Peninsula Health with RMIT University School of Design

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safety.

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The condition of being protected from, or unlikely to cause danger, risk, or injury.

Workplace safety refers to the working environment of any type of organisation: small, medium, or large. It also relates to any type of employee, including contractors working remotely or online; and encompasses all factors that impact the safety, health and wellbeing of employees.

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ν.

If landscaping is the process of altering the composition of a garden or a piece of land through design, sensescaping is the process of modifying the sensorial features and characteristics of a tangible or abstract design, may it be a product, a service, a space ... or the Victorian healthcare system.









safety.

How might we use design to enhance the mental wellbeing of healthcare workers exposed to work-related psychosocial hazards in the workplace?

Building on the 2021 Royal Commission into Victoria's Mental Health System ⁽¹⁾ and in anticipation of the Victorian employers' psychological health regulations expected to commence in 2023 ⁽²⁾, this document provides a summary of the research conducted by Dr Olivier Cotsaftis from RMIT University School of Design as a response to the above question.

Based on this research, five opportunities for design and innovation were first framed, then tested through an engagement activity with post-graduate students from the RMIT Master of Design Innovation and Technology. At project end, project findings and selected speculative student projects were presented to staff and executives from Peninsula Health and WorkSafe Victoria. Based on the feedback received, additional funding was secured to conceptualise and prototype two design solutions addressing risks associated with environmental factors in hospital settings.

Safety Sensescaping is a multiphase project within the Thriving in Health program of work ⁽³⁾, a consortium approach to staff mental wellbeing led by Victorian healthcare provider Peninsula Health and supported by WorkSafe's WorkWell Mental Health Improvement Fund ⁽⁴⁾. RMIT University, Peninsula Health, Thriving in Health and WorkSafe Victoria wish to acknowledge the Traditional Owners of the lands on which this report was researched, written and published; and pay their respects to their Elders, past, present and emerging, as well as the Aboriginal Elders from other communities who may be reading this manuscript.



A guide for employers

Preventing and managing work-related stress



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afety Sensescaping

Work-related Psychosocial Hazards

What is a mentally safe and healthy workplace?

It is commonly believed a third of our lives are spent at work — approximately 90,000 hours over the course of a lifetime. Some work because they want to live better lives. Some to be more independent. Others, to feel a sense of purpose and contribution. But despite our differences, one thing is for certain: everyone should feel safe while working, both physically and mentally.

In mentally healthy workplaces:

- mental health is everyone's responsibility
- mental health is considered in every way people conduct work
- everyone contributes to a culture where people feel safe and supported
- mental health support is tailored for individuals and teams
- everyone can see that supporting worker mental health is a priority.

Most importantly, mentally safe and healthy workplaces have measures in place to pre-

vent mental injuries by identifying risks to mental health, managing harm from an early stage, and supporting recovery. By making workplace mental health and safety a priority, an organisation demonstrates:

- commitment to the welfare of employees, clients and the public
- social responsibility in regard to its legal, ethical and moral obligations
- good management practice by proactively addressing mental health and safety issues, resulting in improved organisational performance
- sound financial management by addressing risks and preventing loss through mental illness and injury.

Providing and maintaining a working environment that is safe and without risks to health, so far as is reasonably practicable, is also a legal requirement under the Victorian Occupational Health and Safety Act (2004) and Occupational Health and Safety Regulations (2017).

Psychosocial hazards

Within this context, WorkSafe Victoria recently identified several work-related psychosocial hazards that, if left unmanaged, may increase the risk of stress and mental injury ⁽⁵⁾.

Psychosocial hazards are factors in the design or management of work that increase the risk of work-related stress and can lead to psychological or physical harm. Employees in general and healthcare workers in particular are likely to be exposed to a combination of psychosocial hazards. Some hazards might always be present at work, while others only occasionally.

Psychosocial hazards do not necessarily reveal the causes of work-related stress as causes are likely to be specific to the work, workplace or employee.

In any case, organisations should identify which psychosocial hazards negatively affect employees' health and wellbeing and take appropriate action to control the impact of those hazards.



"Mental health is not a minority issue. It touches almost all employees and can impact their ability to enjoy and live life to the full."

> This Can Happen Report (6) Accenture, 2018

Eleven psychosocial hazards, as defined by WorkSafe Victoria

WorkSafe Victoria identified and defined eleven work-related psychosocial hazards ⁽⁵⁾. Understanding these hazards is crucial in controlling the impacts they may have on employee's mental health and wellbeing.

1-Low job control

Low job control is where employees have little to no control over aspects of the work, including how or when a job is done. This includes tasks or jobs where:

- work is machine- or computer-based
- work is tightly managed, such as in scripted call centres
- employees have little say in the way they do their work, when they can take breaks or change tasks
- employees are not involved in decisions that affect them or their clients
- employees are unable to refuse dealing with aggressive clients, such as in police services.

2- High and low job demands

High and low job demands occur when sustained high or low physical, mental or emotional effort is required to do the job.

High-demand tasks or jobs might include the following examples:

 long work hours and high workloads, for example, too much to do, too many clients, fast work pace or significant time pressure, etc.

Low-demand tasks or jobs might include where there is:

- too little to do
- highly repetitive or monotonous tasks that require low levels of thought processing and little variety, for example, packing products or monitoring production lines.

3- Poor support

Poor support involves tasks or jobs where employees have inadequate:

- emotional or practical support from supervisors and colleagues
- information or training to support their work performance
- tools, equipment, and resources to do the job.

4- Poor workplace relationships

Poor workplace relationships occur in jobs where there is:

- workplace bullying, aggression, harassment, sexual harassment and gendered violence, discrimination or other unreasonable behaviour by colleagues, supervisors or clients
- poor relationships between employees and their managers, supervisors, colleagues and clients, or others the employee has to interact with
- conflict between employees and their managers, supervisors or colleagues, which can become worse if managers are reluctant to deal with inappropriate behaviours
- lack of fairness and equity in dealing with organisational issues or where performance issues are poorly managed.

5- Poor organisational change management

Poor organisational change management occurs in workplaces where there is:

- not enough consideration of the potential health, safety and performance impacts during downsizing or relocations or the introduction of new technology and production processes
- not enough consultation and communication with key stakeholders and employees about major changes
- not enough practical support for employees during transition times.

6- Poor organisational justice

Poor organisational justice occurs in workplaces where there is:

- inconsistent application of policies and procedures
- unfairness or bias in decisions about allocation of resources and work
- poor management of under-performance.

Work-related Psych



7- Poor environmental conditions

Poor environmental conditions involve exposure to poor-quality or hazardous working environments. Examples include:

- hazardous manual handling
- poor air quality
- high noise levels
- extreme temperatures
- working near unsafe machinery.

8-Low role clarity

Low role clarity involves jobs where there is:

- uncertainty about or frequent changes to tasks and work standards
- important task information which is not available to the worker
- conflicting job roles, responsibilities or expectations, such as a worker is told one job is a priority but another manager disagrees or priorities are changed.

9- Low recognition and reward

Low recognition and reward occurs in jobs where:

- there is a lack of positive feedback
- there is an imbalance between employees' efforts and formal and informal recognition and rewards
 - there is a lack of opportunity for skills development
- skills and experience are under-used

.

- there is uncertainty about or frequent changes to tasks and work standards;
- Important task information is not available to the employee
- there are conflicting job roles, responsibilities or expectations. For example, an employee is told one job is a priority but another manager disagrees.

10- Remote and isolated work

Remote work is work at locations where access to resources and communications is difficult and travel times might be lengthy. Examples include:

- farmers
- real estate agents
- a community nurse conducting visits at night
- night-shift operators in petrol stations or convenience stores
- offshore mining
- fly-in, fly-out (FIFO) employees.

Isolated work is where there are no or few other people around or where access to help from others, especially in an emergency, might be difficult.

11- Violent or traumatic events

A violent or traumatic workplace event is a workplace incident that exposes an employee to abuse, the threat of harm or actual harm, and causes fear and distress which can lead to work-related stress and physical injury.

