

FINDINGS

Table 1: Vision Zero - National and Programme Levels

Country	Vision Zero at the National Strategic Level	Vision Zero at the National Programme Level
Ontario, Canada	√ (Strategic Plan)	√ Leadership Charter Signatories Programme by The Conference Board of Canada
New Zealand	√ (Prevention Strategy)	√ Zero Harm in the Workplace by The Business Leaders' Health and Safety Forum Partners in Action Pledge Programme by the Ministry of Business Innovation & Employment
Germany	√ (Guiding Principles)	-
Australia	-	√ The Zero Harm at Work Leadership Programme by the Workplace Health and Safety Queensland, Department of Justice and Attorney-General
Finland	-	√ Zero Accident Forum by the Finnish Institute of Occupational Health (FIOH)
Korea	-	√ Zero Accident Campaign (ZAC) by the Korea Occupational Safety and Health Agency (KOSHA)

As shown in **Table 1**, three countries have been identified as having articulated Vision Zero at the national strategic level - although for Canada, it is at the territory level. Information on USA and Great Britain has not been tabulated as there is no publicly available information on these countries. It is an interesting observation to note New Zealand's vision statement which has evolved since, from one that is quantitative in nature to a qualitative one, i.e. "A safe New Zealand, becoming injury free" (in 2003) to "Healthy people in safe and productive workplaces" (in 2005). Also, Germany has adopted a more qualitative definition of Vision Zero by interpreting it as part of its guiding principle in injury prevention.

At the programme-level format, other than the observation of the different definitions from the family of zero goals being adopted, i.e. Zero Harm in the workplace for New Zealand and Australia; and Zero Accident for Finland and Korea, there is also a clear articulation on the importance of the leadership role in driving such initiatives as seen in the (i) Leadership Charter Signatories in Ontario, Canada, (ii) Zero Harm in the Workplace, a flagship programme by the Business Leaders Forum in New Zealand and (iii) Zero Harm at Work Leadership Programme in Australia.

To allow for a better understanding on the plans of the three countries, which have articulated the Vision Zero at the national strategic level, in striving towards achieving their goals, further detailed analysis to identify similar themes from the national strategic documents was carried out.

Implementing Vision Zero

Published in 2007, Ontario, Canada's five-year strategic plan called 'Road to Zero' painted a vision where any workplace injury or disease is unacceptable. And this is further supported by its mission where zero injuries and illness is the only acceptable measure of success. To achieve this, Ontario has initiated a model to reinforce the concept of safe and healthy workplaces. At the forefront of the initiative is the emphasis for the employers and employees to work together on a shared belief to strive towards achieving the common objective. Ontario has also identified the various stakeholder groups in the eco-system, and these include the government agencies, thus it is no longer a ministry-specific agenda; but one which includes other federal jurisdictions and this is backed by evidenced-based WSH research.

Ontario's strategic plan document is further supported by an implementation plan entitled "Mapping the Road to Zero". And by the time this document was launched, a working definition from the family of zero goals, i.e. zero fatalities, injuries and illness has been adopted. The four key thrusts to effecting the change for the prevention strategy are (i) the importance of creating a national habit of safety by driving transformational change in values; (ii) leadership in driving safety (iii) instilling mindset shifts through evidence-based research and (iv) developing prevention partner capabilities, information management tools and communication technology.

By 2010, Ontario, Canada had also convened an expert advisory panel, comprising of local experts, to provide recommendations on how the WSH landscape could be best aligned towards achieving the vision. Forty-five recommendations were provided by the panel [12].

Moving on to Germany, Vision Zero has been articulated in the Prevention Yearbook for 2008-2009, as part of the guiding principles. The prevention strategy cuts across everyday life settings, including work and non-work related activities. Germany has also by then, gained traction in school. This is possibly driven by the awareness on the importance of inculcating WSH values from young. One such initiative is the 'Good and Healthy School' recognition programme.

For New Zealand, similar to the earlier two countries, the prevention strategy is also being integrated into everyday life, across settings such as in homes, use of road transports and sports, among others. The prevention strategy for New Zealand is also backed by an implementation plan with the following four cornerstones: (i) government-agencies alignment (ii) relevant and useful research, data and information (iii) sustainable, safe communities and (iv) better informed workforce.

Identifying Recurring Themes
If we are to draw out common themes from the international scan, in driving the high level national strategy of Vision Zero which could provide insights in formulating the national WSH strategies, evidently, there are the six focal areas which require attention. This is as illustrated in **Figure 1**.

Figure 1: Six Focal Areas in Driving Vision Zero

On the theme of leadership in WSH, the role of leadership has often been cited as playing a critical role in WSH performance [26-28]. In fact, management commitment to safety, active involvement and participation in safety and consistent enforcement of safety policies is often associated with positive safety outcomes [29]. And based on the programme-level initiatives by the countries involved in the study, the role of WSH leadership is apparent being the central theme underpinning the identified focal areas in driving Vision Zero.

On the aspect of WSH culture as part of the national habit and agenda, by this it is meant to say that other than the ownership of the individual, WSH has to be a shared belief - one that transcends across other aspects and jurisdictions as well, such as in schools, roads and sports, to name a few. Safe communities which involve the grassroots with clear identification of priority areas and programmes could be developed. And through the process of evidenced-based research, it would help to support and inform WSH policies and strategies. Underpinning the remaining two themes, would be to inculcate a view of an entire work-life, i.e. from the time someone enters the workforce till he/she retires from it - either voluntarily or otherwise and for the this process to be fortified with strong WSH values and beliefs, and for more informed workforce in matters of WSH.

CONCLUSION

From the observation on the vision and mission statements of all the countries which were included in the study, clearly, an illustration of a progressive WSH journey had been embraced. Vision Zero was explicitly mentioned in the early 2000s, followed by the fundamentals of Vision being alluded to for the subsequent years; and thereafter adopting a more qualitative vision, i.e. an all-encompassing and holistic one, as seen in the recent years. Refer to **Figure 2**.

Figure 2: WSH Vision Statements

While an attempt was made to better understand the impact of Vision Zero on the WSH performance of these countries included in the study, detailed analysis on any positive contributions is currently hindered due to the lack of publicly- available information as references could only be derived from some of the countries [30-36]. Possibly, this could be that the concept of Vision Zero is one that is only recently being embraced, and a long latency period is expected for Vision Zero to take effect as it involved effecting a paradigm mindset shift. Nonetheless, Sweden in 2011, some two decades since the adoption of Vision Zero fundamentals for road traffic, she gained world-wide admiration when it was reported that Sweden has the lowest number of traffic fatalities per capita in the world [37].

In moving forward, since April 2013, the Institute has initiated the WSH Stakeholders' Dialogue with the industry through the WSH Council's committees, taskforces and workgroups. Apart from the sharing on the key findings of the international scan, the dialogue aimed to solicit WSH stakeholders' views on four key thrusts on what Vision Zero means to them, on whether Vision Zero is the right mindset or an utopian one, on whether it should be articulated when framing Singapore's vision and mission in the national WSH strategy document for the future. While the dialogue is

still ongoing, 157 business leaders' insights and perspectives have been sought so far. Preliminary findings showed that 90% of business leaders polled thus far have affirmed that Vision Zero is the right mindset to adopt. The WSH Institute will continue to explore and study what Vision Zero can mean for Singapore, including learning from the experiences of other countries in their journey towards Vision Zero.

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