Violent or traumatic events are common in groups such as first responders, healthcare workers, disaster and emergency services, social workers and defence personnel.

Examples of violence or traumatic events include:

- robbery
- verbal or physical assault
- assault
- being bitten, spat at, scratched or kicked
- being threatened with, or without a weapon.

Work-related Psycho

Work-related violence: the most talked-about psychosocial hazard in the healthcare industry



Safety Sensescaping

According to WorkSafe Victoria, workrelated violence happens when a person is abused, threatened or assaulted in circumstances relating to their work ⁽⁷⁾.

It might come from anywhere: patients, carers, the public and even co-workers.

Work-related violence is not exclusive to physical aggression and can also include:

- eye-rolling and sneering
- yelling, swearing and calling names
- standing over someone
- spitting, shoving, tripping, grabbing, hitting and punching
- threats of violence or weapons
- sexual assault.

Work-related violence in the healthcare industry

While recent studies show high levels of work-related violence against healthcare workers in Victoria, the true extent is actually unknown ⁽⁸⁾.

This is partly because there is significant under-reporting of work-related violence happening nationally and internationally. It is also because health services' data is not always of sufficient quality and comparability to provide a statewide picture ⁽⁸⁾.

The 2015 Victorian Parliament Occupational Violence Against Healthcare Workers audit identified that incidents not requiring medical attention — near misses, verbal abuse, and incidents causing mental or psychological distress — were least likely to be reported. In addition, incidents categorised as 'mild', 'near miss' or 'no harm', routinely included being kicked and punched, attemptedstrangulation, kicking a pregnant woman in the stomach, and sexually inappropriate conduct. Categorising such incidents in this way understates the seriousness of these occurrences and does not enable future incidents or risks to be prevented and managed.

One of the main reasons for this under-reporting is staff compassion for patients whose aggression arises from a clinical condition. Staff commonly reason that the patient 'couldn't help it' ⁽⁸⁾.

Despite relevant policies and procedures highlighting the need for healthcare workers to report work-related violence, there is still a widely held view — consistently reported by staff across healthcare settings — that clinically caused violence is an inevitable 'part of the job'.

Work-related mental health and wellbeing in the healthcare industry

In healthcare, work-related mental health and wellbeing is increasingly recognised as an important focus of any effective occupational health and safety program.

Although most workers suffering from mental injury attempt to conceal their conditions out of fear of stigma and the possibility of termination, mental health disorders are commonly encountered in the workplace. Both diagnosed and undiagnosed mental injuries can contribute to poor performance or quality of work, absenteeism, strain in work relationships, need for medication monitoring and potential safety issues ⁽⁹⁾.

Some mental health injuries can also be ascribed to occupational stressors, such as work-related violence. Experiencing or being exposed to work-related violence, or any other psychosocial hazard can cause poor mental health from fear and distress.







Accenture's 2018 This Can Happen report recently revealed that a staggering nine in ten UK workers have been touched by mental health challenges, either personally or through someone they are close to ⁽⁶⁾.

For three out of four respondents, mental health challenges had affected their ability to enjoy life. Forty-six per cent reported being affected to some extent and 30% reported a significant impact, saying they are 'only occasionally, rarely, or never' able to enjoy and take a full part in everyday life.

Whereas specific figures may vary from country to country, worldwide trends are consistent. A 2019 Australian Council of Trade Unions survey reported that about 70% of employees said that their employer either never, or only sometimes took mental health issues in the workplace seriously.

In addition, claims for psychological injury or mental illness are more likely to be rejected than claims for physical injuries. Data provided by State and Territory workers compensation schemes indicate that between 30 and 60% of workers compensation claims related to mental health are rejected in comparison to between 6 to 10% of non-mental health claims ⁽¹⁰⁾.

These findings should compel employers to see mental health and wellbeing differently than most currently do.

Employers should see mental health and wellbeing as something that touches everyone — on a spectrum from good to bad — and that differs from person to person and time to time. Also, something that requires a range of interventions and initiatives that are relevant across that spectrum, from the maintenance of good mental health to policies and practices that support those with more serious conditions ⁽⁵⁾.

In addition, mentally healthy workplaces require leaders that:

demonstrate commitment to mental health in the workplace

Why are organisations not taking action

on mental health in the workplace?

Australian Government Productivity Commission Mental Health report, 2020 (11)

- manage workplace relationships respectfully and treat employees with fairness and respect at all times
- demonstrate a zero-tolerance for bullying and discrimination
- are accessible and willing to listen
- communicate clearly and openly in a timely manner
- provide feedback in a constructive way
- ensure employees have safe workloads
- clarify role expectations and reporting structures
- provide reward and recognition for good work.

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cial Hazard

Impact of work-related psychosocial hazards on healthcare workers

Injuries and illness from exposure to psychosocial hazards

Examples of psychological injuries that may arise from or be exacerbated by exposure to psychosocial hazards include:

- anxiety
- emotional distress
- burnout
- depression
- post-traumatic stress disorder (PTSD)
- trauma or stressor-related disorders
- self-harm or suicidal thoughts.

There can also be physical consequences from exposure to psychosocial hazards, such as increased risk of:

- gastro-intestinal disorders
- musculoskeletal disorders
- immune deficiency
- cardiovascular disease.

Possible effects on performance

Increased exposure to psychosocial hazards can affect performance and lead to, for example:

- reduced productivity and efficiency
- avoidable/unexplained errors
- decline in job satisfaction, morale and team unity
- increased absenteeism
- increased staff turnover
- increased incidents and injuries
- increased conflict
- decline in the quality of relationships
- reduced client/patient satisfaction.



Systemic impact of psychosocial hazards on the healthcare industry

Exposure to work-related violence and other work-related stress factors can have serious health, economic and social consequences, not only for those immediately involved, but for the health sector more generally.

There are substantial economic costs to the health sector associated with sick leave, legal action, diminished staff effectiveness, and the recruitment and retention of staff (12).

For example, the cost of the average Victorian mental health injury claim in 2019 was AU\$125,000, nearly AU\$55,000 more than an average physical injury claim ⁽¹²⁾.

In addition, the rate of mental health related compensation claims in Victoria is increasing: 14.3% in 2019-20, up from 12.6 % in 2017-18 — a figure that is expected to increase by 34% by 2030 ⁽¹²⁾. Victorian workers suffering from mental injuries also take longer to return to work. Two years after their mental health injury, 38% have not returned to work ⁽¹³⁾.

These impacts have serious consequences given the increased pressure and demand on the health sector due to population growth and ageing.

In addition to the impact on individuals' mental wellbeing, work-related stress also has an indirect negative effect on bystanders — including colleagues, other patients and visitors. Alarmingly, it also impacts on the quality of patient care ⁽¹⁴⁾.



Safety Sensescaping

Healing by Design

Respect those that care for you and your loved ones.

Work Safe

PARAMEDIC

There's no excuse for violence or aggression against healthcare workers. No matter the situation, it's never OK.

worksafe.vic.gov.au/itsneverok

The Safety Sensecaping project

From the iconic Sydney Opera House to the humble Google homepage, design decisions have been made about almost everything around us. This observation also holds true for abstract and complex systems such as the Victorian healthcare system.

Ergo, healthcare systems around the world are the product of the sum of the many intentional and unintentional design decisions made by the people and organisations involved in shaping these systems.

Through this research, Peninsula Health and the Thriving in Health consortium aim to address the following question: How might we use design to enhance the mental wellbeing of healthcare workers exposed to work-related psychosocial hazards in the workplace? Healing by Desig



Safety Sensescaping's research objectives

The value of good design has been demonstrated many times over across industries and geographies. Value-creation, however,

Measures of success

should take into account the interests of all stakeholders, and be measured across various forms of capital such as financial, but also human, social and cultural capitals: connections, relationships and community.

Safety Sensescaping aims to provide a platform for design to engage with the pressing issue of occupational mental health and wellbeing within the Victorian healthcare industry.

Through research, opportunities for design and innovation can be framed and design solutions developed and prototyped with the ultimate goal of deploying design thinking and practice in the search for impactful and implementable real world solutions. In other words, design solutions leveraging the knowledge reported in this document should prioritise propositions that not only make good business sense, but also foster value creation across these multiple forms of capital.

In addition, they should address the Thriving in Health consortium design principles.

Let's heal the Victorian healthcare industry, by design.

Thriving in Health Design Principles

Prevention focused

Mental health and wellbeing focus to prevent mental injury.

Creating systems level of change

Can start small, evaluate and outline a strategy for scale.

Working in partnership Expertise, knowledge and resources.

Sustainability Impact beyond funding.

Knowledge creation & dissemination New knowledge and evidence.

Encourage innovation New ways to solve problems. Healing by Design

afety Sensescaping

Introspection & Immersion

A three-pronged approach to mental health in the workplace

As previously described, mental injury is common in the workplace, and represents a growing challenge. Strategies to mitigate this issue, however, do exist.

In 2014, Anthony LaMontagne and colleagues published a breakthrough paper in BMC Psychiatry describing an approach to addressing mental injuries in the workplace (15)

This integrated approach aims to:

- 1. Prevent mental health injuries by reducing work-related risk factors.
- 2. Promote mental health by developing the positive aspects of work, as well as worker strengths and positive capacities.
- 3. Address mental injuries among working people regardless of cause.

This approach to occupational mental health combines the strengths of medicine, public health and psychology; and has the potential to optimise both the prevention and management of mental injury in the workplace.

In addition, it aims to achieve best practice in building mentally healthy workplaces for the full range of relevant stakeholders: workers, employers, industry groups, health professionals, policy-makers, researchers and others.

More recently, Heather Ikins and colleagues built on this thinking and proposed a simplified framework — from reactive to proactive interventions — to describe this threepronged approach to building mentally healthy workplaces ⁽¹⁶⁾.

This new framework is progressively gaining traction amongst practitioners and is described in detail in the following pages.

LaMontagne et al. BMC Psychiatry 2014, 14:131 http://www.biomedcentral.com/1471-244X/14/131



Open Access

DEBATE

Workplace mental health: developing an integrated intervention approach

Anthony D LaMontagne^{1,2*}, Angela Martin³, Kathryn M Page^{1,2}, Nicola J Reavley², Andrew J Noblet⁴, Allison J Milner¹, Tessa Keegel^{5,6} and Peter M Smith^{6,7,8}

Abstract

Background: Mental health problems are prevalent and costly in working populations. Workplace interventions to address common mental health problems have evolved relatively independently along three main threads or disciplinary traditions: medicine, public health, and psychology. In this Debate piece, we argue that these three threads need to be integrated to optimise the prevention of mental health problems in working populations.

Discussion: To realise the greatest population mental health benefits, workplace mental health intervention needs to comprehensively 1) protect mental health by reducing work-related risk factors for mental health problems; 2) promote mental health by developing the positive aspects of work as well as worker strengths and positive capacities; and 3) address mental health problems among working people regardless of cause. We outline the evidence supporting such an integrated intervention approach and consider the research agenda and policy developments needed to move towards this goal, and propose the notion of integrated workplace mental health literacy.

Summary: An integrated approach to workplace mental health combines the strengths of medicine, public health, and psychology, and has the potential to optimise both the prevention and management of mental health problems in the workplace.

Background Mental health problems are common in the working population, and represent a growing concern, with potential impacts on workers (e.g., discrimination), organisations (e.g., lost productivity), workplace health and compensation authorities (e.g., rising job stress-related claims), and social welfare systems (e.g., rising working age disability pensions for mental disorders) [1]. Growing awareness of this issue has been paralleled by the rapid expansion of workplace interventions to address common mental health problems in the workplace setting, particularly as a means to prevent, detect, and effectively manage depression and anxiety [2-4].

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Workplace interventions to address common mental health problems have evolved relatively independently along three main threads or disciplinary traditions: medicine, public health, and psychology (Figure 1). In this Debate piece, we present two premises relating to 1) the high prevalence of such problems and disorders in the working population and 2) that working conditions are a major modifiable risk factor, then argue that the three intervention traditions or threads need to be integrated to achieve the greatest population mental health benefits. An integrated approach would 1) protect mental health by reducing work-related risk factors; 2) promote mental health by developing the positive aspects of work as well as worker strengths and positive capacities; and 3) address mental health problems among working people regardless of cause. Our aim in presenting this framework is to support the achievement of best practice in workplace mental health for the full range of relevant stakeholders: workers, employers, industry groups, labour organisations, policymakers, health professionals, researchers, and others.

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of all relevant stakeholders, generates respect for what has been done well, identifies a shared aspirational view of the future, and plans steps to move in that direction.

As a result, desired outcomes include increased staff mental health and wellbeing, employee engagement, and organisational attributes such as authentic leadership, supportive workplace culture and workplace social capital.

lkins' three levels of interventions to building mentally healthy workplaces

According to Ikins and colleagues, reducing work–related factors is addressed through three types of interventions, ranging from proactive to reactive responses ⁽¹⁶⁾:

- Safety Senses
- 1. Primary interventions aim to remove or reduce risk factors before psychological harm is caused. These interventions are proactive, and target the sources of work-related stress by modifying the job or the work environment.
- 2. Secondary interventions aim to give people the knowledge and skills to cope with stressful work conditions. These interventions are ameliorative, and target employee responses to stress through the development of strategies to improve employees' ability to cope with or withstand stressors.
- 3. Tertiary interventions aim to treat, support and rehabilitate employees with a psychological injury. These interventions are reactive, and target health impacts of stress and psychological injury by treating affected workers and supporting rehabilitation and return to work.





Of importance, job stress prevention is distinguished by its emphasis on primary or universal prevention, and the need to intervene at both the organisational and individual levels.

Implementation in practice, however, has proven challenging, in part because solutions need to be context-specific. Primary interventions are proactive and focus on preventing stress, work-related violence and mental ill-health

Primary interventions are proactive and aim to identify and improve what needs to be fixed rather than blaming individuals, groups or organisations.

It includes the application of methods such as:

- opening dialogues to strengthen positive potential and create change
- establishing a vision and working towards an aspirational view of the future

Secondary and tertiary interventions address mental health problems regardless of cause

Historically, approaches to addressing mental injuries tend to be individual-focused, but these strategies are rapidly expanding to address organisational culture and norms. Secondary interventions can take the form of manager and leadership training, team support interventions or mental health education programs, whereas tertiary reactive interventions can include wellbeing checks, facilitating early help seeking, peer support schemes and the like ⁽¹⁷⁾.

Of importance, early detection and disclosure of mental health conditions are hampered by persisting stigma and the potential for discrimination. The continuing improvement of strategies to address these barriers is a key priority for research, policy and practice.



Joining the threads

A defining feature of these integrated approaches proposed first by LaMontagne and colleagues (2014) then by Ikins and colleagues (2019) is the mutually reinforcing nature of the three threads.

While the preventative nature of primary interventions aims to proactively reduce or remove work-related factors that can undermine the mental health of employees and therefore encourages employers to fulfil their responsibility to provide a safe and healthy working environment — the overall goal of secondary and tertiary interventions is to strengthen and treat individual and organisational health, with the goal of achieving high levels of positive wellbeing. ntrospection & Immersion

This integrated approach to occupational mental health can expect short-term improvements in mental health literacy, followed by longer-term improvements in working conditions and job quality given adequate organisational commitment, support, and time to achieve organisational change.

Developing such an integrated approach to occupational mental health could also be framed as involving the knowledge, beliefs, and skills that aid in the prevention of mental illness in the workplace; with a focus on the recognition, treatment, rehabilitation, and return to work of working people affected by mental illness, regardless of cause.

Needless to say, however, that a focus on primary interventions to proactively remove or reduce risk factors before mental injury is caused is preferred. As when it comes to occupational mental health and work-related violence, prevention is best.



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Case study: violence against nurses

Rates of violence against nurses in hospitals increasing rapidly

ABC News, 2019 (18)

The following is an extract from an ABC News article published Tuesday June 11, 2019.

Former nurse Graham Levy has a fifteen-centimetre hole in his stomach wall, limited movement in his neck, hearing loss, and psychological injuries after being assaulted by a patient.

Sitting across the road from Macquarie Hospital, a health facility in NSW, Mr Levy recalls the day he was attacked.

"This is the first time that I've been here since I was assaulted in February of 2016," he told the ABC. "I'm very uncomfortable about being here." On that day, his life was changed in an instant.

"I went to work, as I usually did. I was given a patient to look after who was critically unwell. I said, 'Hi, my name is Graham, I'm a nurse, would you like some hot water for a cup of coffee?' He's turned around to me, started screaming at me, swearing ... and he's king hit me. I was stunned. He hit me again. I went to the ground. He then kicked me twice in the head, and the abdomen."

While acknowledging that most patients do not exhibit violent behaviours, this case is just one among hundreds of a growing number of incidents of violence against nurses in hospitals and other healthcare facilities in many Australian states.



Learning from work-related violence in healthcare services

A staggering 95% of healthcare workers in Victoria have experienced verbal or physical assault at work; however, only around 20% report the behaviour ⁽¹⁴⁾. Considering work-related violence is the most visible and talked-about work-related stress factor, research on work-related violence and its impact can inform future design direction to address work-related psychosocial risks in general.

Work-related violence is generally minimised by staff making it harder for governance to know the true extent of violence. In fact, the level of violence in some departments is so common that it has become 'just part of the job' and is accepted as normal by healthcare workers ⁽¹⁹⁾.

The number of work-related violence incidents is also, sadly, increasing.

According to a report by the Victorian Crime Statistics Agency, 225 assaults were recorded in healthcare premises in 2011. This figure rose to 721 in 2019. In the past three years alone, the number of people assaulted in Victorian health facilities has increased by a shocking 60% ⁽²⁰⁾.

Types of Occupational Violence and Aggression (OVA) events

Work-related violence is not exclusive to physical violence, it can also include a wide range of behaviours, ranging from verbal acts (e.g. insulting someone or spreading rumours) to actual physical attacks (e.g., punching or slapping). To detail the range of behaviours that can be considered aggressive workplace behaviours, researchers have developed schemes of classification for work-related violence ⁽²¹⁾:

- expressions of hostility behaviours that are primarily verbal or symbolic in nature
- obstructionism behaviours intended to hinder an employee from performing their job or the organisation from accomplishing its objectives
- overt aggression violent acts.

Workplace Violence Statistics1Number of occupational violence incidents reported.1,159Number of occupational violence incidents reported per 100 FTE.31Percentage of occupational violence incidents resulting in a staff injury,
illness or condition.28.3%

Peninsula Health Annual Report, 2019-2020 ⁽²¹⁾

OH&S Performance	2017-18	2018-19	2019-20
Number of reported hazards and incidents for the year per 100 full-time equivalent staff members.	39.1	51	47

Peninsula Health Annual Report, 2019-2020 (22)

In an attempt to further break down the wide range of aggressive workplace behaviours, work-related violence can also be classified according to these differences: verbal or physical, direct or indirect, active or passive ⁽²¹⁾.

For example, a verbal-active-direct act can be insults, yelling or simply being condescending, whereas a physical-active- direct act is characterised by negative or obscene gestures or physical attacks ⁽²¹⁾. Introspection & Immersic

Peninsula Health and work-related violence

How does Peninsula Health tackle workplace violence?

Peninsula Health is committed to protecting the health, safety, and wellbeing of their workforce.

Key Performance Indicators are reportable to the board, including staff incident investigations completed within 30 days, percentage of internal hazard inspections completed and resolved, lost time injuries, and lost time WorkCover claim injury freguency rates ⁽²²⁾.

The incidence of reporting aggression and violence against staff and volunteers has increased in the past few years. 2019 also saw the introduction of the trial of Safewards — an inhouse initiative — to the Emergency Department with the aim of reducing the incidence of work-related violence ⁽²²⁾.

In addition to this, increased signage, which outlines expected behaviour of patients and visitors, has been implemented, along with additional security resources, CCTV cameras and duress alarms.

Staff are also encouraged to report all incidents, which may not previously have been reported, to allow for a greater understanding of the extent of the issue.

In 2019, Peninsula Health started implementing a new People and Culture Strategy with key goals and objectives for staff mental wellbeing, management of occupational violence, bullying harassment and workforce development ⁽²²⁾.



Governance

Commitment to prevent and manage work-related violence

Work-related violence policies are in place

Work-related violence risk management

Internal and external integration

Prevention

Hierarchy of work-related violence risk management

Work-related violence prevention is multifaced

Training

Tailored to staff

Delivered as a part of a model

Based on risk assessment

Evidence based

Response

Responses tailored to organisation profile

Code Black / Code Gray responses

Alarm systems

Immediate response & follow-up for all

Framework for preventing and managing work-related violence

This 2017 framework for preventing and managing work-related violence guides Victorian health services on how to prevent and respond to the risk of occupational violence and aggression ⁽²³⁾. This framework could be applied to the other ten work-related psychosocial risks identified by WorkSafe Victoria.

Reporting

Comparative performance monitoring

Robust and routine reporting systems

Investigating

Incidents investigation and review

Outcomes of investigations are extensively reported



Individual coping strategies to deal with work-related violence

As a mean to mitigate the stress and anxiety associated with workplace violence and other work-related psychosocial risks, the Victorian Department of Health and Human Services recommends healthcare workers to ⁽²⁴⁾:

- Promote helpful self-talk. In moments of distress, positive self-talk can be useful. For example: 'I can cope with this', 'It won't last forever' or 'I'm doing the best I can.' Positive self-talk can help prepare for a stressful situation, confront stressful situations, cope with feelings in a situation, and reflect on an experience.
- Use controlled breathing. The way we feel is affected by the way we breathe. Controlled breathing can be used to manage feelings of fear and anxiety.

- Plan positive activities. Extended breaks or holidays are important for taking care of oneself, but the most powerful activities are those that can be done regularly and in a short amount of time.
- Stay connected with others. Being socially connected and supported is one of the most powerful predictors of a positive outcome following exposure to trauma. People can stay connected to others in lots of different ways, and it doesn't have to involve talking about what happened.

Broader, systemic, and most importantly, preventative strategies should however be preferred, as when it comes to protecting workers from the impact of work-related psychosocial risks, prevention is always best.



Hospital emergency codes

Hospitals and health care facilities use a nationally recognised set of codes to prepare, plan, respond and recover from internal and external emergencies ⁽²⁵⁾.

There is no state legislation that requires hospitals to implement, in whole or in part, the standards. However, accreditation bodies may refer to these when assessing a hospital's preparedness for emergencies.

The hospital emergency codes are based upon the Australian Standard (AS) 4083 — 2010 Planning for emergencies — Health care facilities, and include:

Fire/smoke
Bomb threat
Infrastructure and other
internal emergencies
External emergency
Evacuation
Personal threat

In addition, Victorian health services need to have an emergency alert of Code Grey that is separate from Code Black.

A Code Grey is an organisation-level response to actual or potential violent, aggressive, abusive or threatening behaviour, exhibited by patients or visitors towards others or themselves, and which creates a risk to health and safety. In brief, it is a code for work-related violence.

While local arrangements may vary, Code Grey policies and procedures must align with the principles and standards outlined in the Victorian Department of Health and Human Services Code Grey Standards ⁽²⁵⁾.

Consistent implementation of Code Grey responses is vital to prevent and respond appropriately to work-related violence in Victorian public healthcare services. "There is a real human cost to workplace violence. Staff who are assaulted have higher levels of anxiety, post-traumatic stress disorder, depression, and substance abuse. This is human capital that is being lost."

> Laura A. Stokowski Violence: not in my job description, 2010 ⁽²⁶⁾



iafety Sensescaping

Opportunities for Design

Design insights

Design insights are powerful. By shedding light on behavioural patterns, they draw connections between head and heart knowledge, and point design teams in directions that could otherwise go unexplored. In this section, we present design insights that emerged from the literature, site visits in various hospital wards, as well as formal and informal conversations with healthcare workers performing various roles and at various seniority levels.

Human healthcare

A lot of energy and resources have been spent on designing progressive patient-centric healthcare systems over the years. While their implementations are still ongoing, the healthcare workers we've talked about all expressed — often through humour and compassion for others — a latent need for more targeted focus on their wellbeing. A human healthcare system should be both patient and staff-centric.

Can-do, alw<u>ays on</u>

Despite demanding rosters and short breaks, work culture in the healthcare industry is characterised by a can-do, always-on attitude. Research is showing, however, that mental wellbeing is being affected by the blurring of boundaries between work and life. Positive workplace cultures are also consistently associated with a wide range of patient outcomes such as reduced mortality rates, falls, hospital acquired infections and increased patient satisfaction. How can we balance the demands of a high-pressured job and staff wellbeing in a modern hospital environment?

No privacy

Despite year-on-year increases in per capita healthcare expenditure over the last 20 years, staff experience in Victorian hospitals is not often a priority. Sharing facilities with colleagues, but also, patients, healthcare workers often have very little to no privacy for lunch, breaks, and even bathroom breaks. Moments of peace are few and far between.

Institutional stress

Significant efforts are being made to manage the impact and decrease the incidence rate and severityof work-related psychosocial risks in healthcare settings. Yet, work-related mental health and wellbeing incidents continue to rise along with healthcare workers' stress and anxiety. Other types of approaches need to be investigated. How can design offer complementary solutions to the one currently being proposed by hospital administrations?

Lifers

The Victorian healthcare system is filled with passionate and driven professionals who spend the greater part of their lives — from university to retirement, and sometimes beyond — caring for the injured, the sick and the dying among us. Healthcare is a calling, not a profession, where work-related stress is often seen as part of the job.

Archetypes

Archetypes are common behaviours that all humans understand and relate with regardless of culture, history or personal context. They are abstractions of typical people. Interestingly, people's behaviours can change in a very short amount of time based on the circumstances they are exposed to. As such, individuals can identify with one or many archetypes depending on how their day unfolds. Here are the main five healthcare industry archetypes we've encountered through our research.

The caregiver

The caregiver stands for altruism, compassion, patience and empathy. It represents unselfish concern and devotion to nurture and care for others. Their door is always open, and so are their eyes, ears, and heart.

The devotee

Empathy in medical practices is a one-way road. Staff are tasked with accommodating patients' pain, stress and fear while ignoring their own. The devotee represents healthcare workers who actively suppress their emotional and physical needs to better service those of others.

The hacker

In a world of limited resources and strict regulations, the hacker makes things happen when needed. Hackers are quick to diagnose situations and promptly act on them with everyone's best interest in mind. Sometimes breaching protocols, patient and staff safety is, however, never breached.

The cognisant

With all its rules and regulations, the healthcare system can be hard to navigate, even for the most experienced staff. The cognisant simply knows what to do and when, and keeps up to date with new processes and procedures.

The first-timer

Lack of exposure to work-related stressors can be more traumatic for first-timers than for experienced staff. Bespoke solutions should be designed for first-timers to mitigate this potential heightened risk.

Design opportunities

Based on the research presented so far, we were able to frame a set of five design and innovation opportunities — described hereafter alongside case studies and precedents.





Re-code

Victorian healthcare facilities use code names to alert their staff to an emergency or other event. These codes can be communicated through an intercom in the hospital or sometimes directly to staff using communication devices like pagers.

Hospital emergency codes are extremely important to the safety of people inside a hospital. Healthcare workers undergo extensive training to respond to each of these events, allowing them to save lives.

One of the primary benefits of a code system is that trained hospital employees know to respond to any given emergency without alarming those being treated and hospital visitors. On the other hand, the constant flow of daily alerts coming through saturated and low-fidelity overhead speakers is an ear-sore, and adds to the heightened anxiety feeling typically felt by both patients and staff in hospital facilities.

Some hospitals are transitioning from the color code system to a plain-language notification system. For example, instead of announcing "Code red, first floor, main lobby," staff announce "Fire, first floor, main lobby."

Such a system simplifies emergency notifications and decrease confusion among staff. There is also some thought that it would be beneficial for those being treated to be aware of an emergency state so that they can respond appropriately. Another alternative is the so-called silent hospital where codes are dispatched to targeted individuals through pagers only.

Such strategies have been tried but didn't yield satisfactory results due to the hardware and software cost involved, as well as the difficulty to target people based on their location. Contemporary digital and autonomous technologies, however, could address these issues.

How might we redesign hospital emergency codes as to lower staff stress and anxiety in hospital settings?

James Dunglinson

Security Manager

Peninsula Health, Victoria, Australia

"Frontline healthcare workers are often thought of as the targets of workplace violence but non-clinical healthcare workers such as security guards, emergency departments administrative staff, and even food service workers, are also exposed to workplace violence and other work-related psychosocial risks," says James Dunglinson, Security Manager at Peninsula Health.

"In my team, security agents are trained for face-to-face aggression management so they can better respond to code grey alerts when they occur, which can be quite often depending on the day and the ward." A recent South Australian study showed that the most common reasons for security guard attendance when a code black is called (there is no code grey in SA), are patients threatening or harming staff, or patients threatening or harming other patients. The most frequent security guard actions are 'Attend only/standby,' 'Physical restraint,' and 'Patient located and returned to the ward.' The most frequent outcomes are physical restraint, chemical restraint and de-escalation (27).

As the prevalence of security guards in healthcare settings is growing worldwide, there is a need to explore and understand their role and actions to inform policy and training, support least restrictive practices, and minimise mental health and wellbeing impacts on healthcare workers.



Juan Carlos Rey hospital

A Spanish hospital designed around efficiency, light and silence

Rafael de La-Hoz, Image by Alfonso Quiroga for ArchDaily, 2012

Modern hospitals typically serve citizens efficiently, but they do so in unnecessarily dramatic and sometimes depressing architectural spaces. The effectiveness of the architectural template is the cause of its repetitiveness, resulting in the all too familiar unsatisfactory hospital experience known by most.

Located in the outskirts of the Spanish capital Madrid, the Rey Juan Carlos Hospital was designed according to an innovative citizen-centric model that includes the needs of patients, staff, and even visitors and third-parties organisations in its blueprint.

The outcome is an experiential contemporary facility designed not only for efficiency, but that also maximises natural light — and silence — for the benefit of all people navigating the space.



Re-zone

In recent decades, hospital design has paid increasing attention to an apparent need to humanise hospital environments.

Despite the prevalence of this design goal, the concept of humanising a space has rarely been defined or interrogated in depth. As it happens, many features of humanistic design are not revolutionary by nature, but are thought to counterbalance the high-tech, scientific and institutional nature of medical facilities.

The choice of the term 'humanising' is not void of judgment. It carries with it an assumption about the dehumanisation of modern medicine, and is built on implicit binaries between the human and the technological. Patients and healthcare workers — humans, as it happens — have similar needs: the ability to receive or provide state-of-the-art care, while having their privacy and intimacy needs acknowledged and respected in down times.

These basic human and professional needs could easily be met through the thoughtful zoning of hospital amenities, as well as the provision of spaces that restore harmony in a naturally stressful environment.

How might we re-zone healthcare facilities to prevent staff mental injuries and promote mental health and wellbeing?



Alex MacLean

Operations Manager Support Services

Peninsula Health, Victoria, Australia

Alex MacLean is the Operations Manager for Support Services at Peninsula Health, and as such, oversees the day to day management of non-clinical services across multiple sites including cleaning services, ward support, security, waste management, fleet management, patient transport and environmental sustainability.

"Non-clinical staff such as ward support staff and security employees are also at risk of work-related psychosocial risks," says Alex, before mentioning that clinical and non-clinical staff alike lack private spaces where they can unwind and relax away from the traditional energy of the hospital. "Initiatives such as workplace stress mitigation training or meditation sessions are useful and even necessary but potentially do not cater to the needs of all staff. Solutions do not have to be fancy nor expensive either. A window with a view, fresh air, direct sunlight, green buildings, outdoor spaces and privacy away from patients and visitors ... These are the things that could make a difference."

Photographed here is Alex and one of his team members taking a break in the nearby park on a sunny day to compensate for a lack of these essential spaces in modern hospital environments.



Peninsula Health, Frankston hospital redevelopment

In September 2018, the Victorian Government made a commitment to redevelop the Frankston Hospital with a proposed investment of \$562 million.

Built as a community hospital in 1941, the hospital has undergone periodic development over time. The new investment seeks to redevelop and expand the hospital, with a major new inpatient service tower linking into the existing Frankston Hospital ⁽²⁸⁾.

The new infrastructure will add capacity for 120 additional beds and improve the ability to meet contemporary standards for optimal care for the communities of Frankston and Mornington Peninsula. To kick-start the project, the Victorian Health and Human Services Building Authority launched a survey to seek input from the Frankston and Mornington Peninsula community on the healthcare services and community benefits that matter to them (29).

Seventy per cent of respondents wanted to see gardens embedded in the Frankston Hospital architecture, followed by spaces for families (61%), cafes and restaurants (61%) and newsagent/postal/banking services (44%). These services would also be beneficial to staff mental health and wellbeing.



Adamant hospital

A psychiatric hospital rocked by the river

Seine Design, Image by Sergio Grazia for ArchDaily, 2019

In the centre of Paris, a new hospital offers psychiatric patients an open space that looks more like artist studios than a traditional medical ward.

The approach was to design a building that gives meaning to the most common everyday events by making them spectacular. Weather conditions like rain, sun or wind become festivals in which the downpour enters the heart of the building, the reflections of light on the river are transformed into plays of shadows and lights behind the movable shutters, and the passage of boats engenders a soothing rocking. The outcome: a hospital that feels like an object of exchange between staff and patients, and where workplace violence is contained through good design.

Hospital design must follow strict guidelines and standards when designing spaces used for surgery, consultations and diagnostics. Specific regulations are also needed regarding patient care to create functioning buildings. Yet, designing with constraints — and purpose — can generate superior outcomes in terms of form and experience.

With the vast amount of knowledge accumulated to date through research, we now have the opportunity to design hospitals that work for both patients and healthcare workers — and that enhance the mental health and wellbeing of healthcare workers.





SoundCloud HQ

An office space designed to enhance occupational mental health and wellbeing

Kinzo, Image by eOffice, 2015

Most industries and organisations share similar problems, and looking at case studies from different industry sectors provide a different perspective when problem-solving.

The tech world, for example, is well known for trying to provide an enhanced staff experience. Renowned music streaming company SoundCloud proved just that when opening their Berlin headquarters.

The Berlin SoundCloud office space is unconventional. It has a total capacity of 350 people and offers plenty of perks, such as a library, a garden, yoga room, fireplace, and even a relaxation/napping area with an acoustic isolating curtain for privacy.

A wood-burning fireplace lounge area is purposefully tech free, so employees can switchoff for a moment and engage in non-work related conversations or alone time.

Re-sensitise

There are approximately 59 million healthcare workers worldwide. But do these millions of workers, who toil every day to provide healthcare to the ailing population, enjoy good health themselves?

Prior to COVID-19, healthcare workers might have already been dealing with long hours, shift work and demanding and stressful work that impacted on their physical health, mental health and overall wellbeing.

COVID-19 has compounded these problems, and many healthcare workers are now reporting additional tiredness and exhaustion. Is this normal? 'Normal', is a subjective term that refers to what we perceive as normal, or what we think normal should be, regardless of whether it actually is.

The need of the hour — actually a legal requirement in Victoria — is to prioritise the occupational health and safety of health workers, and ensure that the workforce is adequately trained and healthy.

Perhaps part of the solution is to re-sensitise the healthcare industry to what 'normal' is, and provide the means for healthcare workers to deal with workplace stress and violence in relevant and contemporary ways.





A virtual reality simulator training nursing students to deal with conflict

Dr Donovan Jones and University of Newcastle, 2020

Rising numbers of workplace violence events have prompted the creation of Angry Stan, an abusive virtual hospital visitor that is being used to teach future healthcare workers skills to identify volatile patients, and try to deal with them before they resort to violence.

Co-creator Donovan Jones said he and University of Newcastle colleague Michael Hazelton, used their backgrounds in emergency department violence to come up with the realistic virtual scenario that sees Stan involved in a car accident and entering a virtual emergency department, potentially injured and in shock.

"Students actually have a heart rate monitor that affects the game so the more they stress out the harder it is for Stan to do the right things," he said.

Today, training is still the number one strategy to help staff deal with workplace violence; but traditional talk and chalk training can easily be ineffective. How can we re-imagine staff training when it comes to workplace violence and aggression?





Dogs4Docs

Healthcare workers experiencing tough times can now turn to a workplace wellbeing dog — Kenzo — for support under a new program to combat mental injury.

Peninsula Health partnered with the State Government and Guide Dogs Victoria on this pilot program, and will investigate and monitor the impact of workplace dogs on the wellbeing of doctors and nurses. It's also hoped that Kenzo will reduce the stigma around mental health and open up a conversation. "Kenzo and I move around the various Peninsula Health sites to ensure that he can interact with as many staff as he can," says Jen Sidwell, Peninsula Health Dogs4Docs Program Manager. Later this year, Kenzo will be involved in a formal research project with doctors at Peninsula Health.

Research is showing that pets, especially dogs and cats, can reduce stress, anxiety and depression. They can also ease loneliness, encourage exercise and playfulness, and even improve cardiovascular health. Dogs4Docs is a great initiative to soothe healthcare workers in demanding hospital environments.

Secluded pods to meditate, smash things or scream

"Secluded pods that allow office workers to meditate, smash things or scream will soon be commonplace," says UNStudio architecture studio founder Ben van Berkel, after research found that stress-related illness costs the US economy US\$300 billion a year.

The Dutch architect claims that many big companies will install breakout pods in their workplaces in the near future to combat the epidemic levels of stress experienced by office workers all around the globe.

No matter the industry, employers have to address the mental health and wellbeing of their employees. Millennials and future generations of healthcare workers also deserve fit-for-purpose, innovative and unconventional solutions to address this increasing issue.



Re-culture

Societal cultures can be defined as a pattern of ideas, customs and behaviours shared by a particular group of people.

Similarly, organisational cultures are a collection of values, expectations and practices that guide and inform the actions of a group of people working for an organisation. In some sort, they are a collection of traits that make a company what it is. Societal or organisational, healthy cultures should however, constantly evolve to adapt to the contemporary world.

With these definitions in mind, the healthcare system could be defined as a complex interweb of small to large, public and private organisations, each with their own cultures. How can the culture of such a complex system be designed to better fit the contemporary world we live in, prevent mental injury and enhance staff mental health and wellbeing in general?

In healthcare, organisational culture is correlated with patient outcomes in over 90% of studies ⁽³⁰⁾. The same should hold true for healthcare workers' mental health and wellbeing.

Let's design healthcare cultures that focus on preventing mental injury and enhancing mental health and wellbeing.



Telehealth

Telehealth is the use of digital information and communication technologies — such as computers and mobile devices — to access healthcare services remotely and manage patients' health.

Covid-19 drastically sped up the adoption of Telehealth services in Australia. Between March and September 2020, nearly 10.6 million Australians sought more than 30.5 million medical consultations with GPs, nurses, midwives and allied health and mental health services (31). Historically, virtual care attendances accounted for only 0.1% of all Medicare Benefits Schedule claims; but the 2020 pandemic helped to normalise the behaviour, which is now considered as yet another option when patients are not free to see a doctor face to face.

Step by step, technologies are changing the culture of the Australian healthcare system.

What other technical shift may enhance the mental health and wellbeing of healthcare workers exposed to violent or traumatic events in the workplace?





Should medical education and training adapt to the reality of contemporary living?



Grit magazine

A youth-led resilience publication for peer-topeer support

future ensemble studio and Local Peoples, 2018

Mental health issues in youth traditionally stem from an underlying sense of detachment, and from an overwhelming feeling that they do not belong. However, despite the fact that the youth of today enjoy a far less violent environment, the rates of teen depression and suicide have skyrocketed since 2010 ⁽³²⁾.

We as a society, need to address the kinds of advice and support structures that young people have access to. Grit Magazine is a youth-led magazine, designed by young people for young people. Through youth-led interviews, Grit tells the stories of inspiring people from all ages and backgrounds; and asks them what they would advise to their younger selves across a large cross-section of topics such as relationships, professional life, health, heritage and self-discovery to name a few.

One of the key benefits of peer support initiatives is the greater perceived empathy and respect that peer supporters have for the individuals they support ⁽³³⁾. Other benefits include increased levels of self-esteem, confidence and positive feelings that they are doing good. Could grass-roots, peer-support groups become a prominent feature of a cross-institutional mental health and wellbeing strategy in the healthcare industry?

Grit Magazine was a finalist of the inaugural 2018 National Gallery Victorian Design Challenge (34).

Re-imagine

Contemporary design practices show us how design is increasingly used to solve large and complex problems, and as a result, how the role of the designer continues to develop in response. But design is not solely a problem-solving practice. It can also envision solutions for better futures at a societal scale.

Speculative design — along with other discurvise design practices such as critical design and design fiction — goes beyond the creation of individual objects, services or spaces, and projects into the realms of fiction and imaginary worlds. It is an approach to design that can either provide a critique of the status quo, or brings ideas to life to help us think through the futures we need and are proposing. As time passes and technology advances, however, speculative design can move us closer to future realities. Most importantly, it can provide people and organisations a sense of purpose and direction that help define short, mid- and long term goals — and guide decision making along the way.

What would a contemporary hospital that took care of its staff mental health and wellbeing look, feel and operate like?



Santa Fe de Bogota foundation

A Colombian hospital designed to increase our connection with nature

El Equipo de Mazzanti, Image by Andrés Valbuena for ArchDaily, 2016

Biophilia — affinity for nature — is a phenomenon that speaks of our innate attraction to nature and natural processes. Biophilic design is an extension to this, and can be defined as the incorporation of vegetation, natural materials, natural light, nature views and other experiences from the natural environment into the built environment.

There is significant evidence showing the positive effects of biophilic architecture and design on human health and wellbeing. For example, hospitals and other medical facilities designed accordingly to biophilic principles have been found to have substantial healing benefits for patients. This is because simple inclusions of nature, or interpretations of it, aid in the healing of patients.

Incorporating biophilic architecture and design features into the built environment have shown to reduce stress, blood pressure levels and heart rates, whilst increasing productivity, creativity and self-reported rates of wellbeing. Statistically speaking, the incorporation of biophilia within hospitals has reduced post-operative recovery time by 8.5% and the use of pain medication by 22% ⁽³⁵⁾.

What is true for patients should also hold true for staff. How can the modern hospital be re-imagined to incorporate biophilia as one of its core design principles?



90

Halo

An art experience using light to heal

Karolina Halatek, 2019

Arts activities involve aesthetic engagement, the involvement of the imagination, sensory activation, evocation of emotion and cognitive stimulation. They are also less often known to be health promoting. Depending on their nature, art activities may indeed involve social interaction, physical activity, engagement with themes of health and interaction with healthcare settings.

In 2019, Polish artist Karolina Halatek presented Halo as part of an artist residency in Chengdu, China. The illuminated ring encircles the viewer in a soothing white glow, and upon immersion, the viewer becomes a fundamental part of the art piece. Halos refer to the natural optical phenomena produced by light seen around the sun or moon. In Karolina's work, the place of the celestial body is given to the art viewer, who becomes a central part of this immersive art piece.

"The essence of the work comes from the imaginary super-natural sensation of clarity, light and extended space. While interacting with the work, one has the possibility to discover a new dimension of their own presence in a contemplative, pure and abstract environment," said Karolina.

Could experiential and artistic spaces help healthcare workers on their journey towards mental wellbeing?



Opportunities for Design



A bio-based & biodegradable hospital gown that minimises hospital waste to landfill

RMIT University, 2020

The physical impact of the climate crisis is impossible to ignore, but experts are becoming increasingly concerned about another, less obvious consequence of this escalating emergency — the strain it is putting on people's mental wellbeing.

According to the Victorian Government, Victorian public healthcare services could now be generating as much as 52,000 tonnes of solid waste per annum ⁽³⁶⁾. This pollution contributes to climate change and affects entire ecosystems as well as human health and wellbeing. As future generations will most likely suffer the brunt of our climate inaction, could the design of low-carbon, circular and regenerative medical facilities help alleviate the general anxiety linked to the destruction of our environment?

In 2020, a group of RMIT post-graduate design students presented Aegis, a bio-based and biodegradable Personal Protective Equipment (PPE) made from an Australian aquatic weed commonly known as Cumbumgi. In their vision, the collection and biodegradation of used gowns through anaerobic digestion could also partially power medical facility operations, resulting in further environmental benefits through energy savings. Aegis was conceptualised by students Charlotte McCombe, Jui Apte and Tanuj Kalra under the supervision of Dr Olivier Cotsaftis, and won the best in category award in student design at the 2020 Victorian Premier's Design Awards ⁽³⁷⁾.



afety Sensescaping

Stakeholder Engagement

What happened? A timeline of events

Upon completion of the research phase mid-2021, Dr Olivier Cotsaftis opened up the project to 23 of his post-graduate students from the Master of Design Innovation and Technology.

Over the span of one academic semester, the students were tasked to develop speculative design concepts addresing both the eleven psychosocial hazards defined by WorkSafe Victoria as well as the five design and innovation opportunities framed by the Safety Sensescaping research.

While a few students worked individually, others worked in group in a studio setting, developing a total of ten design concepts presented in the following pages. Overall, the aim of this engagement phase was not to document detailed design solutions but rather, to translate the opportunities framed by the research into speculative concepts, and inspire the project stakeholders about the value of design in addressing complex industry problems such as staff mental health and wellbeing in the healthcare industry.

After a few months of active engagement with various Thriving in Health consortium stakeholders, the students' concepts were presented to an audience of over 40 Peninsula Health and WorkSafe staff and senior executives on December 6, 2021.

Based on the feedback received, additional funding was allocated to Dr Cotsaftis to conceptualise and prototype two design solutions addressing risks associated with environmental factors in hospital settings. "I've been enjoying hearing from the different industry stakeholders in this project. And I also appreciate the time and effort put into getting the class to understand their perspective."

RMIT MDIT Student Verbatim, December 2021



Syne

Syne explores how the monitoring of EEG and other brain patterns can be used to improve mental wellbeing, facilitate self-healing and prevent mental injury.

Mengke Lian | Re-Sensitise + Re-Culture MDIT Valedictorian student and RMIT School of Design Dean's List Image & Video: Mengke Lian, Syne, 2021

Patient wellbeing in hospital is traditionally considered a priority over the wellbeing of healthcare workers. Meanwhile, more than a third of workers in the healthcare industry have experienced burnout.

Syne is a mental wellbeing headset that uses bio-data feedback technologies to monitor staff stress patterns and prevent mental injury. By raising awareness on the connection between sensory perception, consciousness and behaviour, Syne aims to improve user mental wellbeing and foster mentally healthy workplaces. The project outcomes include a mental health self-checking headset, a digital platform and a shared interactive meditation space.



Salutogenic Spaces

Located in the basement of a commercial building, a Salutogenic Space provides a refuge for healthcare workers on a break, or at the start and end of their shift.

Aakash Verma | Re-Zone + Re-Sensitise Image: EASA, Il Bocca, 2015

In the age of human-centered design, hospitals and healthcare facilities are typically designed to address patient over staff needs, resulting in poor environmental working conditions. This situation has only been aggravated by the ongoing COVID-19 pandemic.

Salutogenic Spaces is a parametric spatial design project aiming to provide a modular and biophilic restorative space to improve healthcare workers' mental wellbeing — salutogenesis being an approach to human health that examines the multiple factors contributing to physical and mental wellbeing, with particular emphasis on the coping mechanisms that help to preserve health despite stressful conditions.



Mindful Sanctuary

Mindful Sanctuary proposes to use hospital stairwells to provide an impromptu refuge that improves the physical and mental wellbeing of healthcare workers.

Shivani Jadhav | Re-Zone + Re-Sensitise Image: Michael Dziedzic, Kinetic Art, 2020

Mindful Sanctuary is a refuge for healthcare workers amidst the typical high and low job demands and long working hours of the healthcare industry.

By transforming a simple functional space — hospital stairwells — into a restorative space, a hideout for caregivers during working hours, it provides the necessary privacy to quickly break away from the day, recharge and prevent mental injury.

Using sensory kinetic design and biophilic features, Mindful Sanctuary provides either a calming or energising experience, while encouraging stair use to improve workers' fitness, body composition and blood flow — indirectly increasing the mental welfare of hospital workers.



Synthetic Biophilia

Synthetic Biophilia is an algorythm that replicates the patterns of nature to design restorative objects and spaces.

Alexander Einoder | Re-Imagine Image: Alexander Einoder, Synthetic Biophilia, 2022

This project is the only student project completed in 2022 post the Safety Sensescaping stakeholder presentation in December 2021.

Evolutionary psychology theory posits that humans are instinctively drawn to living things such as the sight and sound of nature. This theory has now been confirmed with recent research in neuro and behavioural science solidifying the connection between the built environment and human health and wellbeing. With a vast majority of time spent indoors, especially in developed countries, it is now vital to understand how architectural design can help to maximise people's psychological and physiological wellbeing.

Following a biophilic approach to design, insights from environmental neuroscience, and the mathematics of botany, Synthetic Biophilia is an algorythm that allows the design of dome structures that exhibit the geometric patterns of plant growth. This digital exploration enables the illumination of a potential methodology in which the underlying mathematics of natural forms can be applied to modern architecture and design.





Asonic

Asonic is a passive acoustic solution that mitigates ambient sound levels in hospitals. Through biophilic and parametric design, it reduces auditory stressors by diffusion, scattering and absorption, subsequently redefining the healthcare experience.

Alexander Einoder, Carlo Holden Altimont, Lezhou Shen | Re-Sensitise Image & Video: Asonic group, Asonic, 2021

Noise levels in hospitals have been correlated with elevated stress and anxiety among patients and healthcare workers alike. In addition, the spatial limitations of a typical hospital interior present a challenging scenario for acoustic treatment implementation. How can we mitigate sonic disturbance while conforming to hospital design regulations?

The Asonic panel mitigates extraneous noise through the unification of acoustic treatment principles and the use of biomaterials such as tree-free cellulose and a PHA bioplastic composite. Meanwhile, the parametric design deconstructs nature into its mathematical elements, then re-imagine it under a hospital-appropriate context to further reduce stress and increase mental wellbeing.



Living Pavilion

Living Pavilion is a biophilic pause point filled with modular canopies to help resensitise healthcare workers. Floating garden beds and shaded areas transform unused spaces to facilitate biophilic rituals.

Stephanie Ochona, Tyler Gilmer-Reeves, Mohammed Alfzari | Re-Zone + Re-Sensitise Image: Ronan and Erwan Bouroullec, Nuage, 2017

Ninety-five per cent of healthcare workers believe that working in mentally healthy environments is important yet, only 51% feel that they do. High/low job demands and poor working environments put professionals at risk of mental injury.

While acknowledging breaks are rare during working hours, how might we design a start/ end-of-shift ritual to improve workers' mental wellbeing?

Living Pavilion is a biophilic pause point that encourages rest and play. The destination hopes to resensitise individuals to a new normal and create a new space that focuses on improving mental wellbeing and preventing mental injury by building resilience in individuals.



Cynthia

Designed specifically for the female body, Cynthia is a Personal Protective Equiment (PPE) with improved breathability, comfort and fit for donning and doffing that provides a better working experience for female healthcare workers.

Veerisa Boonrod, Pei Li, Yili Qu | Re-Culture + Re-Imagine Image: Cynthia group, Cynthia, 2021

Since the start of the Covid-19 pandemic, it has become apparent that PPE does not protect all healthcare workers equally. Most PPE is designed based on the sizes and characteristics of a male body; and ill-fitting PPE puts female healthcare workers at higher risks and stress levels.

Cynthia is a disposable protective gown — correctly sized and designed for women, that also considers sustainability and the environment at its core. Through developing an understanding of PPE material, form and function, Cynthia provides a vision and approach for a sustainable PPE that protect female healthcare workers both physically and mentally.

Guiding Light

Guiding Light is an interactive handrail for hospital corridors that supplements the audio hospital emergency code with a visual experience to reduce healthcare workers' cognitive load, hopefully preventing mental injury.

Siyi Shan, Xiaoyun Shi, Nika Ashoori, Lu Gao | Re-Code Image: Guiding Light group, Guiding Light, 2021

Hospital emergency codes are coded audio messages to alert staff of various classes of on-site emergencies. The use of codes is intended to convey key information with minimal misunderstanding while preventing stress among hospital patients and visitors. However, the high frequency of codes and their audio quality have been identified as an opportunity for innovation. How might we enhance the delivery of emergency alerts to minimise impact on healthcare workers' cognitive load and mental wellbeing?

Guiding Light is an interactive handrail for hospital corridors that supplements the audio code with a coloured visual experience, assisting staff both operationally and mentally. When a Code Blue medical emergency is called, for example, the handrail changes colour, providing a visual cue as to where their expertise is needed.



Lighting For Your Path

Lighting for Your Path is a universal wayfinding system for hospitals that aims to improve hospital efficiency and staff mental wellbeing by avoiding unnecessary requests for direction.

Tianni Huang, Qinyan Luo, Yiran Yang, Yuhang Wang | Re-Sensitise Image: dn&co, Here East Wayfinding London, 2016

It is becoming evident that poor wayfinding in hospitals is disorienting for patients and visitors, causing unnecessary stress and impacting mental wellbeing. Research is also showing that, each year, hours of two full-time equivalent staff are spent providing directions. This shows the importance of taking an integrated and coordinated approach to support logical and clear navigation within healthcare facilities.

Lighting for Your Path is a soft and calming wayfinding system that universally provides navigation information across the spectrum of visual abilities, with the hope of improving hospital efficiency and improving staff mental wellbeing by avoiding unnecessary direction requests from patients and visitors.



StoryTrail

StoryTrail is a storytelling platform aiming to unite the community around their most valued participants: healthcare workers. Through sharing, healthcare workers feel supported and celebrated for their work.

Li Yin, Yayi Zheng, Zhu Ming | Re-Culture Image: 'In honour of all the brave nurses', Mural by Tristan Eaton, Montefiore Medical Center, Bronx, NYC, USA, 2020

Telling stories is one of the most powerful means to influence and inspire. It forges connections among people, while stories themselves convey the culture and values of a community. As such, story sharing is an empowering tool to increase community wellbeing.

StoryTrail is a storytelling platform that aims to unite the community and mentally support healthcare workers by sharing stories about health and healing and celebrating successes. User stories are naturally vetted before publication to protect the platform integrity while a secondary feature called the Valley, helps people to privately process their feelings through visualisation of spoken words.



afety Sensescaping

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To find out more about WorkSafe,WorkWell, the Mental Health Improvement Fund, and mental health in the workplace please visit: <u>https://www.workwell.vic.gov.au/</u>. References & Contact Information









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